Supplementary Materials:

Table S1: The 529 active compounds in *Glycyrrhiza glabra* and *Curcuma domestica*
Table S2: The 1507, 1258, and 430 targets from SEA, STP, and merged targets between SEA and STP, respectively.
Table S3: The 292, 171, and 450 skin photoaging cancer-related targets from Genecard, OMIM and merged targets between GeneCards and OMIM, respectively
Table S4: The final 120 targets against cancer
Table S5: The topological feature of 117 targets obtained from Cytoscape
Table S6: GO analysis of the targets
Table S7: KEGG analysis of the targets
Table S8: Final Targets for GG and CD

Table S1 The 529 active compounds in *Glycyrrhiza glabra* and *Curcuma domestica*

No	Name	Pubchem ID	Molecular Weight	Herbs	Source			
					Reference	KnapSack	TCMSP	TCMID
1	curcumin	969516	368.38	CD	v		v	v
2	sodium curcuminate	6445487	412.34	CD	v			
3	demethoxycurcumin	5469424	338.35	CD	v		v	v
4	octahydrocurcumin	11068834	376.44	CD	v			
5	bisdemethoxy curcumin	5315472	308.33	CD	v		v	v
6	tetrahydroxycurcumin	129762283	432.38	CD	v			
7	1-(4-hydroxy-3-methoxyphenyl)-7-(3, 4-dihydroxyphenyl)-1,6-heptadiene-3, 5-dione	390474	354.35	CD	v			v
8	1-(4-hydroxyphenyl)-7-(3, 4-dihydroxyphenyl)-1,6-heptadiene-3, 5-dione	68738786	324.33	CD	v			v
9	1,7-bis(4-hydroxyphenyl)-1-heptene-3,5-dione: R1= H, R2= H	9796708	310.34	CD	v			v
10	3-hydroxy-1,7-bis-(4-hydroxyphenyl)-6-heptene-1,5-dione	91307775	326.34	CD	v			
11	cyclocurcumin	69879809	368.38	CD	v			
12	calebin-A	637429	384.38	CD	v			v
13	1-(4-hydroxy-3-methoxyphenyl)-5-(4-hydroxyphenyl)-penta-(1E,4E)-1,4-dien-3-one	10469828	296.32	CD	v			
14	1,7-bis(4-hydroxyphenyl)-3-hydroxy-1,3-heptadien-5-one	10614892	310.34	CD	v			
15	1,5-bis(4-hydroxyphenyl)-penta-(1E,4E)-1,4-dien-3-one	6437306	266.29	CD	v			
16	vanillic acid	8468	168.15	CD	v	v		
17	(E) ferulic acid	445858	194.18	CD	v	v		
18	vanillin	1183	152.15	CD	v			v
19	(E)-4-(4-hydroxy-3-methoxyphenyl)but-3-en-2-one	5354238	192.21	CD	v			
20	α-pinene	6654	136.23	CD	v		v	
21	β-pinene	14896	136.23	CD	v		v	
22	1,8-cineol	2758	154.25	CD	v		v	v
23	trans-chrysanthenyl acetate	10899521	194.27	CD	v			
24	borneol	64685	154.25	CD	v		v	
25	isopulegol	170833	154.25	CD	v			
26	p-mentha-1,4 (8)-diene	11463	136.23	CD	v			
27	2-menthen-1-ol	526657	154.25	CD	v			
28	menth-1-en-9-ol	86753	154.25	CD	v			
29	2-methoxy-4-vinylphenol	332	150.17	CD	v			
30	(E,E,E)-3,7,11,15-tetramethylhexadeca-1,3,6,10,14-pentaene	5365883	272.47	CD	v			
31	2,6,11,15-tetramethylhexadeca-2,6,8,10,14-pentaene	549768		CD	v			
32	Myrcene	31253	136.23	CD	v			v
33	(Z)-β-ocimene (cisocimene)	5320250	136.23	CD	v			
34	undecanol	8184	172.31	CD	v			
35	linalool	6549	154.25	CD	v			v
36	phytol	5280435	296.53	CD	v			
37	1,6,10,14-hexadecatetraen-3-ol,3,7,11,15-tetramethyl-, (E,E)-	5365872	290.48	CD	v			
38	2-isopropylidene-3-methylhexa-3,5-dienal	562478	150.22	CD	v			
39	palmitic acid	985	256.42	CD	v			v
40	pentadecanoic acid	13849	242.4	CD	v			
41	Palmitoleic acid	445638	254.41	CD	v			v

42	heptadecanoic acid	10465	270.45	CD	v			
43	stearic acid	5281	284.48	CD	v			v
44	oleic acid	445639	282.46	CD	v			v
45	linoleic acid	5280450	280.45	CD	v			
46	arachidic acid	10467	312.53	CD & GG	v			
47	docosanoic acid	8215	340.58	CD	v			v
48	lignoceric acid	11197	368.64	CD	v			
49	8,11-octadecadienoic acid, methyl ester	5319737	294.47	CD	v			
50	O-cymene	10703	134.22	CD	v			
51	hemellitol	10686	120.19	CD	v			
52	β-elemene	6918391	204.35	CD	v			
53	4-isopropenyl-1,2-dimethylcyclohexane-2-enol	536558	166.26	CD	v			
54	cis-p-menth-2,8-dienol	155626	152.23	CD	v			
55	curlone	196216	218.33	CD	v		v	
56	α-zingiberene	11127403	204.35	CD	v	v		v
57	β-sesquiphellandrene	12315492	204.35	CD	v	v		
58	Ar-turmerone	160512	216.32	CD	v	v	v	v
59	α-turmerone	14632996	218.33	CD	v	v	v	
60	bisacurone	14287397	252.35	CD	v			v
61	eugenol	3314	164.2	CD	v			
62	zingerone	31211	194.23	CD	v			
63	β-bisabolene	10104370	204.35	CD	v	v	v	
64	Ar-curcumene	92139	202.34	CD	v		v	
65	β -curcumene	14014430	204.35	CD	v			
66	β-vatirenene	608753	202.34	CD	v			
67	(E)-β-caryophyllene	5281515	204.35	CD	v		v	v
68	α-cedrene	6431015	204.35	CD	v		v	
69	β-cedrene	11106485	204.35	CD	v			
70	α-santalene	94164	204.35	CD	v			
71	α-thujone	261491	152.23	CD	v			
72	cis- sabinol	94147	152.23	CD	v			
73	curcumenol	167812	234.33	CD	v			
74	turmeronol A	11117927	232.32	CD	v		v	
75	turmeronol B	10955433	232.32	CD	v		v	
76	turmerol	20055538	220.35	CD	v			
77	α-atlantone	12299868	218.33	CD	v			
78	germacrone-13-al	14633002	232.32	CD	v			
79	Labda-8(17),12-diene-15,16-dial	11077520	302.45	CD	v			
80	β-sitosterol	222284	414.71	CD & GG	v			v
81	stigmasterol	5280794	412.69	CD	v		v	v
82	gitoxigenin	348482	390.51	CD	v			
83	20-oxopregn-16-en-12-yl acetate	22295917	358.51	CD	v			
84	γ-elemene	6432312	204.35	CD			v	
85	Anethole	637563	148.2	CD & GG			v	v

86	Campesterol	173183	400.68	CD			v	
87	Curcumol	14240392	236.35	CD			v	v
88	Germacron	6436348	218.33	CD			v	
89	2,5-dihydroxybisabola-3,10-diene	157009920	238.37	CD			v	
90	zedoarondiol	24834047	252.35	CD			v	v
91	procurcumadiol	14633011	250.33	CD			v	v
92	bisacumol	5315469	218.33	CD			v	v
93	bergamotene	521569	204.35	CD			v	
94	Dicumene	74681	238.37	CD			v	
95	Docusate	11339	422.58	CD				v
96	Ethylbenzene	7500	106.17	CD				v
97	Farnesol	445070	222.37	CD				v
98	Geraniol	637566	154.25	CD & GG				v
99	Geranyl acetate	1549026	196.29	CD				v
100	Hexahydrocurcumin	5318039	374.43	CD				v
101	Isoeugenol	853433	164.2	CD				v
102	Linolenic acid	5280934	278.43	CD				v
103	Menthofuran	329983	150.22	CD				v
104	Methyl benzoate	7150	136.15	CD				v
105	Myristic acid	11005	228.37	CD				v
106	(S)(+)Carvone	16724	150.22	CD				v
107	Phenol	996	94.11	CD				v
108	Tetrahydrocurcumin	124072	372.41	CD				v
109	Toluene	1140	92.14	CD				v
110	Zerumbone	5470187	218.33	CD				v
111	(+)-Curcuphenol	156118	218.33	CD				v
112	Limonene	22311	136.23	CD				v
113	Xanthorrizol	93135	218.33	CD				v
114	4-[(Z)-2-(3-Methoxyphenyl)Ethenyl]Phenol	5469252	226.27	CD				v
115	Terpineol	17100	154.25	CD & GG				v
116	1,5-Bis(4-Hydroxy-3-Methoxyphenyl)-1,4-Pentadien-3-One	131752986	326.34	CD	v	v		v
117	Dehydrodeguelin	3083803	392.4	CD				v
118	Tetramethoxycurcumin	9952605	396.43	CD				v
119	Nerolidiol	5356544	222.37	CD				v
120	Gamma-terpinene	7461	136.23	CD				v
121	(+)-Germacrene D	24771782	204.35	CD				v
122	1,7-Bis(4-Hydroxy-3-Methoxyphenyl)Hept-1-Ene-3,5-Dione	85140635	370.4	CD			v	v
123	1,7-Bis(4-Hydroxy-3-Methoxyphenyl)-1,4,6-Heptatrien-3-One	10904292	352.38	CD				v
124	(1E,4Z,6E)-5-Hydroxy-1,7-Bis(4-Hydroxyphenyl)Hepta-1,4,6-Trien-3-One	2537	308.33	CD				v
125	4,7,7-Trimethylbicyclo[2.2.1]Heptan-3-One		152.23	CD				v
126	Dehydrocurdione	6442617	234.33	CD				v
127	1,7-Bis(4-Hydroxyphenyl)-1,4,6-Heptatrien-3-One	10447050	292.33	CD				v
128	Alpha-Bisabolol	1549992	222.37	CD			v	v
129	Arachidonic Acid	444899	304.47	CD				v

130	Benzaldehyde	240	106.12	CD				v
131	Benzene	241	78.11	CD				v
132	Carvacrol	10364	150.22	CD				v
133	Chlorothalonil	15910	265.91	CD				v
134	Citral	638011	152.23	CD				v
135	Citronellol	8842	156.27	CD				v
136	Citronellyl Acetate	9017	198.3	CD				v
137	Congo Red	11313	696.66	CD				v
138	Cyclovalone	1550234	366.41	CD				v
139	p-Coumaric acid	637542	164.16	CD		v		
140	4-Hydroxybenzoic acid	135	138.12	CD		v		
141	alpha-D-Glucose	79025	180.16	CD		v		
142	Erythritol	222285	122.12	CD		v		
143	Glycerol	753	92.09	CD		v		
144	Inositol	892	180.16	CD & GG		v		
145	Ribitol	6912	152.15	CD		v		
146	Acetic acid	176	60.05	CD & GG		v		
147	Citramalic acid	1081	148.11	CD		v		
148	Fumaric acid	444972	116.07	CD & GG		v		
149	Malonic acid	867	104.06	CD		v		
150	Oxalic acid	971	90.03	CD		v		
151	Shikimic acid	8742	174.15	CD		v		
152	Succinic acid	1110	118.09	CD		v		
153	L-Alanine	5950	89.09	CD		v		
154	beta-Alanine	239	89.09	CD		v		
155	L-Asparagine	6267	132.12	CD		v		
156	L-Aspartic acid	5960	133.1	CD		v		
157	L-Glutamic acid	33032	147.13	CD		v		
158	L-Leucine	6106	131.17	CD		v		
159	L-Serine	5951	105.09	CD		v		
160	L-Threonine	6288	119.12	CD		v		
161	L-Tryptophan	6305	204.23	CD		v		
162	L-Tyrosine	6057	181.19	CD		v		
163	L-Valine	6287	117.15	CD		v		
164	Citric acid	311	192.12	CD & GG		v		
165	uridine	6029	244.2	CD		v		
166	beta-Himachalene	11586487	204.35	CD		v		
167	cis-beta-Farnesene	5317319	204.35	CD		v		
168	D-Fructose	2723872	180.16	CD		v		
169	Dihydroferulic acid	14340	196.2	CD		v		
170	Aconitic acid	643757	174.11	CD		v		
171	Lactic acid	612	90.08	CD		v		
172	Malic acid	525	134.09	CD & GG		v		
173	Glycyrrhizin	128229	822.93	GG	v		v	

174	18-β-glycyrrhetinic acid	44435791	470.68	GG	v	v		
175	Liquiritin	503737	418.39	GG	v	v	v	
176	isoliquiritin	5318591	418.39	GG	v	v	v	
177	liquiritigenin	114829	256.25	GG	v	v		
178	Glabrene	480774	322.35	GG	v	v	v	
179	glabridin	124052	324.37	GG	v	v	v	
180	Glucoliquiritin apioside	74819335	712.65	GG	v	v		
181	prenyllicoflavone A	11349817	390.47	GG	v	v		
182	shinpterocarpin	10336244	322.35	GG	v	v	v	
183	Glisoflavone	5487298	368.38	GG	v			
184	kanzonol R	131753027	370.44	GG	v	v		
185	Licochalcone A	5318998	338.4	GG	v	v	v	
186	Hispaglabridin A	442774	392.49	GG	v	v	v	
187	Hispaglabridin B	15228661	390.47	GG	v	v	v	
188	licuraside	14282455	550.51	GG	v		v	
189	glyzaglabrin	5317777	298.25	GG	v	v	v	
190	Licocoumarin	5324358	406.47	GG	v	v		
191	Glycycoumarin	5317756	368.38	GG	v	v	v	
192	licopyranocoumarin	122851	384.38	GG	v	v	v	
193	glabrocoumarone A	10542808	308.33	GG	v	v		
194	glabrocoumarone B	15233562	308.33	GG	v	v		
195	Semilicoisoflavone B	5481948	352.34	GG	v	v	v	
196	1- methoxyficifolinol	480872	422.51	GG	v		v	
197	isoangustone A	21591148	422.47	GG	v	v		
198	licoriphenone	21591149	372.41	GG	v			
199	Pentanol	6276	88.15	GG	v			
200	hexanol	8103	102.17	GG	v			
201	2,3 Butanediol	262	90.12	GG	v			
202	Propionic acid	1032	74.08	GG	v			
203	benzoic acid	243	122.12	GG	v			
204	ethyl linoleate	5282184	308.5	GG	v			
205	Furfuraldehyde	7362	96.08	GG	v			
206	butyric acid	264	88.11	GG	v			
207	Xenognosin B	5280551	284.26	GG		v		
208	15,15'-cis-Phytoene	9963391	544.94	GG		v		
209	Geranylgeranyl diphosphate	447277	450.44	GG		v		
210	Glabranin	124049	324.37	GG		v	v	
211	Naringenin	932	272.25	GG		v	v	
212	Naringin	442428	580.53	GG		v	v	
213	Dihydrochrysin	68071	256.25	GG		v	v	
214	Genkwanin	5281617	284.26	GG		v		
215	Isovitexin	162350	432.38	GG		v		
216	Isokaempferide	5280862	300.26	GG		v		
217	D-Pinitol	164619	194.18	GG		v		

218	Mevalonic acid	439230	148.16	GG		v		
219	Pyruvic acid	1060	88.06	GG		v		
220	Prunasin	119033	295.29	GG		v		
221	Isobavachalcone	5281255	324.37	GG		v	v	
222	Afrormosin	5281704	298.29	GG		v		
223	Biochanin A	5280373	284.26	GG		v		
224	Formononetin	5280378	268.26	GG		v	v	
225	Genistein	5280961	270.24	GG		v		
226	Licoisoflavone A	5281789	354.35	GG		v	v	
227	Luteone	5281797	354.35	GG		v		
228	Ononin	442813	430.4	GG		v	v	
229	(-)-Phaseollinisoflavan	162412	324.37	GG		v	v	
230	Pratensein	5281803	300.26	GG		v		
231	Prunetin	5281804	284.26	GG		v	v	
232	Wighteone	5281814	338.35	GG		v		
233	Cycloartenol	92110	426.72	GG		v		
234	beta-Amyrin	73145	426.72	GG		v		
235	Betulinic acid	64971	456.7	GG		v	v	
236	Lupeol	259846	426.72	GG		v		
237	7,4'-Dihydroxyflavone	5282073	254.24	GG		v	v	
238	Gancaonin Q	480802	406.47	GG		v	v	
239	Kanzonol D	15291875	322.35	GG		v		
240	7,4'-Dihydroxyflavone 7-glucoside	44257571	416.38	GG		v		
241	Sophoraflavone B	5491513	416.38	GG		v		
242	Norwogonin 7-glucuronide	44258552	446.36	GG		v		
243	Wogonoside	3084961	460.39	GG		v		
244	Galangin	5281616	270.24	GG		v		
245	Kaempferol	5280863	286.24	GG		v	v	
246	Kumatakenin	5318869	314.29	GG		v	v	
247	Licoflavonol	5481964	354.35	GG		v	v	
248	Topazolin	5481965	368.38	GG		v		
249	Isolicoflavonol	5318585	354.35	GG		v	v	
250	Gancaonin P	5481966	370.35	GG		v	v	
251	Glyasperin A	5481963	422.47	GG		v	v	
252	Uralenol	5315126	370.35	GG		v	v	
253	Astragalin	5282102	448.38	GG		v	v	
254	Hirsutrin	5280804	464.38	GG		v	v	
255	Rutin	5280805	610.52	GG		v	v	
256	Puerarin	5281807	416.38	GG		v		
257	Schaftoside	442658	564.49	GG		v	v	
258	Vicenin-2	442664	594.52	GG		v	v	
259	Isoviolanthin	101422758	578.52	GG		v	v	
260	Echinatin	6442675	270.28	GG		v	v	
261	Isoliquiritigenin	638278	256.25	GG		v	v	

262	Licochalcone B	5318999	286.28	GG		v	v	
263	Homobutein	6438092	286.28	GG		v		
264	Glyinflanin B	480799	338.35	GG		v		
265	Glyinflanin A	15742118	408.49	GG		v	v	
266	Licochalcone C	9840805	338.4	GG		v	v	
267	Kanzonol B	10881804	322.35	GG		v	v	
268	Kanzonol C	5316802	392.49	GG		v	v	
269	Licochalcone D	10473311	354.4	GG		v	v	
270	Glyinflanin G	15233561	404.46	GG		v		
271	Rocymosin B	42607726	436.41	GG		v		
272	Licuroside	6475724	550.51	GG		v		
273	Isoliquiritigenin 4,4'-diglucoside	42607522	580.53	GG		v		
274	(S)-2,3-Epoxysqualene	5459811	426.72	GG		v		
275	Isoglabranin	480763	324.37	GG		v		
276	Tephrinone	156589	338.4	GG		v		
277	Liquiritin apioside	10076238	550.51	GG		v	v	
278	Isobavachin	193679	324.37	GG		v		
279	Abyssinone II	10064832	324.37	GG		v		
280	Sigmoidin B	73205	356.37	GG		v	v	
281	Xambioona	14769500	388.46	GG		v	v	
282	Licoflavanone	14218027	340.37	GG		v		
283	Euchrenone a5	14769498	390.47	GG		v		
284	Glabrol	11596309	392.49	GG		v	v	
285	3-Hydroxyglabrol	480854	408.49	GG		v	v	
286	7-Hydroxy-2-methylisoflavone	5380976	252.26	GG		v		
287	Daidzein	5281708	254.24	GG		v		
288	7-Methoxy-2-methylisoflavone	354368	266.29	GG		v		
289	3'-Hydroxydaidzein	5284648	270.24	GG		v		
290	Glycitein	5317750	284.26	GG		v		
291	Glyzarin	44257206	294.3	GG		v		
292	Odoratin	13965473	314.29	GG		v	v	
293	Glabrone	5317652	336.34	GG		v	v	
294	Licoricone	5319013	382.41	GG		v	v	
295	Licoisoflavone B	5481234	352.34	GG		v	v	
296	Parvisoflavone A	11710066	352.34	GG		v		
297	6,8-Diprenylgenistein	480783	406.47	GG		v	v	
298	Angustone A	15664151	422.47	GG		v		
299	Licoisoflavanone	392443	354.35	GG		v	v	
300	Isomedicarpin	13803636	270.28	GG		v		
301	1-Methoxyphaseollidin	480873	354.4	GG		v	v	
302	Edudiol	70698091	354.4	GG		v		
303	Isomucronulatol	602152	302.32	GG		v		
304	4'-O-Methylglabridin	5319664	338.4	GG		v		
305	3'-Methoxyglabridin	5319439	354.4	GG		v	v	

306	Licoricidin	480865	424.53	GG		v	v	
307	Glycyrol	5320083	366.36	GG		v	v	
308	Isoglycyrol	124050	366.36	GG		v	v	
309	Glycyrin	480787	382.41	GG		v	v	
310	Isoderrone	14237660	336.34	GG		v		
311	Sophoraisoflavone A	10383349	352.34	GG		v		
312	Gancaonin G	480780	352.38	GG		v	v	
313	Hydroxywighteone	5378945	354.35	GG		v		
314	Lupiwighteone	5317480	338.35	GG		v	v	
315	Gancaonin L	14604077	354.35	GG		v		
316	Angustone B	5481235	420.45	GG		v		
317	Gancaonin H	5481949	420.45	GG		v	v	
318	2'-Hydroxyisolupalbigenin	14237659	422.47	GG		v		
319	Senegalensin	124035	408.49	GG		v		
320	Glycyrrhisoflavanone	5317762	368.38	GG		v		
321	Isoglycycoumarin	14187587	368.38	GG		v	v	
322	Licoarylcoumarin	10090416	368.38	GG		v		
323	Phaseol	44257530	336.34	GG		v	v	
324	Gancaonin F	5317482	364.35	GG		v		
325	Licocoumarone	503731	340.37	GG		v	v	
326	Gancaonin I	480777	354.4	GG		v	v	
327	Calycosin 7-O-glucoside	5318267	446.4	GG		v		
328	Afrormosin 7-O-glucoside	44257244	460.43	GG		v		
329	Glycyroside	101939210	562.52	GG		v	v	
330	Afrormosin 7-O-(6''-malonylglucoside)	44257246	546.48	GG		v		
331	Licoflavone A	5319000	322.35	GG		v		
332	Macarangaflavanone B	14309760	408.49	GG		v		
333	Shinflavanone	197678	390.47	GG	v	v	v	
334	Pinocembroside	42607861	418.39	GG		v		
335	Kanzonol Z	10319154	406.47	GG		v	v	
336	Licoagrochalcone A	11099375	324.37	GG		v		
337	Licoagrochalcone B	5318989	336.38	GG		v		
338	Licoagrochalcone C	5318990	354.4	GG		v		
339	Licoagrochalcone D	5318991	354.4	GG		v		
340	Kanzonol Y	10001604	410.5	GG		v	v	
341	Licoagroaurone	12069327	338.35	GG		v		
342	Licoagrone	5318993	742.81	GG		v		
343	Licoagrodin	637141	728.83	GG		v		
344	Gancaonin U	480818	380.48	GG		v	v	
345	Gancaonin S	480816	382.49	GG		v	v	
346	Gancaonin R	480815	382.49	GG		v	v	
347	Glyasperin F	392442	354.35	GG		v	v	
348	Licofuranocoumarin	5319001	384.38	GG		v	v	
349	Licoagroside A	73357140	492.43	GG		v		

350	Tachioside	11962143	302.28	GG		v		
351	Isotachioside	15098566	302.28	GG		v		
352	Tachiogroside B	22297602	432.38	GG		v		
353	3-Methyl-2-butenyl 6-O-alpha-L-arabinopyranosyl-beta-D-glucopyranoside	131753120	380.39	GG		v		
354	Isolupalbigenin	26238934	406.47	GG		v		
355	Scanderone	72962588	410.5	GG		v		
356	Kanzonol W	15380912	336.34	GG		v	v	
357	Glyasperin D	480860	370.44	GG		v	v	
358	Kanzonol V	102444980	376.44	GG		v		
359	Kanzonol X	10046166	394.5	GG		v	v	
360	Kanzonol T	101999902	438.47	GG		v	v	
361	Glyasperin M	101664572	368.38	GG		v	v	
362	Glyasperin K	101664570	384.42	GG		v	v	
363	Glyasperin B	480784	370.4	GG		v	v	
364	Glyasperin C	480859	356.41	GG		v	v	
365	Eurycarpin A	5317300	338.35	GG		v	v	
366	Folerogenin	5319509	302.28	GG		v		
367	Glycyrrhisoflavone	5317764	354.35	GG		v		
368	Liquiritigenin 7,4'-diglucoside	73981649	580.53	GG		v		
369	Glabrocoumarin	11427657	336.34	GG		v		
370	Glabroisoflavanone A	11221431	338.35	GG		v		
371	Glabroisoflavanone B	11405466	352.38	GG		v		
372	Licochalcone E	46209991	338.4	GG		v		
373	Uralstilbene	11783899	382.49	GG		v		
374	Glicophenone	10021298	358.39	GG		v		
375	3,4-Didehydroglabridin	102119815	322.35	GG		v		
376	4-Hydroxylonchocarpin	5889042	322.35	GG		v		
377	Docosyl-3,4-dihydroxy-trans-cinnamate	20980926	488.74	GG		v		
378	Licoagrocarpin	15840593	338.4	GG		v	v	
379	Isoglabrolide	15559941	468.67	GG		v	v	
380	licoricesaponin A3	14187172	985.07	GG		v		
381	licoricesaponin B2	13457500	808.95	GG		v	v	
382	Licoricesaponin C2	452864	806.93	GG		v	v	
383	Licoricesaponin D3	131752373	1013.13	GG		v		
384	licoricesaponin E2	86278258	820.92	GG		v		
385	Licoricesaponin G2	14891565	838.93	GG		v	v	
386	Licorice saponin H2	12889143	822.93	GG		v	v	
387	licoricesaponin J2	14891570	824.95	GG		v	v	
388	Liqcoumarin	11378967	218.21	GG		v		
389	Liquiritic acid	112111	470.68	GG		v		
390	Liquoric acid	131751571	484.67	GG		v	v	
391	1-Methoxyphaseollin	131753054	352.38	GG		v		
392	Araboglycyrrhizin	195342	778.92	GG		v	v	
393	erybacin B	46913127	326.34	GG		v		

394	Dehydroglyasperin C	480775	354.4	GG		v	v	
395	Dehydroglyceollin I	101879416	320.34	GG		v		
396	Corylifol B	10472405	340.37	GG		v		
397	Glicoricone	10361658	368.38	GG		v		
398	Glycyuralin E	163184220	370.4	GG		v		
399	Glyurallin B	15818599	422.47	GG		v		
400	Isoglabrone	102597283	336.34	GG		v		
401	Uralsaponin B	163744	822.93	GG		v	v	
402	Uralsaponin C	86278344	824.95	GG		v		
403	Uralsaponin F	86278342	896.97	GG		v		
404	Uralsaponin M	162623962	880.97	GG		v		
405	Uralsaponin P	162623698	824.95	GG		v		
406	Uralsaponin T	118707637	955.09	GG		v		
407	Uralsaponin W	86278365	806.93	GG		v		
408	Uralsaponin X	91618087	1027.11	GG		v		
409	Uralsaponin Y	86278367	967.06	GG		v		
410	Anaphalisoleanenoic acid	12305517	456.7	GG		v		
411	9(11)-Dehydroglycyrrhetic acid	25566774	454.68	GG		v		
412	alpha,beta-Dihydrorhaponticin	11430133	422.43	GG		v		
413	Cordifolin	100998102	424.4	GG		v		
414	Desoxoglabrolide	5257561	454.68	GG		v		
415	Cyclotetradecane	67524	196.37	GG		v		
416	Glabraisoflavanone A	163183920	478.62	GG		v		
417	5,6,7,8-Tetrahydro-4-methylquinoline	185667	147.22	GG		v	v	
418	5,6,7,8-Tetrahydro-2,4-dimethylquinoline	5321849	161.24	GG		v	v	
419	Apioglycyrrhizin	195343	778.92	GG		v	v	
420	Licochalcone G	49856081	354.4	GG		v	v	
421	24-Hydroxy-licoricesaponin A3	134715216	1001.07	GG		v		
422	Glycyrrhetol	12310283	456.7	GG		v	v	
423	Kanzonol Q	11253965	260.29	GG		v		
424	3'-Hydroxy-4'-O-methylglabridin	15228662	354.4	GG		v	v	
425	Glabric acid	46173993	486.68	GG		v		
426	Glycyrrhetic acid 3-O-glucuronide	161800	646.81	GG		v		
427	Isopropyl pyrophosphate	79916	346.29	GG		v		
428	3,3',5'-Trihydroxy-4-methoxybibenzyl	11459623	260.29	GG		v		
429	Hedysarimcoumestan B	11558452	298.25	GG		v		
430	protocatechuic acid	72	154.12	GG			v	
431	o-xylene	7237	106.17	GG			v	
432	m-xylene	7929	106.17	GG			v	
433	p-xylene	7809	106.17	GG			v	
434	Inermine	91510	284.26	GG			v	
435	Morusin	5281671	420.45	GG			v	
436	Izoforon	6544	138.21	GG			v	
437	ISOHEPTANE	11582	100.2	GG			v	

438	Heptan	8900	100.2	GG			v	
439	Medicarpin	336327	270.28	GG			v	
440	oleanolic acid	10494	456.7	GG			v	
441	nicotiflorin	5318767	594.52	GG			v	
442	butylated hydroxytoluene	31404	220.35	GG			v	
443	Neouralenol	5320118	370.35	GG			v	
444	isorhamnetin	5281654	316.26	GG			v	
445	Narcissoside	5481663	624.54	GG			v	
446	2-Caren-10-al	556516	150.22	GG			v	
447	Scopoletol	5280460	192.17	GG			v	
448	Calycosin	5280448	284.26	GG			v	
449	Methylheptane	11594	114.23	GG			v	
450	beta-Terpinene	66841	136.23	GG			v	
451	(E)-1-butoxyhex-2-ene	545296	156.27	GG			v	
452	Isotrifoliol	5318679	298.25	GG			v	
453	kanzonol K	131753069	436.5	GG			v	
454	Kanzonol L	131753032	488.57	GG			v	
455	Glepidotin A	5281619	338.35	GG			v	
456	Glepidotin B	442411	340.37	GG			v	
457	WLN: 4OVR	8698	178.23	GG			v	
458	3-(2-hydroxy-4-methoxyphenyl)-2H-chromen-7-ol	10378419	270.28	GG			v	
459	Glypallichalcone	5317768	284.31	GG			v	
460	Karenzu DK2	8433	224.25	GG			v	
461	(1S,2S)-1,2-dimethylcyclopentane	641612	98.19	GG			v	
462	Liconeolignan	133867	354.4	GG			v	
463	2,2-DIMETHYLPENTANE	11542	100.2	GG			v	
464	Yinyanghuo D	5315396	338.35	GG			v	
465	Gancaonin A	5317478	352.38	GG			v	
466	Gancaonin B	5317479	368.38	GG			v	
467	Gancaonin C	6450959	354.35	GG			v	
468	2,3-dimethylhexane	11447	114.23	GG			v	
469	licorice glycoside E	42607811	693.65	GG			v	
470	Gancaonin D	5317481	384.38	GG			v	
471	(3S)-2,3-dimethylpentane	22810194	100.2	GG			v	
472	Gancaonin T	101606424	398.49	GG			v	
473	Gancaonin V	480817	312.36	GG			v	
474	(4S)-2,4-Dimethylhexane	22810193	114.23	GG			v	
475	(E)-3-[3,4-dihydroxy-5-(3-methylbut-2-enyl)phenyl]-1-(2,4-dihydroxyphenyl)prop-2-en-1-one	11267805	340.37	GG			v	
476	3,22-Dihydroxy-11-oxo-delta(12)-oleanene-27-alpha-methoxycarbonyl-29-oic acid	195396	512.68	GG			v	
477	glabrolide	90479675	468.67	GG			v	
478	2-methyl-5-propyl -nonane	545954	184.36	GG			v	
479	Sextone B	7962	98.19	GG			v	
480	Methylcyclopentane	7296	84.16	GG			v	
481	(-)-Medicocarpin	23724664	432.42	GG			v	

482	vitexin	5280441	432.38	GG			v	
483	4H-1-Benzopyran-4-one, 2-(4-(beta-D-glucopyranosyloxy)phenyl)-2,3-dihydro-5,7-dihydroxy-	157745	434.39	GG			v	
484	violanthin	442665	578.52	GG			v	
485	Pentadecanol	12397	228.41	GG			v	
486	Uralenol-3-methylether	5315127	384.38	GG			v	
487	Isohexane	7892	86.18	GG			v	
488	Uralene	192490	384.38	GG			v	
489	uralenneoside	132594	286.23	GG			v	
490	Nortangeretin	96506	302.24	GG			v	
491	neoliquiritin	51666248	418.39	GG			v	
492	neoisoliquiritin	5320092	418.39	GG			v	
493	Cyclobutanol, 1-ethyl-	145025	100.16	GG			v	
494	2-Tetradecanone	75364	212.37	GG			v	
495	Isoononin	5318619	138.82	GG			v	
496	Isoschaftoside	3084995	564.49	GG			v	
497	24-Hydroxyglycyrrhetic acid	19814101	486.68	GG			v	
498	(Z)-1-(2,4-dihydroxyphenyl)-3-phenylprop-2-en-1-one	10331849	240.25	GG			v	
499	3,3-Dimethylpentane	11229	100.2	GG			v	
500	3,4,3',4'-Tetrahydroxy-2-methoxychalcone	6478421	302.28	GG			v	
501	2-Ethyl-p-xylene	15653	134.22	GG			v	
502	3-methylheptane	11519	114.23	GG			v	
503	3-methylhexane	11507	100.2	GG			v	
504	3-Methylpentane	7282	86.18	GG			v	
505	3-Ethylpentane	12048	100.2	GG			v	
506	Daidzein dimethyl ether	136419	282.29	GG			v	
507	4,2',4',alpha-Tetrahydroxydihydrochalcone	14632193	274.27	GG			v	
508	2,6,10-trimethyl-dodecane	19773	212.41	GG			v	
509	Licoriisoflavan A	196831	438.56	GG			v	
510	icos-5-enoic acid	3349565	310.51	GG			v	
511	6″-O-acetylliquiritin	101051311	460.43	GG			v	
512	Kanzonol F	101666840	420.5	GG			v	
513	7,2',4'-trihydroxy − 5-methoxy-3 − arylcoumarin	25015742	300.26	GG			v	
514	7-Acetoxy-2-methylisoflavone	268208	294.3	GG		v	v	
515	Kanzonol H	480863	424.53	GG			v	
516	gadelaidic acid	5460988	310.51	GG			v	
517	Artonin E	5481962	436.45	GG			v	
518	Vestitol	92503	272.3	GG			v	
519	Glycyrrhiza flavonol A	5317765	370.35	GG			v	
520	Kanzonol E	15516846	388.46	GG			v	
521	Licoagroisoflavone	636883	336.34	GG			v	
522	18alpha-Hydroxyglycyrrhetic acid	14189465	486.68	GG			v	
523	Licorice glycoside A	101938903	726.68	GG			v	
524	Mipax	8554	194.18	GG			v	
525	ursolic acid	64945	456.7	GG			v	

526	DIBP	6782	278.34	GG			v	
527	PENTYLFURAN	19602	138.21	GG			v	
528	2-heptanone	8051	114.19	GG			v	
529	quercetin	5280343	302.24	GG			v	

Table S2.1 Targets Obtained from STP (n = 1507)

No	Target STP
1	MAOA
2	APP
3	EP300
4	PTGES
5	TLR9
6	BACE1
7	TOP2A
8	GLO1
9	NFE2L2
10	ALOX5
11	PTGS1
12	IKBKG
13	EGFR
14	HSD17B3
15	STAT3
16	HSD11B1
17	AKT1
18	GSK3B
19	CA7
20	CA6
21	CA12
22	CA14
23	CA9
24	CA5A
25	ABCC1
26	CHEK1
27	PDK1
28	WEE1
29	TOP1
30	RAF1
31	BRAF
32	CA2
33	CA1
34	GCGR
35	MMP14
36	AURKB
37	SERPINE1

Table S2.2 Targets Obtained from SEA (n = 1258)

No	Target SEA
1	A4
2	ABCG2
3	ACES
4	ACPM
5	AGAL
6	AHR
7	AK1BA
8	AK1C4
9	AK1C3
10	ALDR
11	ALR
12	AMPN
13	AOFA
14	AOFB
15	BACE1
16	CAH13
17	CAH14
18	CAH12
19	CAH3
20	CAH1
21	CAH2
22	CAH4
23	CAH5A
24	CAH5B
25	CAH6
26	CAH7
27	CAH9
28	CCND3
29	CH10
30	CH60
31	CHK1
32	CHLE
33	CIA30
34	CISD1
35	CP1A1
36	CP19A
37	CP1A2

Table S2.3 Merged Targets from STP & SEA (n = 2335)

No	Merged Target from STP & SEA
1	MAOA
2	APP
3	EP300
4	PTGES
5	TLR9
6	BACE1
7	TOP2A
8	GLO1
9	NFE2L2
10	ALOX5
11	PTGS1
12	IKBKG
13	EGFR
14	HSD17B3
15	STAT3
16	HSD11B1
17	AKT1
18	GSK3B
19	CA7
20	CA6
21	CA12
22	CA14
23	CA9
24	CA5A
25	ABCC1
26	CHEK1
27	PDK1
28	WEE1
29	TOP1
30	RAF1
31	BRAF
32	CA2
33	CA1
34	GCGR
35	MMP14
36	AURKB
37	SERPINE1

38	RPS6KB1
39	AURKA
40	CDK2
41	TYR
42	AGTR1
43	NOX4
44	BMP1
45	MMP13
46	ADAM17
47	CELA1
48	PREP
49	GRIK1
50	MMP8
51	CXCR2
52	ALPL
53	MELK
54	IMPDH1
55	IMPDH2
56	CFD
57	SPHK2
58	SPHK1
59	MAP3K12
60	BCL2
61	THRA
62	THRB
63	CSF1R
64	ALOX5AP
65	NCOR2
66	SGK1
67	DPP4
68	DPP7
69	HSP90AB1
70	ADAM10
71	MMP3
72	CDK5R1
73	KCNH2
74	HPGD
75	JAK1
76	JAK2

38	CP1B1
39	CP24A
40	CP26B
41	CP2CJ
42	DCOR
43	DHB1
44	DHB2
45	DHB3
46	DHCR7
47	DHI1
48	DHPR
49	DUS3
50	DYN1
51	EBP
52	EGFR
53	EP300
54	ERN1
55	ERR1
56	FOLH1
57	FOS
58	FUT7
59	G6PT1
60	GLR
61	GP183
62	GPR35
63	GSK3B
64	HDA11
65	HDAC2
66	HDAC1
67	HDAC4
68	HDAC6
69	HDAC8
70	HPSE
71	IMDH1
72	IMDH2
73	JUN
74	KCC2A
75	KCMA1
76	KCNA3

38	RPS6KB1
39	AURKA
40	CDK2
41	TYR
42	AGTR1
43	NOX4
44	BMP1
45	MMP13
46	ADAM17
47	CELA1
48	PREP
49	GRIK1
50	MMP8
51	CXCR2
52	ALPL
53	MELK
54	IMPDH1
55	IMPDH2
56	CFD
57	SPHK2
58	SPHK1
59	MAP3K12
60	BCL2
61	THRA
62	THRB
63	CSF1R
64	ALOX5AP
65	NCOR2
66	SGK1
67	DPP4
68	DPP7
69	HSP90AB1
70	ADAM10
71	MMP3
72	CDK5R1
73	KCNH2
74	HPGD
75	JAK1
76	JAK2

77	HDAC10
78	MMP16
79	MMP12
80	YWHAG
81	LIPC
82	LIPG
83	WDR5
84	HTR1A
85	MMP9
86	ANPEP
87	QPCT
88	CA13
89	CA5B
90	MMP7
91	GRIK2
92	ST3GAL3
93	FUT7
94	FUT4
95	F3
96	GRM2
97	P2RY12
98	PSEN2
99	PTGS2
100	TNF
101	MTOR
102	EPHA2
103	YES1
104	BLK
105	CSK
106	EPHB2
107	BMX
108	LYN
109	EPHA5
110	EPHA4
111	TXK
112	FGR
113	EPHA6
114	PTK6
115	EPHB3

77	KCNB1
78	KCNK9
79	KLF5
80	KPCE
81	LGUL
82	LOX12
83	LOX15
84	LOX5
85	LT4R1
86	MAP2
87	MCL1
88	MDR1
89	MET
90	MIF
91	MMP1
92	MMP2
93	MMP9
94	MPRI
95	MTR1A
96	MTR1B
97	MYOC
98	NDUA1
99	NDUA2
100	NDUA3
101	NDUA4
102	NDUA6
103	NDUA5
104	NDUA7
105	NDUA8
106	NDUAA
107	NDUA9
108	NDUAB
109	NDUAC
110	NDUAD
111	NDUB1
112	NDUB2
113	NDUB3
114	NDUB4
115	NDUB5

77	HDAC10
78	MMP16
79	MMP12
80	YWHAG
81	LIPC
82	LIPG
83	WDR5
84	HTR1A
85	MMP9
86	ANPEP
87	QPCT
88	CA13
89	CA5B
90	MMP7
91	GRIK2
92	ST3GAL3
93	FUT7
94	FUT4
95	F3
96	GRM2
97	P2RY12
98	PSEN2
99	PTGS2
100	TNF
101	MTOR
102	EPHA2
103	YES1
104	BLK
105	CSK
106	EPHB2
107	BMX
108	LYN
109	EPHA5
110	EPHA4
111	TXK
112	FGR
113	EPHA6
114	PTK6
115	EPHB3

116	EPHA3
117	BTK
118	TYRO3
119	COQ8B
120	EPHA1
121	CHEK2
122	CDK1
123	CTSL
124	CA4
125	HDAC11
126	ROCK1
127	CCNE1
128	PIM1
129	CLK3
130	NOS2
131	MIF
132	HDAC5
133	FCER2
134	GRK2
135	HDAC4
136	HDAC9
137	ALOX15
138	NR3C1
139	POLA1
140	ALOX12
141	PTGFR
142	SHBG
143	IGF1R
144	KDR
145	ALK
146	TTR
147	SRC
148	LYPLA1
149	LYPLA2
150	CYP19A1
151	CNR1
152	CNR2
153	SLC6A4
154	AR

116	NDUB7
117	NDUB6
118	NDUB8
119	NDUB9
120	NDUBA
121	NDUBB
122	NDUC1
123	NDUF2
124	NDUC2
125	NDUF4
126	NDUS1
127	NDUF3
128	NDUS2
129	NDUS5
130	NDUS3
131	NDUS4
132	NDUS7
133	NDUS8
134	NDUS6
135	NDUV1
136	NDUV2
137	NDUV3
138	NEMO
139	NF2L2
140	NFKB1
141	NOD2
142	NOS2
143	NOX1
144	NOX4
145	NQO2
146	NR0B2
147	NR1H4
148	NU1M
149	NU2M
150	NU3M
151	NU4LM
152	NU4M
153	NU5M
154	NU6M

116	EPHA3
117	BTK
118	TYRO3
119	COQ8B
120	EPHA1
121	CHEK2
122	CDK1
123	CTSL
124	CA4
125	HDAC11
126	ROCK1
127	CCNE1
128	PIM1
129	CLK3
130	NOS2
131	MIF
132	HDAC5
133	FCER2
134	GRK2
135	HDAC4
136	HDAC9
137	ALOX15
138	NR3C1
139	POLA1
140	ALOX12
141	PTGFR
142	SHBG
143	IGF1R
144	KDR
145	ALK
146	TTR
147	SRC
148	LYPLA1
149	LYPLA2
150	CYP19A1
151	CNR1
152	CNR2
153	SLC6A4
154	AR

155	CXCR1
156	CYP24A1
157	ADCY10
158	LTB4R
159	ESR1
160	HSD17B1
161	MAP2K1
162	RET
163	TYK2
164	MKNK2
165	EPHB4
166	SLC6A2
167	GYS1
168	ESR2
169	HSP90AA1
170	ESRRA
171	ESRRB
172	GPER1
173	CCND1
174	SYK
175	SLC6A3
176	GPR55
177	GPR18
178	P2RX3
179	MAP3K7
180	HMGCR
181	EIF4A1
182	OPRD1
183	FLT3
184	PLK4
185	CDK5
186	AXL
187	CDK7
188	CDK9
189	DYRK1A
190	CSNK1A1
191	MAPK3
192	MAPK15
193	CAMKK2

155	NUA4L
156	PACR
157	PD2R
158	PDE4C
159	PDE4D
160	PE2R2
161	PE2R4
162	PERM
163	PGH1
164	PGH2
165	PLAP
166	PPBI
167	PTGES
168	PTN11
169	PTN1
170	PTN6
171	PTN7
172	PYGL
173	RARA
174	RARB
175	RARG
176	S22A3
177	SDF1
178	SENP7
179	SENP6
180	SHBG
181	ST17B
182	STAT3
183	SYIC
184	TAOK1
185	TAOK3
186	TAU
187	TBB1
188	TF65
189	TF
190	TLR9
191	TNR1A
192	TOP2A
193	TRPM5

155	CXCR1
156	CYP24A1
157	ADCY10
158	LTB4R
159	ESR1
160	HSD17B1
161	MAP2K1
162	RET
163	TYK2
164	MKNK2
165	EPHB4
166	SLC6A2
167	GYS1
168	ESR2
169	HSP90AA1
170	ESRRA
171	ESRRB
172	GPER1
173	CCND1
174	SYK
175	SLC6A3
176	GPR55
177	GPR18
178	P2RX3
179	MAP3K7
180	HMGCR
181	EIF4A1
182	OPRD1
183	FLT3
184	PLK4
185	CDK5
186	AXL
187	CDK7
188	CDK9
189	DYRK1A
190	CSNK1A1
191	MAPK3
192	MAPK15
193	CAMKK2

194	INSRR
195	ABL1
196	PIK3CD
197	PRKDC
198	PIK3CB
199	HCK
200	PIK3CG
201	PI4KB
202	PIK3CA
203	JAK3
204	ADORA2A
205	P2RX7
206	NTRK1
207	MERTK
208	CCNB3
209	RPS6KA3
210	PIM2
211	PIM3
212	CHRM1
213	PLCG1
214	EEF2K
215	HSD17B2
216	MET
217	DNM1
218	PDGFRB
219	GLI2
220	GLI1
221	MCL1
222	ROCK2
223	PLK1
224	AKR1B1
225	STAT6
226	PRKCZ
227	DUT
228	IGFBP3
229	EPHX2
230	ATIC
231	FOLH1
232	PYGL

194	TRPM8
195	TRPV1
196	TS1R1
197	TTHY
198	XBP1
199	IF4H
200	S13A5
201	TDT
202	CBS
203	ERR2
204	ERR3
205	ESR2
206	ESR1
207	HDA10
208	HDAC5
209	HDAC9
210	HIF1A
211	MYG
212	PDIA1
213	SYYC
214	1433G
215	ADRB1
216	ADRB2
217	ADRB3
218	CALM1
219	DRD1
220	EBPL
221	LYPA1
222	LYPA2
223	MMP12
224	TYRO
225	AMD
226	CTBP2
227	G6PC
228	GABT
229	HDAC3
230	HDAC7
231	MPIP2
232	NALD2

194	INSRR
195	ABL1
196	PIK3CD
197	PRKDC
198	PIK3CB
199	HCK
200	PIK3CG
201	PI4KB
202	PIK3CA
203	JAK3
204	ADORA2A
205	P2RX7
206	NTRK1
207	MERTK
208	CCNB3
209	RPS6KA3
210	PIM2
211	PIM3
212	CHRM1
213	PLCG1
214	EEF2K
215	HSD17B2
216	MET
217	DNM1
218	PDGFRB
219	GLI2
220	GLI1
221	MCL1
222	ROCK2
223	PLK1
224	AKR1B1
225	STAT6
226	PRKCZ
227	DUT
228	IGFBP3
229	EPHX2
230	ATIC
231	FOLH1
232	PYGL

233	SLC28A3
234	ITGB1
235	SLC5A4
236	ADORA3
237	SLC5A2
238	SLC5A1
239	GART
240	HRAS
241	BCL2A1
242	PNP
243	IGFBP5
244	TDP1
245	ACE
246	AMPD3
247	ENPEP
248	TYMS
249	CDC25B
250	CASP3
251	EIF4H
252	PABPC1
253	KDM4C
254	HCAR2
255	SELE
256	SELP
257	VCP
258	FYN
259	IL2
260	DHODH
261	ADK
262	CASP6
263	CASP7
264	CASP8
265	ECE1
266	CASP1
267	CASP2
268	TYMP
269	PFKFB3
270	MME
271	RNASEH1

233	NMUR2
234	PLCG1
235	RIR1
236	SSDH
237	STAT1
238	TRPM2
239	AK1C1
240	AK1C2
241	BRAF
242	CTDS1
243	ERCC1
244	ERCC5
245	EST2
246	FABP4
247	FADS1
248	GRM6
249	GRM8
250	HCAR3
251	HNF4A
252	IBP3
253	IBP5
254	KDM3A
255	KDM4D
256	KLK5
257	LPAR1
258	LPAR5
259	MDHC
260	MDHM
261	MEP1B
262	MMP15
263	MMP26
264	MRP1
265	NNMT
266	PA24B
267	PAR10
268	PASK
269	PPBN
270	RAF1
271	RET

233	SLC28A3
234	ITGB1
235	SLC5A4
236	ADORA3
237	SLC5A2
238	SLC5A1
239	GART
240	HRAS
241	BCL2A1
242	PNP
243	IGFBP5
244	TDP1
245	ACE
246	AMPD3
247	ENPEP
248	TYMS
249	CDC25B
250	CASP3
251	EIF4H
252	PABPC1
253	KDM4C
254	HCAR2
255	SELE
256	SELP
257	VCP
258	FYN
259	IL2
260	DHODH
261	ADK
262	CASP6
263	CASP7
264	CASP8
265	ECE1
266	CASP1
267	CASP2
268	TYMP
269	PFKFB3
270	MME
271	RNASEH1

272	LTA4H
273	KDM3A
274	KDM5B
275	KDM4D
276	MAP3K9
277	FGFR1
278	NR4A1
279	FUCA1
280	QARS
281	FDFT1
282	SELL
283	LGALS3
284	LGALS9
285	LGALS4
286	MAP4K4
287	PGD
288	PTPsigma
289	MAP2K2
290	MMP2
291	SAE1
292	MMP1
293	HDAC2
294	CCR5
295	PARP1
296	ERBB2
297	LCK
298	GAA
299	F2
300	HDAC7
301	HDAC3
302	HTR3A
303	INSR
304	MAPK1
305	CCR1
306	TUBB1
307	FLT4
308	PDGFRA
309	MAPK8
310	HDAC1

272	ROCK1
273	ROCK2
274	SAE1
275	SAE2
276	SC6A5
277	SIR5
278	SMO
279	T2R14
280	TPMT
281	TS1R2
282	TS1R3
283	TSSK2
284	XPF
285	CAN1
286	KDM4E
287	PPBT
288	SYUA
289	XDH
290	ACHA7
291	KDM1A
292	NSD2
293	PSDE
294	Q9UM81
295	RHOA
296	CBR1
297	FFAR1
298	HCAR2
299	KCNK2
300	S28A3
301	UPAR
302	T2R31
303	GRIK3
304	CELA1
305	PDK3
306	PDK4
307	FFAR4
308	PCNA
309	NQO1
310	3MG

272	LTA4H
273	KDM3A
274	KDM5B
275	KDM4D
276	MAP3K9
277	FGFR1
278	NR4A1
279	FUCA1
280	QARS
281	FDFT1
282	SELL
283	LGALS3
284	LGALS9
285	LGALS4
286	MAP4K4
287	PGD
288	PTPsigma
289	MAP2K2
290	MMP2
291	SAE1
292	MMP1
293	HDAC2
294	CCR5
295	PARP1
296	ERBB2
297	LCK
298	GAA
299	F2
300	HDAC7
301	HDAC3
302	HTR3A
303	INSR
304	MAPK1
305	CCR1
306	TUBB1
307	FLT4
308	PDGFRA
309	MAPK8
310	HDAC1

311	CMA1
312	HDAC6
313	DRD1
314	DRD3
315	HDAC8
316	NR1H4
317	ERN1
318	ADORA1
319	PARP2
320	ADAM33
321	KDM1A
322	TNKS2
323	TNKS
324	PDE5A
325	SLC9A1
326	TERT
327	ALDH2
328	NEK1
329	CDK4
330	PDF
331	CHRNA7
332	OPRK1
333	PITRM1
334	HTR7
335	EHMT2
336	DYRK1B
337	MAOB
338	CLK1
339	DYRK2
340	MAPKAPK2
341	CSNK1G1
342	RPS6KA1
343	GUSB
344	PDE10A
345	SLC29A1
346	CAMK2A
347	CCNE2
348	AKR1B10
349	TAS2R31

311	APEX1
312	ATG4B
313	BGLR
314	CBP
315	CHK2
316	CO9
317	CP26A
318	CPT1A
319	CPT1B
320	CPT2
321	CSK21
322	CSK22
323	DEFM
324	DPOLB
325	EGLN1
326	EST1
327	FA12
328	FACE2
329	FTO
330	GLRA3
331	HIF1N
332	IBP1
333	IBP2
334	IBP4
335	IBP6
336	KDM2A
337	KDM2B
338	KDM4A
339	KDM4C
340	KDM4B
341	KDM5A
342	KDM5B
343	KDM5C
344	KDM6B
345	KLK7
346	KMO
347	KS6B2
348	LRRK2
349	LYAM1

311	CMA1
312	HDAC6
313	DRD1
314	DRD3
315	HDAC8
316	NR1H4
317	ERN1
318	ADORA1
319	PARP2
320	ADAM33
321	KDM1A
322	TNKS2
323	TNKS
324	PDE5A
325	SLC9A1
326	TERT
327	ALDH2
328	NEK1
329	CDK4
330	PDF
331	CHRNA7
332	OPRK1
333	PITRM1
334	HTR7
335	EHMT2
336	DYRK1B
337	MAOB
338	CLK1
339	DYRK2
340	MAPKAPK2
341	CSNK1G1
342	RPS6KA1
343	GUSB
344	PDE10A
345	SLC29A1
346	CAMK2A
347	CCNE2
348	AKR1B10
349	TAS2R31

350	TRPM8
351	MMP15
352	PLA2G2A
353	MMP26
354	OPRM1
355	TGM2
356	DPP8
357	TLR4
358	MYLK
359	MARK1
360	DUSP3
361	ABCG2
362	CAPN1
363	CYP1A1
364	KIF11
365	DRD5
366	ADRA1B
367	PRKCE
368	CDC25A
369	GABRB3
370	GABRA2
371	TBXA2R
372	ADRB2
373	FAAH
374	MGLL
375	ABHD6
376	CTSK
377	FNTA
378	TAAR1
379	RPS6KA5
380	GCKR
381	RXRA
382	TKT
383	TRPV1
384	NPY5R
385	PDE7A
386	CA3
387	DRD2
388	PTPN1

350	LYAM2
351	MAX
352	MITF
353	MMP16
354	MOT4
355	NEUR3
356	NR4A1
357	NR4A2
358	P4HA1
359	P3C2G
360	P4HTM
361	PA24A
362	PA2GD
363	PAR15
364	PDE4B
365	PE2R1
366	PGFRA
367	POLH
368	POLI
369	PRKX
370	PTN12
371	RBBP9
372	RNH1
373	RXRA
374	RXRB
375	RXRG
376	S22A6
377	S22A8
378	S29A1
379	S5A1
380	S5A2
381	SC5A7
382	SPTC2
383	SRPK1
384	STS
385	TAAR1
386	THA
387	THB
388	TLR1

350	TRPM8
351	MMP15
352	PLA2G2A
353	MMP26
354	OPRM1
355	TGM2
356	DPP8
357	TLR4
358	MYLK
359	MARK1
360	DUSP3
361	ABCG2
362	CAPN1
363	CYP1A1
364	KIF11
365	DRD5
366	ADRA1B
367	PRKCE
368	CDC25A
369	GABRB3
370	GABRA2
371	TBXA2R
372	ADRB2
373	FAAH
374	MGLL
375	ABHD6
376	CTSK
377	FNTA
378	TAAR1
379	RPS6KA5
380	GCKR
381	RXRA
382	TKT
383	TRPV1
384	NPY5R
385	PDE7A
386	CA3
387	DRD2
388	PTPN1

389	PRKACA
390	MTNR1A
391	MTNR1B
392	HTR2B
393	DCTPP1
394	QDPR
395	PRMT1
396	TPMT
397	KDM4E
398	KDM4A
399	KDM6B
400	FTO
401	FBP1
402	AKR1C3
403	KDM2A
404	SQLE
405	POLB
406	NGFR
407	KMO
408	PTPRB
409	LDHA
410	LDHB
411	LAP3
412	GPR17
413	IDO1
414	CTBP2
415	SRD5A2
416	PLA2G4B
417	ELANE
418	LIG1
419	ACHE
420	SLC13A5
421	OGA
422	COMT
423	BCL2L1
424	CPA1
425	ALB
426	DTYMK
427	PIN1

389	XCT
390	GBB1
391	GBG2
392	HS71A
393	PE2R3
394	CP2A6
395	CXCR3
396	TYDP1
397	ACHB
398	ACHD
399	ACHG
400	DHC24
401	ERG1
402	FNTA
403	FNTB
404	GGPPS
405	LSS
406	ADH1B
407	ADH1G
408	ADH1A
409	ADH7
410	AMPL
411	BGAL
412	FAAH1
413	FABPH
414	FPPS
415	GBA2
416	GLCM
417	GNAI1
418	GNAI3
419	GNAO
420	HYEP
421	LPAR2
422	LPAR3
423	NAAA
424	PA21B
425	PA2G5
426	PA2GA
427	RAD52

389	PRKACA
390	MTNR1A
391	MTNR1B
392	HTR2B
393	DCTPP1
394	QDPR
395	PRMT1
396	TPMT
397	KDM4E
398	KDM4A
399	KDM6B
400	FTO
401	FBP1
402	AKR1C3
403	KDM2A
404	SQLE
405	POLB
406	NGFR
407	KMO
408	PTPRB
409	LDHA
410	LDHB
411	LAP3
412	GPR17
413	IDO1
414	CTBP2
415	SRD5A2
416	PLA2G4B
417	ELANE
418	LIG1
419	ACHE
420	SLC13A5
421	OGA
422	COMT
423	BCL2L1
424	CPA1
425	ALB
426	DTYMK
427	PIN1

428	RXRB
429	RXRG
430	APEX1
431	CDA
432	ADA
433	NAALAD2
434	FABP4
435	FABP3
436	FABP5
437	GGH
438	TBXAS1
439	ST14
440	PLAU
441	DBF4
442	SLC16A1
443	CYP1A2
444	NQO2
445	CYP1B1
446	RELA
447	TUBB3
448	ABCB1
449	REN
450	AHR
451	CTNNB1
452	ITGAL
453	PTGDR2
454	AKR1C4
455	ACLY
456	DAO
457	PTPN2
458	PYGM
459	EDNRA
460	MAPT
461	PTPRC
462	NAT1
463	ALPG
464	PLAA
465	MB
466	PTPN22

428	S1PR2
429	S1PR4
430	S22A1
431	S22A2
432	SPHK1
433	TLR2
434	ACER2
435	AMPE
436	BHMT1
437	BODG
438	CERT
439	CP4F2
440	DGLA
441	DPOLL
442	DPOLM
443	ENPP2
444	GABR1
445	GABR2
446	GBRR1
447	GBRT
448	GP174
449	GPR18
450	GPR34
451	GPR84
452	GSHR
453	GSTA1
454	GSTM1
455	GSTK1
456	HAOX1
457	HMDH
458	HYES
459	KDM7A
460	KPCA
461	LPAR4
462	LPAR6
463	LYAM3
464	MCAT
465	MPEG1
466	MPIP1

428	RXRB
429	RXRG
430	APEX1
431	CDA
432	ADA
433	NAALAD2
434	FABP4
435	FABP3
436	FABP5
437	GGH
438	TBXAS1
439	ST14
440	PLAU
441	DBF4
442	SLC16A1
443	CYP1A2
444	NQO2
445	CYP1B1
446	RELA
447	TUBB3
448	ABCB1
449	REN
450	AHR
451	CTNNB1
452	ITGAL
453	PTGDR2
454	AKR1C4
455	ACLY
456	DAO
457	PTPN2
458	PYGM
459	EDNRA
460	MAPT
461	PTPRC
462	NAT1
463	ALPG
464	PLAA
465	MB
466	PTPN22

467	KCNMA1
468	DUSP1
469	CISD1
470	VCAM1
471	MPO
472	MKNK1
473	ASF1A
474	GRM5
475	ADCY5
476	AOC3
477	MAPK9
478	HMOX1
479	PRKD1
480	PRKD2
481	BCHE
482	METAP1
483	LRRK2
484	KDM5C
485	KDM4B
486	ALDH1A1
487	CES1
488	CTSV
489	DAPK3
490	FADS1
491	PLEC
492	CSNK1D
493	ALDH5A1
494	ABAT
495	LNPEP
496	MPI
497	GSK3A
498	GRM4
499	PPARA
500	CHRM2
501	CYP2C19
502	NR1I3
503	SLC5A7
504	NR1H3
505	RORC

467	MPIP3
468	NOD1
469	NSMA
470	OXER1
471	P2Y10
472	PA2GC
473	PA2GX
474	PAOX
475	PF2R
476	PHF8
477	PI2R
478	POLK
479	PPAC
480	PPARA
481	PPARD
482	PPARG
483	S1PR1
484	S1PR3
485	S1PR5
486	S6A11
487	SO2A1
488	TA2R
489	THAS
490	CNR2
491	CNR1
492	MGLL
493	PA1B2
494	PDCD4
495	SPTC1
496	TOP1
497	KAT5
498	DPOLA
499	KAT2B
500	LY96
501	PTN13
502	TLR4
503	GBRB1
504	KCNN2
505	KCNN3

467	KCNMA1
468	DUSP1
469	CISD1
470	VCAM1
471	MPO
472	MKNK1
473	ASF1A
474	GRM5
475	ADCY5
476	AOC3
477	MAPK9
478	HMOX1
479	PRKD1
480	PRKD2
481	BCHE
482	METAP1
483	LRRK2
484	KDM5C
485	KDM4B
486	ALDH1A1
487	CES1
488	CTSV
489	DAPK3
490	FADS1
491	PLEC
492	CSNK1D
493	ALDH5A1
494	ABAT
495	LNPEP
496	MPI
497	GSK3A
498	GRM4
499	PPARA
500	CHRM2
501	CYP2C19
502	NR1I3
503	SLC5A7
504	NR1H3
505	RORC

506	SREBF2
507	NPC1L1
508	CTSD
509	CYP17A1
510	CYP51A1
511	SRD5A1
512	NR3C2
513	PGR
514	SERPINA6
515	SIGMAR1
516	NR1I2
517	FABP1
518	RBP4
519	PTPN6
520	UGT2B7
521	PPARG
522	PPARD
523	LSS
524	SCD
525	CES2
526	TRPA1
527	RORA
528	PDE4D
529	PTPRF
530	PLA2G1B
531	ACP1
532	G6PD
533	PTGER2
534	PTGER1
535	FFAR1
536	CD81
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538	HSD11B2
539	PTPN11
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542	RARG
543	RARB
544	RARA

506	PPGB
507	SCN4A
508	UBP1
509	WDR48
510	DDX3X
511	RPGF4
512	ACHA
513	CRYAB
514	MSRE
515	GRIA4
516	NLRP1
517	DRD5
518	HCN4
519	SPRE
520	TAAR5
521	TY3H
522	GLI1
523	GLI2
524	ALBU
525	KS6A5
526	UD2B7
527	ABCBB
528	ANDR
529	CBG
530	CD4
531	CDC45
532	CP17A
533	CP27B
534	EPHA1
535	EPHA2
536	EPHA3
537	EPHA4
538	EPHA5
539	EPHA6
540	EPHA7
541	EPHA8
542	EPHB1
543	EPHB2
544	EPHB3

506	SREBF2
507	NPC1L1
508	CTSD
509	CYP17A1
510	CYP51A1
511	SRD5A1
512	NR3C2
513	PGR
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515	SIGMAR1
516	NR1I2
517	FABP1
518	RBP4
519	PTPN6
520	UGT2B7
521	PPARG
522	PPARD
523	LSS
524	SCD
525	CES2
526	TRPA1
527	RORA
528	PDE4D
529	PTPRF
530	PLA2G1B
531	ACP1
532	G6PD
533	PTGER2
534	PTGER1
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541	ADRA2B
542	RARG
543	RARB
544	RARA

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548	SHH
549	VDR
550	GBA
551	HIF1A
552	GPBAR1
553	NLRP3
554	SIRT2
555	PPM1B
556	PPP1CC
557	CHRM4
558	CHRM5
559	CHRM3
560	PRKCA
561	ADRA2A
562	ADRA2C
563	ADRA1D
564	ADRA1A
565	PAM
566	PRKCQ
567	PRKCG
568	CPT1A
569	CTSB
570	EPHX1
571	PRSS1
572	CYP11B1
573	CYP11B2
574	LIPE
575	CTRB1
576	KCNK2
577	CTRC
578	CYP2A6
579	PLA2G6
580	TGFBR1
581	CTSH
582	NOS1
583	NOS3

545	EPHB6
546	FGF2
547	G6PD
548	GPBAR
549	MRP4
550	NPC1
551	NPCL1
552	NR1H2
553	NR1H3
554	NTCP2
555	NTCP
556	RORA
557	RORG
558	SHH
559	SIA4A
560	SRBP2
561	THRB
562	VDR
563	VTDB
564	IL2
565	AT12A
566	AT1A1
567	GBRB2
568	GBRD
569	NOTC1
570	PAX8
571	SO4C1
572	ACH10
573	ACHA9
574	AOC3
575	C11B1
576	CP27A
577	PHLP2
578	CEGT
579	FGF1
580	KCNN4
581	KIF11
582	VEGFA
583	ABC3A

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548	SHH
549	VDR
550	GBA
551	HIF1A
552	GPBAR1
553	NLRP3
554	SIRT2
555	PPM1B
556	PPP1CC
557	CHRM4
558	CHRM5
559	CHRM3
560	PRKCA
561	ADRA2A
562	ADRA2C
563	ADRA1D
564	ADRA1A
565	PAM
566	PRKCQ
567	PRKCG
568	CPT1A
569	CTSB
570	EPHX1
571	PRSS1
572	CYP11B1
573	CYP11B2
574	LIPE
575	CTRB1
576	KCNK2
577	CTRC
578	CYP2A6
579	PLA2G6
580	TGFBR1
581	CTSH
582	NOS1
583	NOS3

584	CHRNA4
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586	TACR2
587	HTR2C
588	TTL
589	IDH1
590	KCNN1
591	KCNN3
592	KCNN2
593	TLR8
594	CHRNA3
595	HTT
596	XPO1
597	CTSC
598	CTSS
599	CEL
600	PSMB1
601	GABBR1
602	TRPV3
603	PTAFR
604	BRD4
605	BRD2
606	BRD3
607	FABP2
608	UTS2R
609	EIF2AK1
610	LIPA
611	ICMT
612	PRMT3
613	ADORA2B
614	SCN5A
615	ACPP
616	SCN9A
617	KCNA5
618	STK3
619	STK26
620	TTK
621	SLC18A3
622	SLC22A6

584	CBPA1
585	CBPA3
586	FUCO
587	NISCH
588	OXDA
589	S15A1
590	SGMR1
591	VMAT2
592	BT3A1
593	FDFT
594	ICMT
595	MMEL1
596	AA3R
597	ABC3G
598	ACRO
599	ANM6
600	APAF
601	BRPF1
602	CAC1D
603	CARM1
604	CASP3
605	CASR
606	CATG
607	CMA1
608	CP2D6
609	CP2C9
610	CP3A4
611	CTRB1
612	DOPO
613	ELNE
614	ERAP2
615	F263
616	F264
617	FABPI
618	FABPL
619	FEN1
620	GBRA3
621	GBRA5
622	GP139

584	CHRNA4
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586	TACR2
587	HTR2C
588	TTL
589	IDH1
590	KCNN1
591	KCNN3
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594	CHRNA3
595	HTT
596	XPO1
597	CTSC
598	CTSS
599	CEL
600	PSMB1
601	GABBR1
602	TRPV3
603	PTAFR
604	BRD4
605	BRD2
606	BRD3
607	FABP2
608	UTS2R
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612	PRMT3
613	ADORA2B
614	SCN5A
615	ACPP
616	SCN9A
617	KCNA5
618	STK3
619	STK26
620	TTK
621	SLC18A3
622	SLC22A6

623	KCNE1
624	ABCC9
625	TNNC1
626	CLK4
627	PLA2G4C
628	KMT5A
629	PTGER4
630	PTGDR
631	PTK2B
632	HRH3
633	HRH4
634	MDM2
635	PTGIR
636	PTK2
637	ATP12A
638	DHCR7
639	PRKCD
640	CYP2C9
641	METAP2
642	GPR84
643	PSMB5
644	TDO2
645	VEGFA
646	EGLN1
647	CBR1
648	TLR7
649	CYP3A4
650	EPAS1
651	KAT2B
652	NISCH
653	PDPK1
654	PRKCB
655	CDC7
656	NPR1
657	CXCR3
658	NR5A2
659	SLC18A2
660	TACR1
661	NR5A1

623	GPR55
624	GRK6
625	HGFA
626	HKDC1
627	HPGDS
628	HS90A
629	KAT2A
630	KCNK3
631	LCAP
632	LEG1
633	LEG9
634	LOXL2
635	LRP6
636	MK08
637	MK10
638	NCEH1
639	NCOA3
640	NLRP3
641	PABP1
642	PAR14
643	PDK2
644	PHOP1
645	PPAP
646	PPME1
647	PRIO
648	PRTN3
649	PTPRB
650	PTPRC
651	PUR9
652	PYRD
653	SC6A3
654	SCN2A
655	SDHB
656	SENP1
657	SENP8
658	SERA
659	SMAD3
660	TGFR2
661	TMIG3

623	KCNE1
624	ABCC9
625	TNNC1
626	CLK4
627	PLA2G4C
628	KMT5A
629	PTGER4
630	PTGDR
631	PTK2B
632	HRH3
633	HRH4
634	MDM2
635	PTGIR
636	PTK2
637	ATP12A
638	DHCR7
639	PRKCD
640	CYP2C9
641	METAP2
642	GPR84
643	PSMB5
644	TDO2
645	VEGFA
646	EGLN1
647	CBR1
648	TLR7
649	CYP3A4
650	EPAS1
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652	NISCH
653	PDPK1
654	PRKCB
655	CDC7
656	NPR1
657	CXCR3
658	NR5A2
659	SLC18A2
660	TACR1
661	NR5A1

662	SLC6A9
663	CHAT
664	AVPR1A
665	OXTR
666	PHOSPHO1
667	CRHR1
668	SOAT1
669	NPSR1
670	TSPO
671	KCNA3
672	NPY1R
673	CFTR
674	HTR2A
675	CCR4
676	HTR6
677	PRMT5
678	PPP1CA
679	CCR3
680	C3AR1
681	C5AR1
682	MAP3K11
683	PER2
684	IL6ST
685	GRM1
686	CAMK2D
687	RASGRP1
688	STS
689	F2R
690	CASR
691	HCRTR2
692	HCRTR1
693	GLRA1
694	SMO
695	BACE2
696	INCENP
697	DGAT1
698	KIT
699	PDE4A
700	PDE4B

662	TRPA1
663	TRY1
664	UBC9
665	UROK
666	VGFR3
667	KAT8
668	MBD2
669	QCR7
670	UBP4
671	UBP5
672	PPIB
673	PPIG
674	HEM3
675	MPI
676	RGS4
677	RGS8
678	ARBK2
679	CLAT
680	ERBB3
681	GALR1
682	KI20A
683	NR1I3
684	SPHK2
685	TOP2B
686	ASF1A
687	COT2
688	DNMT1
689	ENPP1
690	ERO1A
691	GAK
692	ITA3
693	MCLN3
694	NAMPT
695	OX2R
696	PDE4A
697	PTAFR
698	PTN22
699	PTN5
700	PTN2

662	SLC6A9
663	CHAT
664	AVPR1A
665	OXTR
666	PHOSPHO1
667	CRHR1
668	SOAT1
669	NPSR1
670	TSPO
671	KCNA3
672	NPY1R
673	CFTR
674	HTR2A
675	CCR4
676	HTR6
677	PRMT5
678	PPP1CA
679	CCR3
680	C3AR1
681	C5AR1
682	MAP3K11
683	PER2
684	IL6ST
685	GRM1
686	CAMK2D
687	RASGRP1
688	STS
689	F2R
690	CASR
691	HCRTR2
692	HCRTR1
693	GLRA1
694	SMO
695	BACE2
696	INCENP
697	DGAT1
698	KIT
699	PDE4A
700	PDE4B

701	PDE4C
702	MDM4
703	AVPR2
704	S1PR3
705	S1PR1
706	CCKBR
707	PLA2G7
708	CDK6
709	NPY2R
710	CACNA1B
711	PDE2A
712	DHFR
713	PGGT1B
714	SLC10A2
715	PRCP
716	MAP3K14
717	S1PR2
718	BRS3
719	ACACB
720	MC4R
721	GLUL
722	ADH1A
723	ADH1C
724	ADH1B
725	DRD4
726	ADH4
727	DNMT3A
728	PARP10
729	GABRG2
730	BRD9
731	NQO1
732	TPO
733	CTSF
734	PHF8
735	HAO1
736	GSTK1
737	NR0B2
738	CDC45
739	CYP26A1

701	XPO1
702	IDE
703	ARY1
704	DPYD
705	IF4A3
706	BAZ2B
707	BPTF
708	BRD7
709	SMCA4
710	APH1A
711	APH1B
712	DAPK2
713	DYR1A
714	DYR1B
715	NICA
716	PEN2
717	PSN1
718	PSN2
719	S12A2
720	CYC
721	DNLI1
722	KKCC2
723	OXDD
724	PAR16
725	PLEC
726	RFA1
727	ADA
728	ADK
729	AMYP
730	BIP
731	CD69
732	CDD
733	CXB2
734	ERAP1
735	GANC
736	GDE
737	HEXA
738	HEXB
739	HXK1

701	PDE4C
702	MDM4
703	AVPR2
704	S1PR3
705	S1PR1
706	CCKBR
707	PLA2G7
708	CDK6
709	NPY2R
710	CACNA1B
711	PDE2A
712	DHFR
713	PGGT1B
714	SLC10A2
715	PRCP
716	MAP3K14
717	S1PR2
718	BRS3
719	ACACB
720	MC4R
721	GLUL
722	ADH1A
723	ADH1C
724	ADH1B
725	DRD4
726	ADH4
727	DNMT3A
728	PARP10
729	GABRG2
730	BRD9
731	NQO1
732	TPO
733	CTSF
734	PHF8
735	HAO1
736	GSTK1
737	NR0B2
738	CDC45
739	CYP26A1

740	CYP26B1
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742	CACNA2D1
743	PLG
744	HNF4A
745	AKR1C1
746	ENPP2
747	GCG
748	PRKAG1
749	PTGER3
750	PTGES2
751	OXER1
752	PLA2G10
753	CTSG
754	CCKAR
755	PLA2G2C
756	MC1R
757	MC5R
758	SLC6A12
759	PEPD
760	USP1
761	LPAR3
762	LPAR1
763	HPGDS
764	FASN
765	SLC22A12
766	IL6
767	PSEN1
768	CPT1B
769	CPT2
770	GLP1R
771	GIPR
772	PLA2G5
773	RNPEP
774	SOAT2
775	SLC1A2
776	CYSLTR1
777	MMEL1
778	CASP9

740	HXK2
741	IL6
742	LEG3
743	LEG4
744	LEG8
745	MGA
746	OGA
747	PYGB
748	PYGM
749	SC5A1
750	SC5A2
751	SC5A4
752	UMPS
753	ACLY
754	AL1A2
755	AL1A3
756	CGL
757	PURA2
758	S6A12
759	OAT
760	GGH
761	GNPAT
762	AMPB
763	BHMT2
764	EAA2
765	EAA3
766	GFPT1
767	GRIK1
768	GRIK2
769	GRIK5
770	GSH1
771	GBRA6
772	HMGB1
773	ARGI1
774	ARGI2
775	CBPN
776	DDAH1
777	EAA1
778	GRIA1

740	CYP26B1
741	FFAR4
742	CACNA2D1
743	PLG
744	HNF4A
745	AKR1C1
746	ENPP2
747	GCG
748	PRKAG1
749	PTGER3
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751	OXER1
752	PLA2G10
753	CTSG
754	CCKAR
755	PLA2G2C
756	MC1R
757	MC5R
758	SLC6A12
759	PEPD
760	USP1
761	LPAR3
762	LPAR1
763	HPGDS
764	FASN
765	SLC22A12
766	IL6
767	PSEN1
768	CPT1B
769	CPT2
770	GLP1R
771	GIPR
772	PLA2G5
773	RNPEP
774	SOAT2
775	SLC1A2
776	CYSLTR1
777	MMEL1
778	CASP9

779	CPB2
780	CYSLTR2
781	PLA2G2D
782	MMP10
783	ITGAV
784	DNTT
785	PORCN
786	DAGLA
787	LDLR
788	MGAT2
789	DGAT2
790	PLAT
791	F10
792	MCHR1
793	HPSE
794	AKR1C2
795	DCK
796	GPR119
797	MAPK10
798	HTR1D
799	GABRA1
800	KCNN4
801	CYP2D6
802	ESRRG
803	HRH1
804	ADRB3
805	HTR1B
806	OPRL1
807	CENPE
808	HRH2
809	HTR1E
810	HTR5A
811	FCGR1A
812	TACR3
813	RGS4
814	GABRA5
815	G6PC
816	FKBP1A
817	UPP1

779	GRIA2
780	GRIA3
781	KYNU
782	LAT1
783	NOS1
784	NOS3
785	OTC
786	PTPRA
787	S15A2
788	CBPB1
789	GSTA2
790	GLO2
791	GRM4
792	GSTP1
793	LKHA4
794	PCSK6
795	CPNS1
796	DNPEP
797	HLAA
798	KISSR
799	PSA
800	SYLC
801	5HT1A
802	5HT1B
803	5HT1D
804	5HT1E
805	5HT2A
806	5HT2B
807	5HT2C
808	5HT4R
809	AAAT
810	AAKB2
811	AAPK1
812	ACE
813	ADA12
814	ADCY5
815	AKT3
816	AKT2
817	AKT1

779	CPB2
780	CYSLTR2
781	PLA2G2D
782	MMP10
783	ITGAV
784	DNTT
785	PORCN
786	DAGLA
787	LDLR
788	MGAT2
789	DGAT2
790	PLAT
791	F10
792	MCHR1
793	HPSE
794	AKR1C2
795	DCK
796	GPR119
797	MAPK10
798	HTR1D
799	GABRA1
800	KCNN4
801	CYP2D6
802	ESRRG
803	HRH1
804	ADRB3
805	HTR1B
806	OPRL1
807	CENPE
808	HRH2
809	HTR1E
810	HTR5A
811	FCGR1A
812	TACR3
813	RGS4
814	GABRA5
815	G6PC
816	FKBP1A
817	UPP1

818	CLK2
819	TMIGD3
820	BCAT2
821	SERPINH1
822	PDE7B
823	CYP27A1
824	CALM1
825	RPS6KA2
826	RCOR1
827	MPEG1
828	XIAP
829	RASGRP3
830	PAOX
831	F2RL3
832	CDC25C
833	RIPK3
834	RIPK2
835	PPP2CA
836	PPP2R5A
837	CAPN2
838	ECE2
839	MAPKAPK5
840	RPS6KA4
841	NAMPT
842	PAK1
843	ITK
844	ATP4B
845	NR1D1
846	FLT1
847	MSR1
848	GPR35
849	SCN2A
850	MAP2
851	MAP3K8
852	SIRT1
853	EZH2
854	CCR9
855	RHOA
856	PPOX

818	BMP1
819	BRS3
820	C3AR
821	C5AR1
822	CASP5
823	CASPA
824	CATB
825	CATC
826	CATL1
827	CBX7
828	CCKAR
829	CFTR
830	DRD3
831	DRD4
832	DRD2
833	DYRK3
834	ECE1
835	EDNRA
836	EDNRB
837	FPR1
838	FPR2
839	GASR
840	GBRA1
841	GBRG2
842	GCR
843	GHSR
844	GRPR
845	GSK3A
846	HEPS
847	KCC2B
848	KCC2D
849	KCC2G
850	KCNA5
851	KGP2
852	KGP1
853	KPCD3
854	KPCD2
855	KPCD
856	KPCG

818	CLK2
819	TMIGD3
820	BCAT2
821	SERPINH1
822	PDE7B
823	CYP27A1
824	CALM1
825	RPS6KA2
826	RCOR1
827	MPEG1
828	XIAP
829	RASGRP3
830	PAOX
831	F2RL3
832	CDC25C
833	RIPK3
834	RIPK2
835	PPP2CA
836	PPP2R5A
837	CAPN2
838	ECE2
839	MAPKAPK5
840	RPS6KA4
841	NAMPT
842	PAK1
843	ITK
844	ATP4B
845	NR1D1
846	FLT1
847	MSR1
848	GPR35
849	SCN2A
850	MAP2
851	MAP3K8
852	SIRT1
853	EZH2
854	CCR9
855	RHOA
856	PPOX

857	GSR
858	SLC6A15
859	NMT1
860	KCNK3
861	GPR139
862	FAP
863	PARP3
864	PARP4
865	HSPA1A
866	MALT1
867	NAAA
868	ASAH1
869	CCR2
870	HLCS
871	ICAM1
872	FKBP5
873	ADH7
874	GCK
875	NOTUM
876	CETP
877	F11
878	PDCD4
879	IARS
880	ATP1A1
881	F2RL1
882	GSTM1
883	CDC42BPA
884	CCNC
885	CDK8
886	PDE3A
887	PDE3B
888	IRAK4
889	ACVRL1
890	LIMK1
891	SORD
892	BIRC2
893	SLC6A5
894	NUDT1
895	MST1R

857	KS6A3
858	MAGI3
859	MC3R
860	MC4R
861	MC5R
862	MCR
863	MMP11
864	MMP14
865	MMP17
866	MMP25
867	MMP7
868	MMP3
869	MMP8
870	MRCKA
871	MSHR
872	NCOR1
873	NCOR2
874	NEP
875	NK1R
876	NK2R
877	NK3R
878	NMBR
879	NMUR1
880	NTR1
881	OPRD
882	OPRM
883	PAK1
884	PHKG2
885	PPIA
886	PSB5
887	PSB8
888	PSB9
889	RAD51
890	RENI
891	RUVB1
892	SGK2
893	SSR1
894	SSR2
895	SSR3

857	GSR
858	SLC6A15
859	NMT1
860	KCNK3
861	GPR139
862	FAP
863	PARP3
864	PARP4
865	HSPA1A
866	MALT1
867	NAAA
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869	CCR2
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874	GCK
875	NOTUM
876	CETP
877	F11
878	PDCD4
879	IARS
880	ATP1A1
881	F2RL1
882	GSTM1
883	CDC42BPA
884	CCNC
885	CDK8
886	PDE3A
887	PDE3B
888	IRAK4
889	ACVRL1
890	LIMK1
891	SORD
892	BIRC2
893	SLC6A5
894	NUDT1
895	MST1R

896	BRPF1
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901	SLC27A4
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903	TP53
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905	FPR2
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907	CCNA2
908	CXCL8
909	GABBR2
910	GPR88
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912	IKBKB
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917	KCNJ1
918	WNT3A
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920	ADAMTS4
921	ERCC5
922	FEN1
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925	PIK3C2G
926	PIP4K2C
927	DAPK1
928	DAPK2
929	CSNK2A1
930	CSNK2A2
931	KLKB1
932	PHLPP2
933	F13A1
934	EGLN3

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898	ST14
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900	TMPS6
901	TPH1
902	TSSK1
903	ACE2
904	AKTS1
905	ANF
906	CAN2
907	CASP1
908	CATH
909	CSK
910	DPP2
911	DPP4
912	DPP9
913	DPP8
914	GP142
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918	KPCL
919	MDM4
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921	OPRK
922	PSA1
923	PSA2
924	PSA3
925	PSA4
926	PSA5
927	PSA6
928	PSA7
929	PSB10
930	PSB11
931	PSB1
932	PSB2
933	PSB3
934	PSB4

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897	CREBBP
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902	PARP6
903	TP53
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906	GZMB
907	CCNA2
908	CXCL8
909	GABBR2
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911	C1R
912	IKBKB
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967	PKN2
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971	STK10
972	CAMK2B
973	SLK

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946	AA2AR
947	B4GT1
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958	KITM
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967	RAC1
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969	RNAS2
970	S28A2
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955	GHSR
956	KCNK9
957	SCN10A
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959	TAOK2
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973	SLK

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985	F9
986	KARS
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988	BBOX1
989	PRF1
990	AKT2
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992	CCL5
993	HTR4
994	GRK6
995	SSTR3
996	NPBWR1
997	DAGLB
998	DNMT1
999	DNMT3L
1000	TDP2
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1002	CD38
1003	KAT5
1004	GRIA2
1005	PNMT
1006	KIF20A
1007	GRIN2B
1008	GRIA4
1009	EIF2AK2
1010	NEK2
1011	NMUR2
1012	FGF1

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985	PIN1
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988	AL1B1
989	CD22
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991	PLGF
992	RASH
993	RASN
994	SC5AB
995	CLTR1
996	TNNC1
997	TNNI3
998	TNNT2
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989	PRF1
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992	CCL5
993	HTR4
994	GRK6
995	SSTR3
996	NPBWR1
997	DAGLB
998	DNMT1
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1011	NMUR2
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1029	GLA
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1033	GABRA3
1034	GABRR1
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1044	EGLN2
1045	HIF1AN
1046	GRIK5
1047	GRM3
1048	GRM8
1049	GRM7
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1015	DAPK1
1016	ELAV1
1017	NEK6
1018	THIOM
1019	THIO
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1023	ITF2
1024	PDK1
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1050	NAC1
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1090	TK1

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1069	C11B2
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1091	TK2
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1097	P2RY2
1098	UMPS
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1124	ADA1D
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1127	FIBB
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1129	EF1A1

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1093	OGT
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1095	HEXB
1096	P2RY4
1097	P2RY2
1098	UMPS
1099	P2RY14
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1101	RNASE1
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1103	EIF4E
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1108	GSTP1
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1128	GRK5
1129	GRK4

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1161	PIP5K1C
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1164	CSNK1G2
1165	FGFR3
1166	PRKG2
1167	MAP2K4
1168	IRAK1

1130	EF1A2
1131	IF4A1
1132	M3K7
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1167	GRP3
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1167	MAP2K4
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1169	AAK1
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1172	STK16
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1186	IGFBP4
1187	IGFBP2
1188	PTP4A3
1189	IGFBP1
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1192	TRAP1
1193	PDK2
1194	PDK3
1195	PDK4
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1198	F7
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1202	TBK1
1203	DDR2
1204	DDR1
1205	STK17A
1206	TAB1
1207	SMARCA2

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1170	NR5A2
1171	P2Y12
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1173	S27A1
1174	S47A2
1175	S47A1
1176	SAT1
1177	SCN3A
1178	SCN5A
1179	SCN8A
1180	SGMR2
1181	STF1
1182	TLR7
1183	UBE2B
1184	XPA
1185	HCD2
1186	HPPD
1187	KLK14
1188	Q16198
1189	TPA
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1192	FAAH2
1193	FCER2
1194	LSHR
1195	NPFF1
1196	NPFF2
1197	PADI1
1198	PADI3
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1201	PAQR1
1202	RCOR1
1203	RIPK1
1204	TP4A3
1205	CCNE1
1206	CCNH
1207	CCNK

1169	AAK1
1170	MARK2
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1172	STK16
1173	FGFR4
1174	GNRHR
1175	RBBP4
1176	MAPKAPK3
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1186	IGFBP4
1187	IGFBP2
1188	PTP4A3
1189	IGFBP1
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1195	PDK4
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1202	TBK1
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1204	DDR1
1205	STK17A
1206	TAB1
1207	SMARCA2

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1209	PAK2
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1212	BDKRB1
1213	PFKFB4
1214	LIMK2
1215	PDE6D
1216	MAP3K5
1217	BAD
1218	MOGAT2
1219	BDKRB2
1220	GLS
1221	GC
1222	CTSA
1223	PGK1
1224	GSTA1
1225	FPR1
1226	LGALS1
1227	FHIT
1228	NADK
1229	VARS
1230	LARS
1231	RPS6KB2
1232	PKN1
1233	NEK6
1234	NUAK1
1235	HK2
1236	HK1
1237	MANBA
1238	CXCR4
1239	MPL
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1242	EZR
1243	DNASE1L3
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1245	VRK2
1246	NEU3

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1214	KKCC1
1215	M3K3
1216	MK15
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1218	MP2K4
1219	PHKG1
1220	ULK2
1221	TREA
1222	DYR
1223	KCNQ3
1224	S12A5
1225	SENP2
1226	PMM2
1227	GLUT4
1228	MP2K1
1229	ANM5
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1236	REV1
1237	RXFP1
1238	SERPH
1239	P2RX1
1240	SPP2A
1241	TAB1
1242	KCNH3
1243	PER2
1244	TLR8
1245	ALK
1246	AURKB

1208	MARS
1209	PAK2
1210	PKM
1211	NFKBIA
1212	BDKRB1
1213	PFKFB4
1214	LIMK2
1215	PDE6D
1216	MAP3K5
1217	BAD
1218	MOGAT2
1219	BDKRB2
1220	GLS
1221	GC
1222	CTSA
1223	PGK1
1224	GSTA1
1225	FPR1
1226	LGALS1
1227	FHIT
1228	NADK
1229	VARS
1230	LARS
1231	RPS6KB2
1232	PKN1
1233	NEK6
1234	NUAK1
1235	HK2
1236	HK1
1237	MANBA
1238	CXCR4
1239	MPL
1240	PRKAA1
1241	HPD
1242	EZR
1243	DNASE1L3
1244	BIRC5
1245	VRK2
1246	NEU3

1247	NEU4
1248	CD274
1249	PADI3
1250	NRAS
1251	ENTPD2
1252	PADI4
1253	LCT
1254	ITGA4
1255	GPR34
1256	P2RY10
1257	HSF1
1258	SLC10A1
1259	AMPD2
1260	UBLCP1
1261	EBP
1262	NEU2
1263	ASNS
1264	FPGS
1265	POLG
1266	NOD2
1267	SF3B3
1268	NRP1
1269	POLD1
1270	P2RY11
1271	CAMK4
1272	PRKD3
1273	MAP3K10
1274	PHKG1
1275	PTPRCAP
1276	TNNI3K
1277	MAPK12
1278	DPP9
1279	NDUFA4
1280	CALCA
1281	PDE6C
1282	MMP25
1283	MT-CO2
1284	TAOK1
1285	TAOK3

1247	CDK1
1248	CXCR1
1249	FAK1
1250	FLT3
1251	IGF1R
1252	MMP13
1253	NEK2
1254	P85A
1255	PIM1
1256	UFO
1257	V2R
1258	VGFR2

1247	NEU4
1248	CD274
1249	PADI3
1250	NRAS
1251	ENTPD2
1252	PADI4
1253	LCT
1254	ITGA4
1255	GPR34
1256	P2RY10
1257	HSF1
1258	SLC10A1
1259	AMPD2
1260	UBLCP1
1261	EBP
1262	NEU2
1263	ASNS
1264	FPGS
1265	POLG
1266	NOD2
1267	SF3B3
1268	NRP1
1269	POLD1
1270	P2RY11
1271	CAMK4
1272	PRKD3
1273	MAP3K10
1274	PHKG1
1275	PTPRCAP
1276	TNNI3K
1277	MAPK12
1278	DPP9
1279	NDUFA4
1280	CALCA
1281	PDE6C
1282	MMP25
1283	MT-CO2
1284	TAOK1
1285	TAOK3

1286	ROS1
1287	LRP6
1288	PRTN3
1289	ADAM9
1290	AHCYL1
1291	TARS
1292	PDE1B
1293	SIRT3
1294	CALCRL
1295	NCOR1
1296	TRPC6
1297	SLC2A1
1298	SLC2A3
1299	SLC2A2
1300	WNT3
1301	KCNJ5
1302	KCNJ6
1303	POLR1A
1304	FGFR2
1305	ATM
1306	ME1
1307	ENPP1
1308	CACNA1H
1309	HPN
1310	TPSAB1
1311	EIF2AK4
1312	TGM1
1313	CACNA1G
1314	PROC
1315	PTH1R
1316	PBRM1
1317	SMARCA4
1318	AGTR2
1319	GRPR
1320	GPR174
1321	FN1
1322	FANCF
1323	IDE
1324	HTR1F

1286	ROS1
1287	LRP6
1288	PRTN3
1289	ADAM9
1290	AHCYL1
1291	TARS
1292	PDE1B
1293	SIRT3
1294	CALCRL
1295	NCOR1
1296	TRPC6
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1298	SLC2A3
1299	SLC2A2
1300	WNT3
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1303	POLR1A
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1306	ME1
1307	ENPP1
1308	CACNA1H
1309	HPN
1310	TPSAB1
1311	EIF2AK4
1312	TGM1
1313	CACNA1G
1314	PROC
1315	PTH1R
1316	PBRM1
1317	SMARCA4
1318	AGTR2
1319	GRPR
1320	GPR174
1321	FN1
1322	FANCF
1323	IDE
1324	HTR1F

1325	PIK3C3
1326	ADCY1
1327	ADAMTS1
1328	L3MBTL3
1329	PIK3C2B
1330	AKT3
1331	SLC5A11
1332	TRPM2
1333	MDH2
1334	ITPR3
1335	ITPR1
1336	ITGB7
1337	DLG4
1338	ACE2
1339	TMPRSS15
1340	SLC47A1
1341	SLC47A2
1342	MT-ND4
1343	FKBP4
1344	ITGA3
1345	CACNA1C
1346	PSENEN
1347	PAK3
1348	AVPR1B
1349	KLK6
1350	NT5E
1351	MC3R
1352	KAT2A
1353	ENGASE
1354	KMT2A
1355	SUV39H1
1356	SMYD2
1357	EZH1
1358	SETDB1
1359	BRCA1
1360	DNPH1
1361	NNMT
1362	SLC46A1
1363	FOLR1

1325	PIK3C3
1326	ADCY1
1327	ADAMTS1
1328	L3MBTL3
1329	PIK3C2B
1330	AKT3
1331	SLC5A11
1332	TRPM2
1333	MDH2
1334	ITPR3
1335	ITPR1
1336	ITGB7
1337	DLG4
1338	ACE2
1339	TMPRSS15
1340	SLC47A1
1341	SLC47A2
1342	MT-ND4
1343	FKBP4
1344	ITGA3
1345	CACNA1C
1346	PSENEN
1347	PAK3
1348	AVPR1B
1349	KLK6
1350	NT5E
1351	MC3R
1352	KAT2A
1353	ENGASE
1354	KMT2A
1355	SUV39H1
1356	SMYD2
1357	EZH1
1358	SETDB1
1359	BRCA1
1360	DNPH1
1361	NNMT
1362	SLC46A1
1363	FOLR1

1364	SLC19A1
1365	FOLR2
1366	RNASEL
1367	HAGH
1368	GRIN2A
1369	IL1B
1370	PDE9A
1371	SLC37A4
1372	ABL2
1373	CBFB
1374	SLC16A3
1375	SLC22A2
1376	SLC22A3
1377	FOS
1378	ATP2A1
1379	ABCB11
1380	LANCL2
1381	UBE2I
1382	NTSR2
1383	NTSR1
1384	S1PR5
1385	S1PR4
1386	GALK1
1387	MAGI3
1388	ITGA2
1389	CHRNE
1390	HNMT
1391	NMBR
1392	CYP2B6
1393	BAX
1394	GALR2
1395	GALR1
1396	ADH5
1397	PTPRG
1398	BCL2L2
1399	AMPD1
1400	ELAVL1
1401	RAPGEF4
1402	MVD

1364	SLC19A1
1365	FOLR2
1366	RNASEL
1367	HAGH
1368	GRIN2A
1369	IL1B
1370	PDE9A
1371	SLC37A4
1372	ABL2
1373	CBFB
1374	SLC16A3
1375	SLC22A2
1376	SLC22A3
1377	FOS
1378	ATP2A1
1379	ABCB11
1380	LANCL2
1381	UBE2I
1382	NTSR2
1383	NTSR1
1384	S1PR5
1385	S1PR4
1386	GALK1
1387	MAGI3
1388	ITGA2
1389	CHRNE
1390	HNMT
1391	NMBR
1392	CYP2B6
1393	BAX
1394	GALR2
1395	GALR1
1396	ADH5
1397	PTPRG
1398	BCL2L2
1399	AMPD1
1400	ELAVL1
1401	RAPGEF4
1402	MVD

1403	SLC8A1
1404	RPA1
1405	HASPIN
1406	MYLK2
1407	CYP27B1
1408	RYR1
1409	NPEPPS
1410	CHRNB1
1411	PMM2
1412	SLC1A3
1413	CCR8
1414	GALR3
1415	PDE11A
1416	NOD1
1417	NPR3
1418	FUT6
1419	KLK3
1420	DDOST
1421	CCR6
1422	MAST3
1423	CCNT1
1424	SEM1
1425	CDK3
1426	HSD17B7
1427	PLK2
1428	RBBP9
1429	PARG
1430	PROKR1
1431	TGFB1
1432	HSPB1
1433	BAZ2B
1434	BAZ2A
1435	GABRA6
1436	NCEH1
1437	CTSZ
1438	MEN1
1439	USP10
1440	USP13
1441	CCNA1

1403	SLC8A1
1404	RPA1
1405	HASPIN
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1407	CYP27B1
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1409	NPEPPS
1410	CHRNB1
1411	PMM2
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1413	CCR8
1414	GALR3
1415	PDE11A
1416	NOD1
1417	NPR3
1418	FUT6
1419	KLK3
1420	DDOST
1421	CCR6
1422	MAST3
1423	CCNT1
1424	SEM1
1425	CDK3
1426	HSD17B7
1427	PLK2
1428	RBBP9
1429	PARG
1430	PROKR1
1431	TGFB1
1432	HSPB1
1433	BAZ2B
1434	BAZ2A
1435	GABRA6
1436	NCEH1
1437	CTSZ
1438	MEN1
1439	USP10
1440	USP13
1441	CCNA1

1442	CCNB1
1443	CCNH
1444	UBA2
1445	FNTB
1446	GABRB2
1447	CHRNB4
1448	KCNQ1
1449	TNNT2
1450	CHRNB2
1451	ITGB3
1452	ATP4A
1453	ITGA5
1454	ITGB6
1455	RBBP7
1456	ORAI1
1457	CAPNS1
1458	KCNJ3
1459	CHRNA1
1460	RAMP1
1461	GABRA4
1462	NCSTN
1463	ITGB2
1464	TNNI3
1465	PRKAA2
1466	EED
1467	CHRNG
1468	APH1A
1469	CCNB2
1470	CCND2
1471	SUZ12
1472	CHRND
1473	APH1B
1474	PSMD8
1475	PSMD4
1476	PSMD13
1477	PSMD7
1478	PSMD6
1479	PSMD11
1480	PSMD12

1442	CCNB1
1443	CCNH
1444	UBA2
1445	FNTB
1446	GABRB2
1447	CHRNB4
1448	KCNQ1
1449	TNNT2
1450	CHRNB2
1451	ITGB3
1452	ATP4A
1453	ITGA5
1454	ITGB6
1455	RBBP7
1456	ORAI1
1457	CAPNS1
1458	KCNJ3
1459	CHRNA1
1460	RAMP1
1461	GABRA4
1462	NCSTN
1463	ITGB2
1464	TNNI3
1465	PRKAA2
1466	EED
1467	CHRNG
1468	APH1A
1469	CCNB2
1470	CCND2
1471	SUZ12
1472	CHRND
1473	APH1B
1474	PSMD8
1475	PSMD4
1476	PSMD13
1477	PSMD7
1478	PSMD6
1479	PSMD11
1480	PSMD12

1481	PSMD3
1482	PSMD2
1483	PSMC5
1484	PSMC3
1485	PSMC6
1486	PSMC4
1487	PSMC1
1488	PSMC2
1489	ADRM1
1490	PSMD14
1491	PSMD1
1492	PSMB7
1493	PSMB4
1494	PSMB3
1495	PSMB11
1496	PSMB10
1497	PSMA8
1498	PSMA7
1499	PSMA6
1500	PSMA5
1501	PSMA4
1502	PSMA3
1503	PSMA2
1504	PSMA1
1505	PSMB6
1506	PSMB9
1507	PSMB2

1481	PSMD3
1482	PSMD2
1483	PSMC5
1484	PSMC3
1485	PSMC6
1486	PSMC4
1487	PSMC1
1488	PSMC2
1489	ADRM1
1490	PSMD14
1491	PSMD1
1492	PSMB7
1493	PSMB4
1494	PSMB3
1495	PSMB11
1496	PSMB10
1497	PSMA8
1498	PSMA7
1499	PSMA6
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1501	PSMA4
1502	PSMA3
1503	PSMA2
1504	PSMA1
1505	PSMB6
1506	PSMB9
1507	PSMB2

1508	A4
1509	ACES
1510	ACPM
1511	AGAL
1512	AK1BA
1513	AK1C4
1514	AK1C3
1515	ALDR
1516	ALR
1517	AMPN
1518	AOFA
1519	AOFB

1520	CAH13
1521	CAH14
1522	CAH12
1523	CAH3
1524	CAH1
1525	CAH2
1526	CAH4
1527	CAH5A
1528	CAH5B
1529	CAH6
1530	CAH7
1531	CAH9
1532	CH10
1533	CH60
1534	CHK1
1535	CHLE
1536	CIA30
1537	CP1A1
1538	CP19A
1539	CP1A2
1540	CP1B1
1541	CP24A
1542	CP26B
1543	CP2CJ
1544	DCOR
1545	DHB1
1546	DHB2
1547	DHB3
1548	DHI1
1549	DHPR
1550	DUS3
1551	DYN1
1552	ERR1
1553	G6PT1
1554	GLR
1555	GP183
1556	HDA11
1557	IMDH1
1558	IMDH2

1559	KCC2A
1560	KCMA1
1561	KCNB1
1562	KLF5
1563	KPCE
1564	LGUL
1565	LOX12
1566	LOX15
1567	LOX5
1568	LT4R1
1569	MDR1
1570	MPRI
1571	MTR1A
1572	MTR1B
1573	MYOC
1574	NDUA1
1575	NDUA2
1576	NDUA3
1577	NDUA4
1578	NDUA6
1579	NDUA5
1580	NDUA7
1581	NDUA8
1582	NDUAA
1583	NDUA9
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1585	NDUAC
1586	NDUAD
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1589	NDUB3
1590	NDUB4
1591	NDUB5
1592	NDUB7
1593	NDUB6
1594	NDUB8
1595	NDUB9
1596	NDUBA
1597	NDUBB

1598	NDUC1
1599	NDUF2
1600	NDUC2
1601	NDUF4
1602	NDUS1
1603	NDUF3
1604	NDUS2
1605	NDUS5
1606	NDUS3
1607	NDUS4
1608	NDUS7
1609	NDUS8
1610	NDUS6
1611	NDUV1
1612	NDUV2
1613	NDUV3
1614	NEMO
1615	NF2L2
1616	NU1M
1617	NU2M
1618	NU3M
1619	NU4LM
1620	NU4M
1621	NU5M
1622	NU6M
1623	NUA4L
1624	PACR
1625	PD2R
1626	PE2R2
1627	PE2R4
1628	PERM
1629	PGH1
1630	PGH2
1631	PLAP
1632	PPBI
1633	PTN11
1634	PTN1
1635	PTN6
1636	PTN7

1637	S22A3
1638	SDF1
1639	SENP7
1640	SENP6
1641	ST17B
1642	SYIC
1643	TAU
1644	TBB1
1645	TF65
1646	TF
1647	TNR1A
1648	TRPM5
1649	TS1R1
1650	TTHY
1651	XBP1
1652	IF4H
1653	S13A5
1654	TDT
1655	CBS
1656	ERR2
1657	ERR3
1658	HDA10
1659	MYG
1660	PDIA1
1661	SYYC
1662	1433G
1663	EBPL
1664	LYPA1
1665	LYPA2
1666	TYRO
1667	AMD
1668	GABT
1669	MPIP2
1670	NALD2
1671	RIR1
1672	SSDH
1673	AK1C1
1674	AK1C2
1675	CTDS1

1676	ERCC1
1677	EST2
1678	HCAR3
1679	IBP3
1680	IBP5
1681	KLK5
1682	LPAR5
1683	MDHC
1684	MDHM
1685	MEP1B
1686	MRP1
1687	PA24B
1688	PAR10
1689	PASK
1690	PPBN
1691	SAE2
1692	SC6A5
1693	SIR5
1694	T2R14
1695	TS1R2
1696	TS1R3
1697	TSSK2
1698	XPF
1699	CAN1
1700	PPBT
1701	SYUA
1702	ACHA7
1703	NSD2
1704	PSDE
1705	Q9UM81
1706	S28A3
1707	UPAR
1708	T2R31
1709	3MG
1710	ATG4B
1711	BGLR
1712	CBP
1713	CHK2
1714	CO9

1715	CP26A
1716	CSK21
1717	CSK22
1718	DEFM
1719	DPOLB
1720	EST1
1721	FA12
1722	FACE2
1723	GLRA3
1724	HIF1N
1725	IBP1
1726	IBP2
1727	IBP4
1728	IBP6
1729	KDM2B
1730	KLK7
1731	KS6B2
1732	LYAM1
1733	LYAM2
1734	MAX
1735	MITF
1736	MOT4
1737	NEUR3
1738	NR4A2
1739	P3C2G
1740	PA24A
1741	PA2GD
1742	PAR15
1743	PE2R1
1744	PGFRA
1745	POLH
1746	POLI
1747	PRKX
1748	PTN12
1749	RNH1
1750	S22A6
1751	S22A8
1752	S29A1
1753	S5A1

1754	S5A2
1755	SC5A7
1756	SPTC2
1757	SRPK1
1758	THA
1759	THB
1760	TLR1
1761	XCT
1762	GBB1
1763	GBG2
1764	HS71A
1765	PE2R3
1766	CP2A6
1767	TYDP1
1768	ACHB
1769	ACHD
1770	ACHG
1771	DHC24
1772	ERG1
1773	GGPPS
1774	ADH1G
1775	AMPL
1776	BGAL
1777	FAAH1
1778	FABPH
1779	FPPS
1780	GLCM
1781	GNAI1
1782	GNAI3
1783	GNAO
1784	HYEP
1785	LPAR2
1786	PA21B
1787	PA2G5
1788	PA2GA
1789	RAD52
1790	S22A1
1791	S22A2
1792	TLR2

1793	ACER2
1794	AMPE
1795	BHMT1
1796	BODG
1797	CERT
1798	CP4F2
1799	DGLA
1800	DPOLL
1801	DPOLM
1802	GABR1
1803	GABR2
1804	GBRR1
1805	GBRT
1806	GP174
1807	GSHR
1808	HAOX1
1809	HMDH
1810	HYES
1811	KPCA
1812	LPAR4
1813	LPAR6
1814	LYAM3
1815	MCAT
1816	MPIP1
1817	MPIP3
1818	NSMA
1819	P2Y10
1820	PA2GC
1821	PA2GX
1822	PF2R
1823	PI2R
1824	PPAC
1825	S6A11
1826	SO2A1
1827	TA2R
1828	THAS
1829	PA1B2
1830	SPTC1
1831	DPOLA

1832	LY96
1833	PTN13
1834	GBRB1
1835	PPGB
1836	UBP1
1837	WDR48
1838	RPGF4
1839	ACHA
1840	CRYAB
1841	MSRE
1842	NLRP1
1843	HCN4
1844	SPRE
1845	TAAR5
1846	TY3H
1847	ALBU
1848	KS6A5
1849	UD2B7
1850	ABCBB
1851	ANDR
1852	CBG
1853	CD4
1854	CP17A
1855	CP27B
1856	GPBAR
1857	MRP4
1858	NPC1
1859	NPCL1
1860	NTCP2
1861	NTCP
1862	RORG
1863	SIA4A
1864	SRBP2
1865	VTDB
1866	AT12A
1867	AT1A1
1868	GBRB2
1869	GBRD
1870	NOTC1

1871	PAX8
1872	SO4C1
1873	ACH10
1874	ACHA9
1875	C11B1
1876	CP27A
1877	PHLP2
1878	CEGT
1879	ABC3A
1880	CBPA1
1881	CBPA3
1882	FUCO
1883	OXDA
1884	S15A1
1885	SGMR1
1886	VMAT2
1887	BT3A1
1888	FDFT
1889	AA3R
1890	ABC3G
1891	ACRO
1892	ANM6
1893	APAF
1894	CAC1D
1895	CATG
1896	CP2D6
1897	CP2C9
1898	CP3A4
1899	DOPO
1900	ELNE
1901	F263
1902	F264
1903	FABPI
1904	FABPL
1905	GBRA3
1906	GBRA5
1907	GP139
1908	HGFA
1909	HKDC1

1910	HS90A
1911	LCAP
1912	LEG1
1913	LEG9
1914	LOXL2
1915	MK08
1916	MK10
1917	NCOA3
1918	PABP1
1919	PAR14
1920	PHOP1
1921	PPAP
1922	PPME1
1923	PRIO
1924	PUR9
1925	PYRD
1926	SC6A3
1927	SDHB
1928	SENP1
1929	SENP8
1930	SERA
1931	SMAD3
1932	TGFR2
1933	TMIG3
1934	TRY1
1935	UBC9
1936	UROK
1937	VGFR3
1938	KAT8
1939	QCR7
1940	UBP4
1941	UBP5
1942	PPIB
1943	PPIG
1944	HEM3
1945	RGS8
1946	ARBK2
1947	CLAT
1948	ERBB3

1949	KI20A
1950	TOP2B
1951	COT2
1952	ERO1A
1953	ITA3
1954	MCLN3
1955	OX2R
1956	PTN22
1957	PTN5
1958	PTN2
1959	ARY1
1960	DPYD
1961	IF4A3
1962	BPTF
1963	BRD7
1964	SMCA4
1965	DYR1A
1966	DYR1B
1967	NICA
1968	PEN2
1969	PSN1
1970	PSN2
1971	S12A2
1972	CYC
1973	DNLI1
1974	KKCC2
1975	OXDD
1976	PAR16
1977	RFA1
1978	AMYP
1979	BIP
1980	CD69
1981	CDD
1982	CXB2
1983	GDE
1984	HXK1
1985	HXK2
1986	LEG3
1987	LEG4

1988	LEG8
1989	MGA
1990	SC5A1
1991	SC5A2
1992	SC5A4
1993	AL1A2
1994	AL1A3
1995	CGL
1996	PURA2
1997	S6A12
1998	GNPAT
1999	AMPB
2000	BHMT2
2001	EAA2
2002	EAA3
2003	GSH1
2004	GBRA6
2005	HMGB1
2006	ARGI1
2007	ARGI2
2008	CBPN
2009	EAA1
2010	GRIA3
2011	LAT1
2012	OTC
2013	S15A2
2014	CBPB1
2015	GSTA2
2016	GLO2
2017	LKHA4
2018	PCSK6
2019	CPNS1
2020	DNPEP
2021	HLAA
2022	KISSR
2023	PSA
2024	SYLC
2025	5HT1A
2026	5HT1B

2027	5HT1D
2028	5HT1E
2029	5HT2A
2030	5HT2B
2031	5HT2C
2032	5HT4R
2033	AAAT
2034	AAKB2
2035	AAPK1
2036	ADA12
2037	C3AR
2038	CASP5
2039	CASPA
2040	CATB
2041	CATC
2042	CATL1
2043	CBX7
2044	DYRK3
2045	GASR
2046	GBRA1
2047	GBRG2
2048	GCR
2049	HEPS
2050	KCC2B
2051	KCC2D
2052	KCC2G
2053	KGP2
2054	KGP1
2055	KPCD3
2056	KPCD2
2057	KPCD
2058	KPCG
2059	KS6A3
2060	MCR
2061	MMP11
2062	MMP17
2063	MRCKA
2064	MSHR
2065	NEP

2066	NK1R
2067	NK2R
2068	NK3R
2069	NMUR1
2070	NTR1
2071	OPRD
2072	OPRM
2073	PSB5
2074	PSB8
2075	PSB9
2076	RENI
2077	RUVB1
2078	SGK2
2079	SSR1
2080	SSR2
2081	SSR3
2082	SSR4
2083	SSR5
2084	TMPS6
2085	TPH1
2086	TSSK1
2087	AKTS1
2088	ANF
2089	CAN2
2090	CATH
2091	DPP2
2092	GP142
2093	IL8
2094	KPCL
2095	NPY4R
2096	OPRK
2097	PSA1
2098	PSA2
2099	PSA3
2100	PSA4
2101	PSA5
2102	PSA6
2103	PSA7
2104	PSB10

2105	PSB11
2106	PSB1
2107	PSB2
2108	PSB3
2109	PSB4
2110	PSB6
2111	PSB7
2112	SCNNA
2113	SEPR
2114	TPH2
2115	S13A2
2116	S13A3
2117	AA1R
2118	AA2BR
2119	AA2AR
2120	B4GT1
2121	CDC42
2122	DNM3B
2123	DPOG1
2124	ENTP2
2125	G3P
2126	HSP7C
2127	KITH
2128	KITM
2129	LEG7
2130	OGT1
2131	P2Y14
2132	PNPH
2133	RAB7A
2134	RNAS1
2135	RNAS2
2136	S28A2
2137	SIAT1
2138	TYPH
2139	SUIS
2140	ACM5
2141	ITA4
2142	ITB1
2143	PD2R2

2144	S22AC
2145	6PGD
2146	DHI2
2147	RGS17
2148	SO1B1
2149	AL1B1
2150	PLGF
2151	RASH
2152	RASN
2153	SC5AB
2154	CLTR1
2155	ELAV3
2156	PGAM1
2157	SIAT6
2158	LX15B
2159	CATL2
2160	CREB1
2161	KCND3
2162	TNKS1
2163	CP2C8
2164	ELAV1
2165	THIOM
2166	THIO
2167	DYN2
2168	GSTO1
2169	ITF2
2170	ACMSD
2171	DCMC
2172	DUS22
2173	LMBL3
2174	NR0B1
2175	P2RX4
2176	RCOR3
2177	RET4
2178	SC6A1
2179	SC6A7
2180	TYDP2
2181	UCHL1
2182	PIN4

2183	PLCG2
2184	PPID
2185	TNFA
2186	KAT3
2187	MVD1
2188	PGTB1
2189	CAC1H
2190	UBE2N
2191	MRP2
2192	NAC1
2193	ACVL1
2194	ANTR2
2195	CD5R1
2196	ULA1
2197	MAT1
2198	ANO1
2199	MA2B1
2200	AAKB1
2201	AAKG1
2202	GBRB3
2203	C11B2
2204	GTR1
2205	UBP7
2206	AVR2A
2207	AVR2B
2208	CDK14
2209	CDK15
2210	CDK17
2211	CDK18
2212	CILK1
2213	DUSTY
2214	KC1AL
2215	KCC4
2216	MRCKB
2217	PI51C
2218	Q96QA9
2219	ST32A
2220	STK35
2221	CC14A

2222	PTN9
2223	LIPP
2224	COX2
2225	AL1A1
2226	KCNA1
2227	KCNA2
2228	KCNA4
2229	KCNA6
2230	KCNA7
2231	LOXL3
2232	NPBW1
2233	NRAM2
2234	TLK1
2235	ADA2C
2236	ADA2A
2237	ADA1D
2238	PDE1A
2239	TBB5
2240	FIBB
2241	EF1A1
2242	EF1A2
2243	IF4A1
2244	M3K7
2245	MP2K2
2246	MP2K6
2247	AK1A1
2248	ACM4
2249	PTPRO
2250	FUT5
2251	MP2K7
2252	TBB3
2253	EF2K
2254	ASM
2255	ADHX
2256	DHB14
2257	GLRB
2258	PAI1
2259	ENPP3
2260	CSN5

2261	F16P1
2262	CAC1A
2263	CACB1
2264	PRGR
2265	A8K2H7
2266	ACHA5
2267	ACM1
2268	ACM2
2269	ACM3
2270	ATF1
2271	CAC1B
2272	CATK
2273	ENTK
2274	GRP3
2275	P2Y12
2276	S100B
2277	S27A1
2278	S47A2
2279	S47A1
2280	SAT1
2281	SCN3A
2282	SCN8A
2283	SGMR2
2284	STF1
2285	UBE2B
2286	XPA
2287	HCD2
2288	HPPD
2289	KLK14
2290	Q16198
2291	TPA
2292	AOC2
2293	FAAH2
2294	LSHR
2295	NPFF1
2296	NPFF2
2297	PADI1
2298	PAQR2
2299	PAQR1

2300	TP4A3
2301	CCNK
2302	CCNO
2303	DCLK3
2304	DMPK
2305	KKCC1
2306	M3K3
2307	MK15
2308	MP2K3
2309	MP2K4
2310	ULK2
2311	TREA
2312	DYR
2313	KCNQ3
2314	S12A5
2315	SENP2
2316	GLUT4
2317	MP2K1
2318	ANM5
2319	BKRB1
2320	CRBN
2321	HCN1
2322	MEP50
2323	NCOA1
2324	RAGE
2325	REV1
2326	RXFP1
2327	SERPH
2328	P2RX1
2329	SPP2A
2330	KCNH3
2331	FAK1
2332	P85A
2333	UFO
2334	V2R
2335	VGFR2

Table S3.1 Targets Obtained from GeneCards (n = 292)

No	Target GeneCards
1	FBN1
2	TP53
3	TYR
4	MC1R
5	KRT14
6	FLG
7	CDKN2A
8	LMNA
9	CTNNB1
10	COL1A1
11	EGFR
12	PTEN
13	TGM1
14	TYRP1
15	ELN
16	KRT10
17	AKT1
18	KRT17
19	LORICRIN
20	IL6
21	MMP1
22	COL3A1
23	TNF
24	MYC
25	XPA
26	MITF
27	KRT16
28	MTOR
29	EZH2
30	DDB2
31	TGFBR2
32	IVL
33	PIK3R1
34	LOX
35	CTSB
36	MMP2
37	IL1B
38	MIR155
39	TGFB1
40	FAS
41	GNAQ
42	MAPK1
43	VEGFA
44	IL1A
45	ECM1

Table S3.2 Targets Obtained from OMIM (n = 171)

No	Target OMIM
1	SHEP8
2	SHEP3
3	SHEP5
4	SHEP9
5	SHEP1
6	SHEP7
7	OCA6
8	SHEP2
9	PSS1
10	PSS2
11	CSCSC1
12	SHEP6
13	LSDMCA3
14	LSDMCA1
15	SHEP10
16	SHEP11
17	PI3
18	KWE
19	CRJS
20	EDSMC1
21	GAMOS1
22	RSDM1
23	LSDMCA2
24	PSS4
25	HYPTSV
26	NXD
27	WSS
28	EDSFS
29	SSKS
30	BBRSAY
31	CARASIL
32	NISBD1
33	NISBD2
34	PSS3
35	PLACK
36	KOGS
37	CSCSC2
38	PSS5
39	PSS6
40	CASGID
41	VISS
42	NEDHFS
43	WHSF
44	AMVC
45	COL1A1

Table S3.3 Merged Targets from GeneCards & OMIM (n = 450)

No	Merged Target from GeneCards & OMIM
1	FBN1
2	TP53
3	TYR
4	MC1R
5	KRT14
6	FLG
7	CDKN2A
8	LMNA
9	CTNNB1
10	COL1A1
11	EGFR
12	PTEN
13	TGM1
14	TYRP1
15	ELN
16	KRT10
17	AKT1
18	KRT17
19	LORICRIN
20	IL6
21	MMP1
22	COL3A1
23	TNF
24	MYC
25	XPA
26	MITF
27	KRT16
28	MTOR
29	EZH2
30	DDB2
31	TGFBR2
32	IVL
33	PIK3R1
34	LOX
35	CTSB
36	MMP2
37	IL1B
38	MIR155
39	TGFB1
40	FAS
41	GNAQ
42	MAPK1
43	VEGFA
44	IL1A
45	ECM1

Table S4 Final Targets

No	Final Targets
1	MMP2
2	XDH
3	IRAK1
4	HSD17B2
5	MMP7
6	MITF
7	NOS2
8	ELANE
9	F2RL1
10	PTK2
11	MAPK10
12	FGFR3
13	RARB
14	FN1
15	NFE2L2
16	HDAC3
17	CTSB
18	TNF
19	IKBKG
20	HAGH
21	ITGB1
22	PSMC4
23	SHH
24	PTGS2
25	CTNNB1
26	ESR1
27	PRF1
28	DHCR7
29	VEGFA
30	TGFB1
31	CCNA2
32	MMP1
33	MMP12
34	TRPV1
35	ABCC9
36	PPARD
37	GSR
38	GLO1
39	MMP3
40	MMP8

41	MAPK1
42	CYP27B1
43	MMP14
44	MDM2
45	EGFR
46	CREB1
47	MAPK8
48	GZMB
49	GPER1
50	HRH1
51	ODC1
52	TYR
53	RNASE1
54	TP53
55	ACP1
56	CASP9
57	PIK3R1
58	NFKB1
59	SIRT1
60	IL1B
61	NFKBIA
62	GLB1
63	MMP10
64	ESR2
65	CYP1B1
66	CHRNA7
67	MMP13
68	ALOX5
69	FASN
70	RXRA
71	NR1H3
72	ACACA
73	EZH2
74	CASP8
75	PPARG
76	PRKCD
77	CALCA
78	MTOR
79	MAPK14
80	PLA2G4A
81	SCD
82	CHUK

83	NR1H2
84	ORAI1
85	NOX4
86	BAD
87	HSPA1A
88	MC1R
89	CTSD
90	IL6
91	CASP3
92	XPF
93	VDR
94	TGM1
95	RARA
96	SERPINH1
97	PPARA
98	DNMT1
99	PIK3CG
100	FOS
101	XPA
102	BCL2L1
103	MAPK3
104	CTSL
105	HIF1A
106	HSF1
107	TLR4
108	RARG
109	TGFBR2
110	AKT1
111	MIF
112	HSD11B1
113	KCNJ5
114	JUN
115	AR
116	BAX
117	RPS6KA3
118	RPS6KB1
119	MMP9
120	RXRB

46	VDR
47	MMP9
48	DCT
49	SMAD4
50	TLR4
51	MIR34A
52	ELANE
53	EGF
54	MIR146A
55	DEFB4A
56	JUN
57	PPARG
58	BMP6
59	PTGS2
60	MIR17
61	FBN2
62	FOS
63	CDKN1A
64	CHUK
65	TGFB3
66	ODC1
67	ITGB1
68	FN1
69	MIR125A
70	MIR146B
71	SMAD2
72	HNF1A-AS1
73	MDM2
74	CD36
75	CERNA3
76	ABCC9
77	NFE2L2
78	MIR20A
79	HIF1A
80	CAT
81	ESR1
82	TMX2-CTNND1
83	MYD88
84	CASP3
85	LINC-ROR
86	LINC01672
87	MMP3
88	CYBB
89	SOD2-OT1
90	PWAR1
91	IL1R1
92	MMP13

46	COL1A2
47	CALML5
48	ASPRV1
49	MC1R
50	FBN1
51	IWC
52	DSP
53	PXE
54	CDSN
55	RDEB
56	EBS4
57	ARCI1
58	DCWHK
59	PSORS1
60	JEB5B
61	EHK1
62	TGM1
63	EDSVASC
64	COL17A1
65	PKP1
66	COL7A1
67	TGM5
68	AR
69	EDSPD1
70	EBS1A
71	IP
72	CSTLO
73	EBS6
74	JEB4
75	EDSDERMS
76	JEB1B
77	NETH
78	ARCL3A
79	CMM1
80	COL3A1
81	SLC24A5
82	TP53
83	CAMP
84	SLC45A2
85	OCA2
86	CDPX2
87	DKCX
88	BOS
89	ATORS
90	LAMB3
91	TYR
92	KLHL24

46	VDR
47	MMP9
48	DCT
49	SMAD4
50	TLR4
51	MIR34A
52	ELANE
53	EGF
54	MIR146A
55	DEFB4A
56	JUN
57	PPARG
58	BMP6
59	PTGS2
60	MIR17
61	FBN2
62	FOS
63	CDKN1A
64	CHUK
65	TGFB3
66	ODC1
67	ITGB1
68	FN1
69	MIR125A
70	MIR146B
71	SMAD2
72	HNF1A-AS1
73	MDM2
74	CD36
75	CERNA3
76	ABCC9
77	NFE2L2
78	MIR20A
79	HIF1A
80	CAT
81	ESR1
82	TMX2-CTNND1
83	MYD88
84	CASP3
85	LINC-ROR
86	LINC01672
87	MMP3
88	CYBB
89	SOD2-OT1
90	PWAR1
91	IL1R1
92	MMP13

93	MMP14
94	DCN
95	LINC02605
96	MAPK14
97	CRABP2
98	CASP8
99	PPARA
100	SPRY4-IT1
101	F2RL1
102	PRF1
103	KRT19
104	NFKB1
105	MIR409
106	TIMP1
107	RARA
108	CCN1
109	GLB1
110	TRPV1
111	SOD1
112	NFKBIA
113	GZMB
114	AREG
115	CALCA
116	NOS2
117	CP
118	MIR34C
119	MAPK8
120	MAPK3
121	MIF
122	MMP8
123	S100A8
124	AQP3
125	TIMP2
126	MIR23A
127	BAX
128	PRKCD
129	CYP1B1
130	SPARC
131	HBEGF
132	TRP-AGG2-5
133	TRP-AGG2-6
134	TRP-AGG2-1
135	TRP-AGG2-2
136	TRP-AGG2-3
137	TRP-AGG2-4
138	TRP-AGG2-7
139	TRP-AGG2-8

93	JEB1A
94	OHS
95	XLI
96	XPA
97	JUP
98	KITLG
99	ADCL1
100	EDSCL1
101	BHD
102	PRAAS1
103	ARCL2A
104	MAS
105	HGPS
106	KRT10
107	LMNA
108	IKBKG
109	CSTA
110	XPF
111	MASTC
112	CNC1
113	NF1
114	HRZ
115	COL5A1
116	GJB2
117	KRT5
118	TGFB1
119	AQP3
120	FLG2
121	SWNV
122	PPKS1
123	EDSKSCL1
124	FDH
125	EDSCLL
126	MRTES
127	OI1
128	BLAUS
129	CAST
130	KRT14
131	CCL27
132	SMARCAD1
133	EXPH5
134	SHH
135	CERS3
136	DUH1
137	EBS5B
138	XHED
139	IPS

93	MMP14
94	DCN
95	LINC02605
96	MAPK14
97	CRABP2
98	CASP8
99	PPARA
100	SPRY4-IT1
101	F2RL1
102	PRF1
103	KRT19
104	NFKB1
105	MIR409
106	TIMP1
107	RARA
108	CCN1
109	GLB1
110	TRPV1
111	SOD1
112	NFKBIA
113	GZMB
114	AREG
115	CALCA
116	NOS2
117	CP
118	MIR34C
119	MAPK8
120	MAPK3
121	MIF
122	MMP8
123	S100A8
124	AQP3
125	TIMP2
126	MIR23A
127	BAX
128	PRKCD
129	CYP1B1
130	SPARC
131	HBEGF
132	TRP-AGG2-5
133	TRP-AGG2-6
134	TRP-AGG2-1
135	TRP-AGG2-2
136	TRP-AGG2-3
137	TRP-AGG2-4
138	TRP-AGG2-7
139	TRP-AGG2-8

140	BDNF-AS
141	MMP10
142	PIK3CG
143	IRAK1
144	MIR93
145	HSPA4
146	SMAD7
147	SCD
148	PPARD
149	SPRR1B
150	HRH1
151	PEX7
152	LYZ
153	DNMT1
154	MMP7
155	FBLN2
156	RXRA
157	SOD2
158	CREB1
159	SIRT1
160	MMP12
161	POSTN
162	MAPK10
163	LMNB1
164	ORAI1
165	ESR2
166	ANGPT1
167	HSD11B1
168	RPS6KA3
169	VCAN
170	MIR15A
171	SFN
172	NR1H2
173	XDH
174	CTSL
175	OPN3
176	GPX4
177	CYP27B1
178	IL1RAPL2
179	IL18R1
180	TP53BP1
181	CTSD
182	RARG
183	CLU
184	SULT1E1
185	BCL2L1
186	HSD17B4

140	XPC
141	CWS1
142	EDSKSCL2
143	ABCC6
144	TP63
145	CADASIL1
146	EDSSPD1
147	IHCM
148	HIES1
149	ARCI11
150	FFDD3
151	HFS
152	ARCI4B
153	AIS
154	HMI
155	ARCL2B
156	PRP
157	NEPPK
158	ATP2A2
159	IRF4
160	MAPRE2
161	FBLN5
162	EBS2F
163	FPHH
164	IMF1
165	IFAP1
166	KNDLRS
167	WBS
168	OLMS1
169	FGFR3
170	HCCS
171	EDA

140	BDNF-AS
141	MMP10
142	PIK3CG
143	IRAK1
144	MIR93
145	HSPA4
146	SMAD7
147	SCD
148	PPARD
149	SPRR1B
150	HRH1
151	PEX7
152	LYZ
153	DNMT1
154	MMP7
155	FBLN2
156	RXRA
157	SOD2
158	CREB1
159	SIRT1
160	MMP12
161	POSTN
162	MAPK10
163	LMNB1
164	ORAI1
165	ESR2
166	ANGPT1
167	HSD11B1
168	RPS6KA3
169	VCAN
170	MIR15A
171	SFN
172	NR1H2
173	XDH
174	CTSL
175	OPN3
176	GPX4
177	CYP27B1
178	IL1RAPL2
179	IL18R1
180	TP53BP1
181	CTSD
182	RARG
183	CLU
184	SULT1E1
185	BCL2L1
186	HSD17B4

187	RBP1
188	RARS1
189	ALOX5
190	AGER
191	MIR15B
192	GSR
193	CASP9
194	RHO
195	SERPINH1
196	WWTR1
197	IL11
198	RARB
199	CCNA2
200	EMSLR
201	SHC1
202	GAL
203	CSN1S1
204	DHCR7
205	OPN1SW
206	PTK2
207	TRA-TGC7-1
208	TRA-TGC5-1
209	CHRNA7
210	CYCS
211	CEMIP
212	HAS2
213	SULT1A1
214	OPN4
215	ATF2
216	RPS27A
217	PLA2G4A
218	DSPP
219	FASN
220	ANXA1
221	MSRA
222	RPS6KB1
223	MIR484
224	ACACA
225	MIR663A
226	PDYN
227	TRE-TTC3-1
228	NOX4
229	ACP1
230	MFAP2
231	HYAL1
232	NR1H3
233	GDF15

187	RBP1
188	RARS1
189	ALOX5
190	AGER
191	MIR15B
192	GSR
193	CASP9
194	RHO
195	SERPINH1
196	WWTR1
197	IL11
198	RARB
199	CCNA2
200	EMSLR
201	SHC1
202	GAL
203	CSN1S1
204	DHCR7
205	OPN1SW
206	PTK2
207	TRA-TGC7-1
208	TRA-TGC5-1
209	CHRNA7
210	CYCS
211	CEMIP
212	HAS2
213	SULT1A1
214	OPN4
215	ATF2
216	RPS27A
217	PLA2G4A
218	DSPP
219	FASN
220	ANXA1
221	MSRA
222	RPS6KB1
223	MIR484
224	ACACA
225	MIR663A
226	PDYN
227	TRE-TTC3-1
228	NOX4
229	ACP1
230	MFAP2
231	HYAL1
232	NR1H3
233	GDF15

234	CACNA1G-AS1
235	CLOCK
236	TCF7L2
237	GLO1
238	HYAL3
239	POLQ
240	HSPA1A
241	MIR663B
242	HMMR
243	KCNJ5
244	PPARGC1A
245	VTRNA2-1
246	HSF1
247	MRC2
248	TAGLN
249	BAD
250	ANG
251	CARMN
252	OPN5
253	HSD17B8
254	SIRT4
255	GPER1
256	HAGH
257	SAA1
258	SNORD44
259	MIR101-1
260	MIR1246
261	MSRB1
262	XAB2
263	RXRB
264	TEP1
265	MFAP4
266	GDA
267	STXBP5L
268	DLEU2
269	HSD17B2
270	RPS3
271	RNASE1
272	MIR377
273	HDAC3
274	MIP
275	GREB1
276	LPIN1
277	FOSB
278	HYAL2
279	PTPRU
280	SNORD24

234	CACNA1G-AS1
235	CLOCK
236	TCF7L2
237	GLO1
238	HYAL3
239	POLQ
240	HSPA1A
241	MIR663B
242	HMMR
243	KCNJ5
244	PPARGC1A
245	VTRNA2-1
246	HSF1
247	MRC2
248	TAGLN
249	BAD
250	ANG
251	CARMN
252	OPN5
253	HSD17B8
254	SIRT4
255	GPER1
256	HAGH
257	SAA1
258	SNORD44
259	MIR101-1
260	MIR1246
261	MSRB1
262	XAB2
263	RXRB
264	TEP1
265	MFAP4
266	GDA
267	STXBP5L
268	DLEU2
269	HSD17B2
270	RPS3
271	RNASE1
272	MIR377
273	HDAC3
274	MIP
275	GREB1
276	LPIN1
277	FOSB
278	HYAL2
279	PTPRU
280	SNORD24

281	MIR3619
282	PTPRK
283	FBXO40
284	MIR20B
285	BMAL1
286	PSMC4
287	SSBP3
288	WARS1
289	SNORD38B
290	DUSP16
291	MIR101-2
292	MIR6732

281	MIR3619
282	PTPRK
283	FBXO40
284	MIR20B
285	BMAL1
286	PSMC4
287	SSBP3
288	WARS1
289	SNORD38B
290	DUSP16
291	MIR101-2
292	MIR6732

293	SHEP8
294	SHEP3
295	SHEP5
296	SHEP9
297	SHEP1
298	SHEP7
299	OCA6
300	SHEP2
301	PSS1
302	PSS2
303	CSCSC1
304	SHEP6
305	LSDMCA3
306	LSDMCA1
307	SHEP10
308	SHEP11
309	PI3
310	KWE
311	CRJS
312	EDSMC1
313	GAMOS1
314	RSDM1
315	LSDMCA2
316	PSS4
317	HYPTSV
318	NXD
319	WSS
320	EDSFS
321	SSKS
322	BBRSAY
323	CARASIL
324	NISBD1
325	NISBD2
326	PSS3
327	PLACK
328	KOGS
329	CSCSC2
330	PSS5
331	PSS6
332	CASGID

333	VISS
334	NEDHFS
335	WHSF
336	AMVC
337	COL1A2
338	CALML5
339	ASPRV1
340	IWC
341	DSP
342	PXE
343	CDSN
344	RDEB
345	EBS4
346	ARCI1
347	DCWHK
348	PSORS1
349	JEB5B
350	EHK1
351	EDSVASC
352	COL17A1
353	PKP1
354	COL7A1
355	TGM5
356	AR
357	EDSPD1
358	EBS1A
359	IP
360	CSTLO
361	EBS6
362	JEB4
363	EDSDERMS
364	JEB1B
365	NETH
366	ARCL3A
367	CMM1
368	SLC24A5
369	CAMP
370	SLC45A2
371	OCA2
372	CDPX2
373	DKCX
374	BOS
375	ATORS
376	LAMB3
377	KLHL24
378	JEB1A
379	OHS
380	XLI
381	JUP
382	KITLG
383	ADCL1
384	EDSCL1
385	BHD
386	PRAAS1

387	ARCL2A
388	MAS
389	HGPS
390	IKBKG
391	CSTA
392	XPF
393	MASTC
394	CNC1
395	NF1
396	HRZ
397	COL5A1
398	GJB2
399	KRT5
400	FLG2
401	SWNV
402	PPKS1
403	EDSKSCL1
404	FDH
405	EDSCLL
406	MRTES
407	OI1
408	BLAUS
409	CAST
410	CCL27
411	SMARCAD1
412	EXPH5
413	SHH
414	CERS3
415	DUH1
416	EBS5B
417	XHED
418	IPS
419	XPC
420	CWS1
421	EDSKSCL2
422	ABCC6
423	TP63
424	CADASIL1
425	EDSSPD1
426	IHCM
427	HIES1
428	ARCI11
429	FFDD3
430	HFS
431	ARCI4B
432	AIS
433	HMI
434	ARCL2B
435	PRP
436	NEPPK
437	ATP2A2
438	IRF4
439	MAPRE2
440	FBLN5

441	EBS2F
442	FPHH
443	IMF1
444	IFAP1
445	KNDLRS
446	WBS
447	OLMS1
448	FGFR3
449	HCCS
450	EDA

Table S5 Topological Analysis

No	Name	Degree	Betweenness Centrality	Closeness Centrality
1	TP53	87	0.07605433538326445	0.8028169014084506
2	TNF	82	0.045516699810985814	0.7808219178082192
3	AKT1	81	0.037238549719400535	0.7755102040816326
4	IL6	80	0.04706532492493631	0.7702702702702703
5	IL1B	76	0.043344469767617265	0.75
6	JUN	73	0.02429429174671744	0.7307692307692307
7	EGFR	72	0.028662762209602552	0.7215189873417721
8	MAPK3	71	0.027284815521139684	0.7261146496815286
9	CASP3	69	0.02389907466101961	0.7169811320754718
10	TGFB1	68	0.01763759512308019	0.6993865030674846
11	MMP9	68	0.015515102471512809	0.6993865030674846
12	HIF1A	67	0.014999376535242151	0.7037037037037037
13	NFKB1	65	0.014316149463928469	0.6993865030674846
14	PPARG	64	0.029222919999211058	0.6951219512195121
15	CTNNB1	64	0.026714868616781736	0.6909090909090909
16	ESR1	64	0.03522753534869422	0.6826347305389222
17	FOS	62	0.019971242854593486	0.6785714285714286
18	PTGS2	62	0.017718803458085037	0.6826347305389222
19	TLR4	61	0.023940571002728058	0.6745562130177515
20	SIRT1	58	0.01752003399486298	0.6666666666666666
21	MTOR	58	0.010624152986260958	0.6589595375722543
22	FN1	58	0.010263597785445552	0.6589595375722543
23	CREB1	56	0.02992842015489534	0.6514285714285714
24	MMP2	55	0.008119237004494998	0.6440677966101696
25	MAPK1	51	0.010430575414675918	0.6333333333333333
26	NFKBIA	51	0.009409134830109992	0.6298342541436464
27	CASP8	48	0.0033009249752800904	0.6195652173913044
28	MAPK8	47	0.005522962550402124	0.6162162162162163
29	BCL2L1	46	0.0030915838238182143	0.6162162162162163
30	CASP9	45	0.003521107105952071	0.6162162162162163
31	NFE2L2	45	0.005753796855578962	0.6162162162162163
32	PPARA	44	0.009451759790369206	0.6129032258064516
33	MDM2	43	0.002895180910769237	0.6
34	MAPK14	41	0.0035879480385844985	0.5968586387434555
35	RPS6KB1	39	0.001411587294949634	0.59375
36	ESR2	39	0.007853387447832032	0.5876288659793815
37	MMP3	37	0.002454431557437139	0.5816326530612245
38	AR	37	0.0016362222534002492	0.5846153846153846
39	PPARD	36	0.006077277710586471	0.5816326530612245
40	PIK3R1	36	0.001995258920143327	0.5786802030456852
41	EZH2	35	0.003959294074836457	0.5786802030456852
42	MMP1	33	0.00624060978561585	0.5671641791044776
43	CTSB	33	0.0015239847031895955	0.5643564356435644
44	MMP13	32	0.0013127071344092868	0.5643564356435644

45	PTK2	31	0.0009213538843980310	0.5615763546798029
46	DNMT1	30	0.001007942972807988	0.5643564356435644
47	CHUK	30	0.0006254479254017500	0.5615763546798029
48	MMP7	29	0.001461370618538331	0.5560975609756097
49	TGFBR2	29	0.001063381670141655	0.5588235294117647
50	ITGB1	29	0.0009307083509932840	0.5588235294117647
51	CCNA2	29	0.000627126604644604	0.5533980582524272
52	FASN	28	0.009071041280774609	0.5533980582524272
53	NOX4	27	0.0004302017458449750	0.5560975609756097
54	RARA	26	0.003340046347039325	0.5454545454545455
55	NOS2	26	0.0010232765448809221	0.5533980582524272
56	HDAC3	25	0.0028060839096553563	0.5352112676056338
57	RXRA	25	0.003658883593880726	0.5402843601895735
58	MMP14	24	0.000284862306636314	0.5352112676056338
59	BAX	23	0.000231009454715180	0.5327102803738317
60	SHH	23	0.00654696216855692	0.5428571428571428
61	PRKCD	23	0.000287494828742452	0.5428571428571428
62	GSR	22	0.0367964724965927	0.5377358490566038
63	XDH	22	0.0002006638547956720	0.5454545454545455
64	PIK3CG	22	0.0002839219270470160	0.5352112676056338
65	ELANE	22	0.0010506179052726012	0.5302325581395348
66	CTSD	21	0.0005684772906238320	0.5302325581395348
67	IKBKG	21	0.0001783044818151660	0.5327102803738317
68	IRAK1	20	0.000081393127336388	0.5253456221198157
69	GZMB	19	0.000170478207886586	0.5229357798165137
70	CTSL	19	0.000322733468731373	0.5158371040723981
71	COL18A1	19	0.06	0.5022026431718062
72	TRPV1	18	0.025691870607554096	0.5277777777777778
73	MMP12	18	0.00026215399430002	0.5
74	SCD	17	0.003002430507040658	0.5112107623318386
75	NR1H3	17	0.0011314549383663025	0.5112107623318386
76	HSPA1A	17	0.000990853125807501	0.5205479452054794
77	CYP27B1	17	0.0037820763475222966	0.5229357798165137
78	TYR	16	0.001484197320424117	0.5205479452054794
79	PRF1	16	0.0000541060755940471	0.5135135135135135
80	PLA2G4A	15	0.0001411378830854180	0.5066666666666667
81	MMP10	15	0.0002723141165859370	0.5066666666666667
82	ACACA	14	0.002388434408206933	0.5066666666666667
83	MIF	14	0.0	0.5089285714285715
84	ALOX5	14	0.000107	0.504424778761062
85	RARB	14	0.0010418449653374698	0.5089285714285715
86	MITF	13	0.0006185502243276750	0.5
87	MMP8	13	0.000216598660961366	0.47500000000000003
88	BAD	12	0.0000070570634147718	0.4892703862660944
89	RPS6KA3	12	0.0	0.5
90	RXRB	12	0.000784	0.44357976653696496

91	SERPINH1	11	0.0005790779043871540	0.5
92	FGFR3	11	0.0000616546323842375	0.49781659388646293
93	NR1H2	11	0.000203	0.4710743801652893
94	GPER1	10	0.0000116441546343735	0.49781659388646293
95	PSMC4	10	0.0002821495442716860	0.49565217391304345
96	CYP1B1	10	0.0013995592482075726	0.5
97	RARG	9	0.000373	0.4672131147540984
98	ODC1	8	0.0001987399797701210	0.49137931034482757
99	HSF1	8	0.000529	0.4810126582278481
100	DUSP16	6	0.0	0.4505928853754941
101	DHCR7	5	0.000129	0.3864406779661017
102	HSD11B1	5	0.000673	0.46341463414634143
103	ACP1	4	0.0017536508171710648	0.42537313432835816
104	MC1R	4	0.0	0.46153846153846156
105	HSD17B2	4	0.000309	0.41758241758241754
106	XPA	4	0.000193	0.4653061224489796
107	HAGH	3	0.0	0.35403726708074534
108	GLO1	3	0.0	0.35403726708074534
109	RNASE1	3	0.0	0.44357976653696496
110	ERCC4	3	0.000537	0.45783132530120485
111	F2RL1	3	0.000304	0.41911764705882354
112	ORAI1	2	0.0	0.4014084507042253
113	HRH1	2	0.0	0.44357976653696496
114	ABCC9	1	0.0	1.0
115	KCNJ5	1	0.0	1.0
116	CALCA	1	0.0	0.3465045592705167
117	GLB1	1	0.0	0.43018867924528303

Table S6.1 GO Biological Processes

No	Category	Description	logP
1	GO Biological Processes	response to hormone	-45
2	GO Biological Processes	cellular response to lipid	-36
3	GO Biological Processes	cellular response to hormone stimulus	-31
4	GO Biological Processes	response to peptide	-31
5	GO Biological Processes	cellular response to abiotic stimulus	-30
6	GO Biological Processes	cellular response to environmental stimulus	-30
7	GO Biological Processes	cellular response to organic cyclic compound	-29
8	GO Biological Processes	cellular response to nitrogen compound	-28
9	GO Biological Processes	cellular response to organonitrogen compound	-28
10	GO Biological Processes	response to radiation	-27
11	GO Biological Processes	response to UV	-27
12	GO Biological Processes	response to lipopolysaccharide	-26
13	GO Biological Processes	response to molecule of bacterial origin	-26
14	GO Biological Processes	response to light stimulus	-26
15	GO Biological Processes	regulation of cellular response to stress	-25
16	GO Biological Processes	inflammatory response	-24
17	GO Biological Processes	positive regulation of cell migration	-24
18	GO Biological Processes	leukocyte differentiation	-24
19	GO Biological Processes	cellular response to chemical stress	-24
20	GO Biological Processes	gland development	-24
21	GO Biological Processes	regulation of defense response	-24
22	GO Biological Processes	positive regulation of cell motility	-24
23	GO Biological Processes	response to inorganic substance	-24
24	GO Biological Processes	response to steroid hormone	-24
25	GO Biological Processes	response to reactive oxygen species	-23
26	GO Biological Processes	positive regulation of locomotion	-23
27	GO Biological Processes	positive regulation of cell death	-23
28	GO Biological Processes	response to decreased oxygen levels	-23
29	GO Biological Processes	positive regulation of programmed cell death	-23
30	GO Biological Processes	positive regulation of phosphorylation	-23
31	GO Biological Processes	intracellular receptor signaling pathway	-23
32	GO Biological Processes	negative regulation of cell differentiation	-23
33	GO Biological Processes	response to oxygen levels	-22
34	GO Biological Processes	response to hypoxia	-22
35	GO Biological Processes	response to oxidative stress	-22
36	GO Biological Processes	hemopoiesis	-22
37	GO Biological Processes	response to tumor necrosis factor	-22
38	GO Biological Processes	response to estradiol	-22
39	GO Biological Processes	positive regulation of protein phosphorylation	-21
40	GO Biological Processes	regulation of proteolysis	-21
41	GO Biological Processes	cellular response to reactive oxygen species	-21
42	GO Biological Processes	cellular response to oxidative stress	-21
43	GO Biological Processes	positive regulation of apoptotic process	-21
44	GO Biological Processes	regulation of miRNA metabolic process	-21
45	GO Biological Processes	collagen metabolic process	-21
46	GO Biological Processes	cell population proliferation	-20
47	GO Biological Processes	regulation of smooth muscle cell proliferation	-20
48	GO Biological Processes	cellular response to UV	-20
49	GO Biological Processes	regulation of miRNA transcription	-20
50	GO Biological Processes	cellular response to radiation	-20
51	GO Biological Processes	response to mechanical stimulus	-20
52	GO Biological Processes	myeloid leukocyte differentiation	-20
53	GO Biological Processes	cellular response to cytokine stimulus	-20
54	GO Biological Processes	regulation of establishment of protein	-20
55	GO Biological Processes	response to peptide hormone	-20
56	GO Biological Processes	collagen catabolic process	-20
57	GO Biological Processes	regulation of MAPK cascade	-19
58	GO Biological Processes	regulation of apoptotic signaling pathway	-19
59	GO Biological Processes	response to bacterium	-19
60	GO Biological Processes	negative regulation of intracellular signal	-19
61	GO Biological Processes	positive regulation of hydrolase activity	-19
62	GO Biological Processes	regulation of protein transport	-19
63	GO Biological Processes	cellular response to biotic stimulus	-19
64	GO Biological Processes	cellular response to lipopolysaccharide	-19
65	GO Biological Processes	regulation of DNA-binding transcription factor	-19
66	GO Biological Processes	positive regulation of protein localization	-19
67	GO Biological Processes	response to nutrient levels	-19
68	GO Biological Processes	positive regulation of protein transport	-19
69	GO Biological Processes	cellular response to light stimulus	-19
70	GO Biological Processes	regulation of reactive oxygen species metabolic	-18
71	GO Biological Processes	cellular response to molecule of bacterial origin	-18
72	GO Biological Processes	positive regulation of cytokine production	-18
73	GO Biological Processes	positive regulation of establishment of protein	-18
74	GO Biological Processes	response to extracellular stimulus	-18
75	GO Biological Processes	myeloid cell differentiation	-18
76	GO Biological Processes	positive regulation of smooth muscle cell proliferation	-18
77	GO Biological Processes	hormone-mediated signaling pathway	-18
78	GO Biological Processes	positive regulation of transferase activity	-18
79	GO Biological Processes	tube morphogenesis	-17
80	GO Biological Processes	regulation of lipid metabolic process	-17
81	GO Biological Processes	regulation of hemopoiesis	-17
82	GO Biological Processes	regulation of myeloid cell differentiation	-17
83	GO Biological Processes	positive regulation of proteolysis	-17
84	GO Biological Processes	cellular response to peptide	-17
85	GO Biological Processes	cellular response to decreased oxygen levels	-17
86	GO Biological Processes	regulation of inflammatory response	-17
87	GO Biological Processes	regulation of lipid localization	-17
88	GO Biological Processes	cellular response to tumor necrosis factor	-17
89	GO Biological Processes	extracellular matrix disassembly	-17
90	GO Biological Processes	cellular response to cadmium ion	-17
91	GO Biological Processes	regulation of kinase activity	-17
92	GO Biological Processes	cellular response to inorganic substance	-17
93	GO Biological Processes	response to growth factor	-17
94	GO Biological Processes	cellular response to oxygen levels	-16
95	GO Biological Processes	cellular response to hypoxia	-16
96	GO Biological Processes	apoptotic signaling pathway	-16
97	GO Biological Processes	cellular response to growth factor stimulus	-16
98	GO Biological Processes	negative regulation of cell population	-16
99	GO Biological Processes	response to metal ion	-16
100	GO Biological Processes	positive regulation of kinase activity	-16
101	GO Biological Processes	heart development	-16

Table S6.2 GO Cellular Components

No	Category	Description	logP
1	GO Cellular Components	extracellular matrix	-13
2	GO Cellular Components	external encapsulating structure	-13
3	GO Cellular Components	transcription regulator complex	-12
4	GO Cellular Components	membrane raft	-11
5	GO Cellular Components	membrane microdomain	-11
6	GO Cellular Components	RNA polymerase II transcription regulator complex	-9.7
7	GO Cellular Components	perinuclear region of cytoplasm	-9.6
8	GO Cellular Components	vesicle lumen	-9.5
9	GO Cellular Components	ficolin-1-rich granule lumen	-9
10	GO Cellular Components	euchromatin	-8.6
11	GO Cellular Components	secretory granule lumen	-8.5
12	GO Cellular Components	cytoplasmic vesicle lumen	-8.5
13	GO Cellular Components	ficolin-1-rich granule	-7.5
14	GO Cellular Components	collagen-containing extracellular matrix	-7.2
15	GO Cellular Components	transcription repressor complex	-6.3
16	GO Cellular Components	nuclear envelope	-5.6
17	GO Cellular Components	organelle outer membrane	-5.5
18	GO Cellular Components	outer membrane	-5.4
19	GO Cellular Components	melanosome	-5.4
20	GO Cellular Components	pigment granule	-5.4
21	GO Cellular Components	plasma membrane raft	-5.4
22	GO Cellular Components	vacuolar lumen	-5.4
23	GO Cellular Components	cell-substrate junction	-5.3
24	GO Cellular Components	Bcl-2 family protein complex	-5.2
25	GO Cellular Components	endosome lumen	-4.9
26	GO Cellular Components	caveola	-4.8
27	GO Cellular Components	lytic vacuole	-4.6
28	GO Cellular Components	lysosome	-4.6
29	GO Cellular Components	endoplasmic reticulum lumen	-4.6
30	GO Cellular Components	receptor complex	-4.5
31	GO Cellular Components	pseudopodium	-4.4
32	GO Cellular Components	specific granule lumen	-4.1
33	GO Cellular Components	mitochondrial outer membrane	-3.8
34	GO Cellular Components	endolysosome	-3.8
35	GO Cellular Components	heterochromatin	-3.7
36	GO Cellular Components	azurophil granule lumen	-3.4
37	GO Cellular Components	lysosomal lumen	-3.3
38	GO Cellular Components	PML body	-3.2
39	GO Cellular Components	transferase complex, transferring phosphorus-containing groups	-3
40	GO Cellular Components	cell leading edge	-3
41	GO Cellular Components	spindle	-3
42	GO Cellular Components	tertiary granule lumen	-2.9
43	GO Cellular Components	nuclear membrane	-2.9
44	GO Cellular Components	serine/threonine protein kinase complex	-2.9
45	GO Cellular Components	plasma membrane protein complex	-2.8
46	GO Cellular Components	protein kinase complex	-2.7
47	GO Cellular Components	dendrite	-2.7
48	GO Cellular Components	dendritic tree	-2.7
49	GO Cellular Components	azurophil granule	-2.6
50	GO Cellular Components	primary lysosome	-2.6
51	GO Cellular Components	side of membrane	-2.5
52	GO Cellular Components	specific granule	-2.5
53	GO Cellular Components	spindle pole	-2.4
54	GO Cellular Components	dendritic spine	-2.4
55	GO Cellular Components	glutamatergic synapse	-2.4
56	GO Cellular Components	neuron spine	-2.4
57	GO Cellular Components	leading edge membrane	-2.3
58	GO Cellular Components	mitotic spindle	-2.3
59	GO Cellular Components	external side of plasma membrane	-2.3
60	GO Cellular Components	early endosome	-2.3
61	GO Cellular Components	mitochondrial membrane	-2.2
62	GO Cellular Components	endocytic vesicle	-2
63	GO Cellular Components	late endosome	-2.4
64	GO Cellular Components	cell-cell junction	-2.3
65	GO Cellular Components	lamellipodium	-2
66	GO Cellular Components	postsynapse	-3.3
67	GO Cellular Components	cell cortex	-3.1

Table S6.3 GO Molecular Functions

No	Category	Description	logP
1	GO Molecular Functions	nuclear receptor activity	-21
2	GO Molecular Functions	ligand-activated transcription factor activity	-21
3	GO Molecular Functions	transcription factor binding	-19
4	GO Molecular Functions	RNA polymerase II-specific DNA-binding transcription factor binding	-18
5	GO Molecular Functions	DNA-binding transcription factor binding	-16
6	GO Molecular Functions	transcription coregulator binding	-16
7	GO Molecular Functions	protein kinase binding	-15
8	GO Molecular Functions	kinase binding	-15
9	GO Molecular Functions	endopeptidase activity	-15
10	GO Molecular Functions	chromatin binding	-14
11	GO Molecular Functions	protein domain specific binding	-14
12	GO Molecular Functions	peptidase activity	-12
13	GO Molecular Functions	serine-type endopeptidase activity	-12
14	GO Molecular Functions	nuclear steroid receptor activity	-11
15	GO Molecular Functions	phosphatase binding	-11
16	GO Molecular Functions	serine-type peptidase activity	-11
17	GO Molecular Functions	serine hydrolase activity	-11
18	GO Molecular Functions	metalloendopeptidase activity	-11
19	GO Molecular Functions	collagen binding	-9.9
20	GO Molecular Functions	DNA-binding transcription activator activity, RNA polymerase II-specific	-9.6
21	GO Molecular Functions	DNA-binding transcription activator activity	-9.6
22	GO Molecular Functions	protein kinase activity	-9.5
23	GO Molecular Functions	protein serine/threonine kinase activity	-9.1
24	GO Molecular Functions	general transcription initiation factor binding	-9
25	GO Molecular Functions	ubiquitin protein ligase binding	-8.8
26	GO Molecular Functions	metallopeptidase activity	-8.7
27	GO Molecular Functions	protein phosphatase binding	-8.5
28	GO Molecular Functions	ubiquitin-like protein ligase binding	-8.5
29	GO Molecular Functions	phosphotransferase activity, alcohol group as acceptor	-8.4
30	GO Molecular Functions	kinase activity	-8
31	GO Molecular Functions	transcription coactivator binding	-7.9
32	GO Molecular Functions	nuclear receptor binding	-7.3
33	GO Molecular Functions	protease binding	-7.3
34	GO Molecular Functions	protein heterodimerization activity	-7.2
35	GO Molecular Functions	protein serine kinase activity	-7
36	GO Molecular Functions	promoter-specific chromatin binding	-6.9
37	GO Molecular Functions	nuclear estrogen receptor activity	-6.7
38	GO Molecular Functions	MAP kinase activity	-6.5
39	GO Molecular Functions	protein homodimerization activity	-6.4
40	GO Molecular Functions	cysteine-type endopeptidase activity involved in apoptotic signaling pathway	-6.3
41	GO Molecular Functions	protein serine/threonine/tyrosine kinase	-6.2
42	GO Molecular Functions	cytokine receptor binding	-6.1
43	GO Molecular Functions	retinoic acid-responsive element binding	-6
44	GO Molecular Functions	nitric-oxide synthase regulator activity	-5.8
45	GO Molecular Functions	steroid binding	-5.7
46	GO Molecular Functions	RNA polymerase II general transcription initiation factor binding	-5.6
47	GO Molecular Functions	DNA-binding transcription repressor activity	-5.6
48	GO Molecular Functions	enzyme activator activity	-5.4
49	GO Molecular Functions	cysteine-type endopeptidase activity	-5.3
50	GO Molecular Functions	chromatin DNA binding	-5.3
51	GO Molecular Functions	disordered domain specific binding	-5.2
52	GO Molecular Functions	histone deacetylase binding	-5.1
53	GO Molecular Functions	estrogen response element binding	-5.1
54	GO Molecular Functions	channel activator activity	-5.1
55	GO Molecular Functions	14-3-3 protein binding	-5.1
56	GO Molecular Functions	SMAD binding	-5
57	GO Molecular Functions	cysteine-type endopeptidase activity involved in apoptotic process	-5
58	GO Molecular Functions	hormone binding	-4.8
59	GO Molecular Functions	core promoter sequence-specific DNA binding	-4.8
60	GO Molecular Functions	oxidoreductase activity	-4.7
61	GO Molecular Functions	nuclear retinoid X receptor binding	-4.7
62	GO Molecular Functions	transcription corepressor binding	-4.6
63	GO Molecular Functions	phosphoprotein binding	-4.6
64	GO Molecular Functions	MAP kinase kinase activity	-4.4
65	GO Molecular Functions	signaling receptor regulator activity	-4.3
66	GO Molecular Functions	cysteine-type peptidase activity	-4.2
67	GO Molecular Functions	basal transcription machinery binding	-4.1
68	GO Molecular Functions	basal RNA polymerase II transcription machinery binding	-4.1
69	GO Molecular Functions	R-SMAD binding	-4
70	GO Molecular Functions	nuclear retinoic acid receptor binding	-4
71	GO Molecular Functions	p53 binding	-4
72	GO Molecular Functions	heat shock protein binding	-3.9
73	GO Molecular Functions	amide binding	-3.9
74	GO Molecular Functions	signaling receptor activator activity	-3.9
75	GO Molecular Functions	mitogen-activated protein kinase binding	-3.8
76	GO Molecular Functions	DNA-binding transcription repressor activity, RNA polymerase II-specific	-3.8
77	GO Molecular Functions	molecular function activator activity	-3.8
78	GO Molecular Functions	fibronectin binding	-3.7
79	GO Molecular Functions	NF-kappaB binding	-3.7
80	GO Molecular Functions	cell adhesion molecule binding	-3.6
81	GO Molecular Functions	monocarboxylic acid binding	-3.6
82	GO Molecular Functions	integrin binding	-3.6
83	GO Molecular Functions	ATPase binding	-3.5
84	GO Molecular Functions	actinin binding	-3.5
85	GO Molecular Functions	proteoglycan binding	-3.5
86	GO Molecular Functions	cysteine-type endopeptidase regulator activity involved in apoptotic process	-3.3
87	GO Molecular Functions	oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen	-3.2
88	GO Molecular Functions	receptor ligand activity	-3.2
89	GO Molecular Functions	phosphotyrosine residue binding	-3.1
90	GO Molecular Functions	transcription corepressor activity	-3.1
91	GO Molecular Functions	tumor necrosis factor receptor superfamily binding	-3.1
92	GO Molecular Functions	calmodulin binding	-3
93	GO Molecular Functions	carboxylic acid binding	-3
94	GO Molecular Functions	peptidase activator activity	-3
95	GO Molecular Functions	NADP binding	-3
96	GO Molecular Functions	protein tyrosine kinase binding	-3
97	GO Molecular Functions	peptide binding	-2.9
98	GO Molecular Functions	organic acid binding	-2.9
99	GO Molecular Functions	protein phosphorylated amino acid binding	-2.9
100	GO Molecular Functions	E-box binding	-2.9
101	GO Molecular Functions	protein tyrosine kinase activity	-2.8

102	GO Biological Processes	positive regulation of MAPK cascade	−16
103	GO Biological Processes	extracellular matrix organization	−16
104	GO Biological Processes	extracellular structure organization	−16
105	GO Biological Processes	external encapsulating structure organization	−16
106	GO Biological Processes	blood vessel development	−15
107	GO Biological Processes	response to wounding	−15
108	GO Biological Processes	positive regulation of miRNA metabolic process	−15
109	GO Biological Processes	lipopolysaccharide-mediated signaling pathway	−15
110	GO Biological Processes	negative regulation of apoptotic signaling	−15
111	GO Biological Processes	angiogenesis	−15
112	GO Biological Processes	positive regulation of small molecule metabolic	−15
113	GO Biological Processes	regulation of cysteine-type endopeptidase activity involved in apoptotic process	−15
114	GO Biological Processes	regulation of small molecule metabolic process	−15
115	GO Biological Processes	regulation of hormone levels	−15
116	GO Biological Processes	regulation of lipid transport	−15
117	GO Biological Processes	vasculature development	−15
118	GO Biological Processes	positive regulation of lipid metabolic process	−15
119	GO Biological Processes	regulation of growth	−15
120	GO Biological Processes	positive regulation of immune response	−15
121	GO Biological Processes	regulation of protein kinase activity	−15
122	GO Biological Processes	response to alcohol	−15
123	GO Biological Processes	positive regulation of protein kinase activity	−15
124	GO Biological Processes	regulation of protein serine/threonine kinase	−15
125	GO Biological Processes	cell activation	−15
126	GO Biological Processes	positive regulation of reactive oxygen species	−15
127	GO Biological Processes	blood vessel morphogenesis	−15
128	GO Biological Processes	MAPK cascade	−15
129	GO Biological Processes	positive regulation of cell development	−14
130	GO Biological Processes	gland morphogenesis	−14
131	GO Biological Processes	positive regulation of miRNA transcription	−14
132	GO Biological Processes	positive regulation of DNA-binding transcription	−14
133	GO Biological Processes	regulation of cysteine-type endopeptidase	−14
134	GO Biological Processes	leukocyte activation	−14
135	GO Biological Processes	regulation of protein secretion	−14
136	GO Biological Processes	mononuclear cell differentiation	−14
137	GO Biological Processes	response to cadmium ion	−14
138	GO Biological Processes	regulation of MAP kinase activity	−14
139	GO Biological Processes	protein phosphorylation	−14
140	GO Biological Processes	regulation of lipid biosynthetic process	−14
141	GO Biological Processes	regulation of response to biotic stimulus	−14
142	GO Biological Processes	regulation of peptidase activity	−14
143	GO Biological Processes	cellular response to steroid hormone stimulus	−14
144	GO Biological Processes	cellular response to peptide hormone stimulus	−14
145	GO Biological Processes	skeletal system development	−14
146	GO Biological Processes	regulation of neuron death	−14
147	GO Biological Processes	cellular response to metal ion	−14
148	GO Biological Processes	regulation of binding	−13
149	GO Biological Processes	response to ketone	−13
150	GO Biological Processes	regulation of cell activation	−13
151	GO Biological Processes	regulation of myeloid leukocyte differentiation	−13
152	GO Biological Processes	negative regulation of lipid localization	−13
153	GO Biological Processes	mammary gland development	−13
154	GO Biological Processes	epithelial cell proliferation	−13
155	GO Biological Processes	DNA-templated transcription	−13
156	GO Biological Processes	nucleic acid-templated transcription	−13
157	GO Biological Processes	regulation of leukocyte differentiation	−13
158	GO Biological Processes	cellular response to external stimulus	−13
159	GO Biological Processes	regulation of leukocyte activation	−13
160	GO Biological Processes	regulation of endopeptidase activity	−13
161	GO Biological Processes	RNA biosynthetic process	−13
162	GO Biological Processes	female pregnancy	−13
163	GO Biological Processes	regulation of intrinsic apoptotic signaling	−13
164	GO Biological Processes	positive regulation of response to external	−13
165	GO Biological Processes	rhythmic process	−13
166	GO Biological Processes	enzyme-linked receptor protein signaling	−13
167	GO Biological Processes	regulation of secretion	−13
168	GO Biological Processes	mRNA transcription	−13
169	GO Biological Processes	regulation of protein kinase B signaling	−13
170	GO Biological Processes	regulation of epithelial cell proliferation	−13
171	GO Biological Processes	regulation of fat cell differentiation	−13
172	GO Biological Processes	chordate embryonic development	−12
173	GO Biological Processes	positive regulation of catabolic process	−12
174	GO Biological Processes	regulation of lipid storage	−12
175	GO Biological Processes	multi-organism reproductive process	−12
176	GO Biological Processes	regulation of secretion by cell	−12
177	GO Biological Processes	retinoic acid receptor signaling pathway	−12
178	GO Biological Processes	trachea development	−12
179	GO Biological Processes	response to xenobiotic stimulus	−12
180	GO Biological Processes	positive regulation of protein serine/threonine	−12
181	GO Biological Processes	positive regulation of lipid localization	−12
182	GO Biological Processes	negative regulation of immune system process	−12
183	GO Biological Processes	regulation of mitochondrion organization	−12
184	GO Biological Processes	placenta development	−12
185	GO Biological Processes	embryonic morphogenesis	−12
186	GO Biological Processes	DNA damage response	−12
187	GO Biological Processes	embryo development ending in birth or egg	−12
188	GO Biological Processes	negative regulation of defense response	−12
189	GO Biological Processes	multi-multicellular organism process	−12
190	GO Biological Processes	positive regulation of MAP kinase activity	−12
191	GO Biological Processes	negative regulation of lipid storage	−12
192	GO Biological Processes	positive regulation of secretion	−12
193	GO Biological Processes	embryonic organ development	−12
194	GO Biological Processes	positive regulation of lipid transport	−12
195	GO Biological Processes	regulation of muscle cell differentiation	−12
196	GO Biological Processes	regulation of innate immune response	−12
197	GO Biological Processes	positive regulation of cysteine-type endopeptidase activity involved in apoptotic	−12
198	GO Biological Processes	regulation of cellular catabolic process	−12
199	GO Biological Processes	negative regulation of response to external	−12
200	GO Biological Processes	positive regulation of lipid biosynthetic process	−12
201	GO Biological Processes	negative regulation of miRNA transcription	−12
202	GO Biological Processes	wound healing	−12
203	GO Biological Processes	lymphocyte activation	−12
204	GO Biological Processes	cartilage development	−12
205	GO Biological Processes	response to temperature stimulus	−12
206	GO Biological Processes	peptidyl-amino acid modification	−12
207	GO Biological Processes	negative regulation of miRNA metabolic process	−12
208	GO Biological Processes	positive regulation of epithelial cell migration	−12
209	GO Biological Processes	regulation of protein localization to membrane	−12
210	GO Biological Processes	connective tissue development	−12
211	GO Biological Processes	negative regulation of intrinsic apoptotic	−11
212	GO Biological Processes	regulation of cell-cell adhesion	−11
213	GO Biological Processes	positive regulation of secretion by cell	−11
214	GO Biological Processes	I-kappaB kinase/NF-kappaB signaling	−11

102	GO Molecular Functions	heme binding	−2.8
103	GO Molecular Functions	cytokine activity	−2.7
104	GO Molecular Functions	protein self-association	−2.6
105	GO Molecular Functions	tetrapyrrole binding	−2.6
106	GO Molecular Functions	channel regulator activity	−2.6
107	GO Molecular Functions	iron ion binding	−2.6
108	GO Molecular Functions	transcription coregulator activity	−2.6
109	GO Molecular Functions	transmembrane receptor protein kinase	−2.5
110	GO Molecular Functions	virus receptor activity	−2.5
111	GO Molecular Functions	exogenous protein binding	−2.5
112	GO Molecular Functions	kinase regulator activity	−2.5
113	GO Molecular Functions	flavin adenine dinucleotide binding	−2.4
114	GO Molecular Functions	kinase activator activity	−2.4
115	GO Molecular Functions	protein tyrosine phosphatase activity	−2.3
116	GO Molecular Functions	ribonucleoprotein complex binding	−2.3
117	GO Molecular Functions	lyase activity	−2.2
118	GO Molecular Functions	monooxygenase activity	−2.2
119	GO Molecular Functions	cadherin binding	−2.1
120	GO Molecular Functions	histone modifying activity	−2.1
121	GO Molecular Functions	peptidase regulator activity	−2

215	GO Biological Processes	response to muscle stretch	-11
216	GO Biological Processes	positive regulation of peptidase activity	-11
217	GO Biological Processes	transcription by RNA polymerase II	-11
218	GO Biological Processes	regulation of epithelial cell migration	-11
219	GO Biological Processes	positive regulation of cysteine-type	-11
220	GO Biological Processes	response to hydrogen peroxide	-11
221	GO Biological Processes	tissue remodeling	-11
222	GO Biological Processes	leukocyte apoptotic process	-11
223	GO Biological Processes	response to UV-A	-11
224	GO Biological Processes	regulation of protein localization to plasma	-11
225	GO Biological Processes	positive regulation of DNA metabolic process	-11
226	GO Biological Processes	stress-activated MAPK cascade	-11
227	GO Biological Processes	regulation of hormone secretion	-11
228	GO Biological Processes	positive regulation of leukocyte activation	-11
229	GO Biological Processes	regulation of DNA metabolic process	-11
230	GO Biological Processes	steroid hormone mediated signaling pathway	-11
231	GO Biological Processes	stress-activated protein kinase signaling cascade	-11
232	GO Biological Processes	regulation of cytokine production involved in	-11
233	GO Biological Processes	positive regulation of cell activation	-11
234	GO Biological Processes	regulation of nervous system development	-11
235	GO Biological Processes	regulation of response to endoplasmic reticulum	-11
236	GO Biological Processes	positive regulation of defense response	-11
237	GO Biological Processes	intrinsic apoptotic signaling pathway	-11
238	GO Biological Processes	regulation of insulin secretion	-11
239	GO Biological Processes	blood circulation	-11
240	GO Biological Processes	response to amino acid	-11
241	GO Biological Processes	response to corticosteroid	-10
242	GO Biological Processes	regulation of fibroblast proliferation	-10
243	GO Biological Processes	ossification	-10
244	GO Biological Processes	positive regulation of endopeptidase activity	-10
245	GO Biological Processes	circulatory system process	-10
246	GO Biological Processes	endochondral bone morphogenesis	-10
247	GO Biological Processes	regulation of protein localization to cell	-10
248	GO Biological Processes	positive regulation of epithelial to mesenchymal	-10
249	GO Biological Processes	positive regulation of nucleocytoplasmic	-10
250	GO Biological Processes	positive regulation of organelle organization	-10
251	GO Biological Processes	regulation of response to cytokine stimulus	-10
252	GO Biological Processes	reproductive structure development	-10
253	GO Biological Processes	positive regulation of interleukin-8 production	-10
254	GO Biological Processes	stem cell differentiation	-10
255	GO Biological Processes	peptidyl-serine phosphorylation	-10
256	GO Biological Processes	reproductive system development	-10
257	GO Biological Processes	response to acid chemical	-10
258	GO Biological Processes	positive regulation of leukocyte differentiation	-10
259	GO Biological Processes	regulation of carbohydrate metabolic process	-10
260	GO Biological Processes	positive regulation of hemopoiesis	-10
261	GO Biological Processes	response to heat	-9.9
262	GO Biological Processes	cellular response to estradiol stimulus	-9.9
263	GO Biological Processes	positive regulation of protein import into	-9.9
264	GO Biological Processes	response to carbohydrate	-9.9
265	GO Biological Processes	morphogenesis of an epithelium	-9.9
266	GO Biological Processes	response to glucocorticoid	-9.8
267	GO Biological Processes	regulation of peptide hormone secretion	-9.8
268	GO Biological Processes	regulation of neuroinflammatory response	-9.8
269	GO Biological Processes	embryo implantation	-9.8
270	GO Biological Processes	regulation of stress-activated MAPK cascade	-9.8
271	GO Biological Processes	regulation of ERK1 and ERK2 cascade	-9.8
272	GO Biological Processes	regulation of peptide secretion	-9.7
273	GO Biological Processes	positive regulation of protein secretion	-9.7
274	GO Biological Processes	regulation of stress-activated protein kinase	-9.7
275	GO Biological Processes	positive regulation of nitric oxide biosynthetic	-9.7
276	GO Biological Processes	regulation of peptide transport	-9.7
277	GO Biological Processes	positive regulation of myeloid cell	-9.7
278	GO Biological Processes	positive regulation of protein-containing	-9.7
279	GO Biological Processes	regulation of osteoclast differentiation	-9.7
280	GO Biological Processes	cellular component disassembly	-9.6
281	GO Biological Processes	in utero embryonic development	-9.6
282	GO Biological Processes	response to nutrient	-9.6
283	GO Biological Processes	organ growth	-9.6
284	GO Biological Processes	peptidyl-serine modification	-9.6
285	GO Biological Processes	positive regulation of nitric oxide metabolic	-9.6
286	GO Biological Processes	regulation of gliogenesis	-9.6
287	GO Biological Processes	trachea morphogenesis	-9.5
288	GO Biological Processes	intrinsic apoptotic signaling pathway in response	-9.5
289	GO Biological Processes	cellular response to mechanical stimulus	-9.5
290	GO Biological Processes	response to hexose	-9.5
291	GO Biological Processes	prostate gland development	-9.5
292	GO Biological Processes	respiratory system development	-9.5
293	GO Biological Processes	tissue morphogenesis	-9.5
294	GO Biological Processes	extrinsic apoptotic signaling pathway	-9.5
295	GO Biological Processes	positive regulation of intracellular protein	-9.4
296	GO Biological Processes	regulation of leukocyte proliferation	-9.4
297	GO Biological Processes	mRNA transcription by RNA polymerase II	-9.4
298	GO Biological Processes	regulation of membrane permeability	-9.4
299	GO Biological Processes	positive regulation of mitochondrion	-9.4
300	GO Biological Processes	developmental growth	-9.4
301	GO Biological Processes	growth	-9.4
302	GO Biological Processes	response to antibiotic	-9.4
303	GO Biological Processes	regulation of release of cytochrome c from	-9.4
304	GO Biological Processes	response to nicotine	-9.3
305	GO Biological Processes	negative regulation of binding	-9.3
306	GO Biological Processes	response to monosaccharide	-9.3
307	GO Biological Processes	transmembrane receptor protein tyrosine kinase	-9.3
308	GO Biological Processes	response to insulin	-9.3
309	GO Biological Processes	multicellular organismal-level homeostasis	-9.2
310	GO Biological Processes	positive regulation of cholesterol efflux	-9.2
311	GO Biological Processes	regulation of cholesterol transport	-9.2
312	GO Biological Processes	regulation of sterol transport	-9.2
313	GO Biological Processes	regulation of angiogenesis	-9.2
314	GO Biological Processes	positive regulation of leukocyte proliferation	-9.2
315	GO Biological Processes	positive regulation of ERK1 and ERK2 cascade	-9.2
316	GO Biological Processes	sex differentiation	-9.2
317	GO Biological Processes	regulation of DNA binding	-9.2
318	GO Biological Processes	positive regulation of carbohydrate metabolic	-9.2
319	GO Biological Processes	regulation of cytokine-mediated signaling	-9.1
320	GO Biological Processes	positive regulation of neuron death	-9.1
321	GO Biological Processes	chondrocyte differentiation	-9.1
322	GO Biological Processes	positive regulation of muscle cell differentiation	-9.1
323	GO Biological Processes	positive regulation of epithelial cell proliferation	-9.1
324	GO Biological Processes	endochondral bone growth	-9.1
325	GO Biological Processes	regulation of vasculature development	-9.1
326	GO Biological Processes	regulation of leukocyte migration	-9
327	GO Biological Processes	skeletal system morphogenesis	-9
328	GO Biological Processes	positive regulation of vascular endothelial	-9
329	GO Biological Processes	behavior	-9

330	GO Biological Processes	positive regulation of cellular catabolic process	-9
331	GO Biological Processes	regulation of cellular response to oxidative stress	-8.9
332	GO Biological Processes	response to amyloid-beta	-8.9
333	GO Biological Processes	regulation of cholesterol efflux	-8.9
334	GO Biological Processes	epithelial cell differentiation	-8.9
335	GO Biological Processes	inflammatory response to wounding	-8.9
336	GO Biological Processes	negative regulation of macrophage derived foam	-8.9
337	GO Biological Processes	epithelial cell apoptotic process	-8.9
338	GO Biological Processes	bone growth	-8.8
339	GO Biological Processes	positive regulation of neurogenesis	-8.8
340	GO Biological Processes	regulation of leukocyte cell-cell adhesion	-8.8
341	GO Biological Processes	response to virus	-8.8
342	GO Biological Processes	positive regulation of protein localization to	-8.7
343	GO Biological Processes	leukocyte migration	-8.7
344	GO Biological Processes	negative regulation of cytokine production	-8.7
345	GO Biological Processes	T cell activation	-8.7
346	GO Biological Processes	negative regulation of cell adhesion	-8.7
347	GO Biological Processes	regulation of protein import into nucleus	-8.6
348	GO Biological Processes	regulation of macrophage derived foam cell	-8.6
349	GO Biological Processes	cartilage development involved in endochondral	-8.6
350	GO Biological Processes	regulation of response to oxidative stress	-8.6
351	GO Biological Processes	regulation of neurogenesis	-8.6
352	GO Biological Processes	regulation of peptidyl-tyrosine phosphorylation	-8.6
353	GO Biological Processes	bone development	-8.6
354	GO Biological Processes	regulation of nitric oxide biosynthetic process	-8.5
355	GO Biological Processes	regulation of protein localization to nucleus	-8.5
356	GO Biological Processes	positive regulation of apoptotic signaling	-8.5
357	GO Biological Processes	bone morphogenesis	-8.5
358	GO Biological Processes	regulation of chemokine production	-8.5
359	GO Biological Processes	regulation of striated muscle cell differentiation	-8.5
360	GO Biological Processes	regulation of mitochondrial membrane	-8.5
361	GO Biological Processes	positive regulation of growth	-8.5
362	GO Biological Processes	negative regulation of protein modification	-8.5
363	GO Biological Processes	cell fate commitment	-8.5
364	GO Biological Processes	protein catabolic process	-8.5
365	GO Biological Processes	sensory organ development	-8.4
366	GO Biological Processes	positive regulation of intracellular transport	-8.4
367	GO Biological Processes	urogenital system development	-8.4
368	GO Biological Processes	regulation of fatty acid metabolic process	-8.4
369	GO Biological Processes	gliogenesis	-8.4
370	GO Biological Processes	regulation of I-kappaB kinase/NF-kappaB	-8.4
371	GO Biological Processes	regulation of nitric oxide metabolic process	-8.4
372	GO Biological Processes	immune response-regulating signaling pathway	-8.4
373	GO Biological Processes	regulation of intracellular transport	-8.4
374	GO Biological Processes	negative regulation of inflammatory response	-8.4
375	GO Biological Processes	positive regulation of protein localization to	-8.3
376	GO Biological Processes	regulation of interleukin-8 production	-8.3
377	GO Biological Processes	cellular response to ketone	-8.3
378	GO Biological Processes	regulation of protein-containing complex	-8.3
379	GO Biological Processes	regulation of system process	-8.3
380	GO Biological Processes	negative regulation of neuron death	-8.3
381	GO Biological Processes	transmembrane receptor protein serine/threonine kinase signaling pathway	-8.3
382	GO Biological Processes	cellular response to hydrogen peroxide	-8.3
383	GO Biological Processes	biological process involved in symbiotic	-8.3
384	GO Biological Processes	positive regulation of sterol transport	-8.2
385	GO Biological Processes	positive regulation of cholesterol transport	-8.2
386	GO Biological Processes	positive regulation of cyclase activity	-8.2
387	GO Biological Processes	regulation of cell growth	-8.2
388	GO Biological Processes	positive regulation of cellular component	-8.2
389	GO Biological Processes	negative regulation of phosphate metabolic	-8.2
390	GO Biological Processes	vascular endothelial growth factor production	-8.2
391	GO Biological Processes	trachea formation	-8.2
392	GO Biological Processes	positive regulation of leukocyte cell-cell	-8.2
393	GO Biological Processes	negative regulation of phosphorus metabolic	-8.2
394	GO Biological Processes	animal organ formation	-8.2
395	GO Biological Processes	glucose homeostasis	-8.2
396	GO Biological Processes	monocarboxylic acid metabolic process	-8.2
397	GO Biological Processes	carbohydrate homeostasis	-8.2
398	GO Biological Processes	growth plate cartilage development	-8.1
399	GO Biological Processes	regulation of nucleocytoplasmic transport	-8.1
400	GO Biological Processes	response to retinoic acid	-8.1
401	GO Biological Processes	regulation of body fluid levels	-8.1
402	GO Biological Processes	regulation of macroautophagy	-8.1
403	GO Biological Processes	positive regulation of fatty acid metabolic	-8.1
404	GO Biological Processes	response to activity	-8.1
405	GO Biological Processes	positive regulation of chemokine production	-8.1
406	GO Biological Processes	regulation of extrinsic apoptotic signaling	-8.1
407	GO Biological Processes	regulation of oxidative stress-induced cell death	-8.1
408	GO Biological Processes	response to estrogen	-8.1
409	GO Biological Processes	regulation of epithelial cell apoptotic process	-8.1
410	GO Biological Processes	regulation of epithelial to mesenchymal	-8
411	GO Biological Processes	lymphocyte differentiation	-8
412	GO Biological Processes	negative regulation of cellular component	-8
413	GO Biological Processes	endocytosis	-8
414	GO Biological Processes	positive regulation of nervous system	-8
415	GO Biological Processes	regulation of phosphatidylinositol 3-kinase	-8
416	GO Biological Processes	regulation of circadian rhythm	-7.9
417	GO Biological Processes	endodermal cell differentiation	-7.9
418	GO Biological Processes	regulation of intracellular protein transport	-7.9
419	GO Biological Processes	regulation of neuron apoptotic process	-7.9
420	GO Biological Processes	activation of cysteine-type endopeptidase activity involved in apoptotic process	-7.9
421	GO Biological Processes	cellular response to nutrient levels	-7.9
422	GO Biological Processes	male sex differentiation	-7.9
423	GO Biological Processes	gonad development	-7.9
424	GO Biological Processes	gastrulation	-7.9
425	GO Biological Processes	positive regulation of protein kinase B signaling	-7.8
426	GO Biological Processes	cellular response to starvation	-7.8
427	GO Biological Processes	regulation of glucose transmembrane transport	-7.8
428	GO Biological Processes	regulation of ossification	-7.8
429	GO Biological Processes	regulation of endothelial cell migration	-7.8
430	GO Biological Processes	development of primary sexual characteristics	-7.8
431	GO Biological Processes	immune response-activating signaling pathway	-7.8
432	GO Biological Processes	eye development	-7.8
433	GO Biological Processes	negative regulation of catalytic activity	-7.8
434	GO Biological Processes	regulation of cytokine production involved in	-7.8
435	GO Biological Processes	visual system development	-7.7
436	GO Biological Processes	regulation of organic acid transport	-7.7
437	GO Biological Processes	prostate gland epithelium morphogenesis	-7.7
438	GO Biological Processes	regulation of myelination	-7.7
439	GO Biological Processes	sensory system development	-7.6
440	GO Biological Processes	cellular response to amino acid stimulus	-7.6
441	GO Biological Processes	epithelial tube morphogenesis	-7.6
442	GO Biological Processes	innate immune response	-7.6

443	GO Biological Processes	positive regulation of peptidyl-tyrosine	-7.6
444	GO Biological Processes	lung development	-7.6
445	GO Biological Processes	positive regulation of phosphatidylinositol 3-	-7.5
446	GO Biological Processes	immune effector process	-7.5
447	GO Biological Processes	cognition	-7.5
448	GO Biological Processes	positive regulation of leukocyte adhesion to	-7.5
449	GO Biological Processes	prostate gland morphogenesis	-7.5
450	GO Biological Processes	fatty acid metabolic process	-7.5
451	GO Biological Processes	positive regulation of cell-cell adhesion	-7.5
452	GO Biological Processes	respiratory tube development	-7.5
453	GO Biological Processes	regulation of blood pressure	-7.5
454	GO Biological Processes	negative regulation of proteolysis	-7.5
455	GO Biological Processes	negative regulation of growth	-7.4
456	GO Biological Processes	negative regulation of cholesterol storage	-7.4
457	GO Biological Processes	B cell activation	-7.4
458	GO Biological Processes	cellular response to virus	-7.4
459	GO Biological Processes	T cell lineage commitment	-7.4
460	GO Biological Processes	positive regulation of lymphocyte activation	-7.4
461	GO Biological Processes	regulation of developmental growth	-7.4
462	GO Biological Processes	regulation of wound healing	-7.4
463	GO Biological Processes	cellular response to extracellular stimulus	-7.4
464	GO Biological Processes	positive regulation of fibroblast proliferation	-7.3
465	GO Biological Processes	endoderm formation	-7.3
466	GO Biological Processes	camera-type eye development	-7.3
467	GO Biological Processes	regulation of anatomical structure size	-7.3
468	GO Biological Processes	positive regulation of I-kappaB kinase/NF-	-7.3
469	GO Biological Processes	positive regulation of release of cytochrome c	-7.3
470	GO Biological Processes	negative regulation of protein phosphorylation	-7.3
471	GO Biological Processes	positive regulation of epithelial cell proliferation involved in prostate gland development	-7.3
472	GO Biological Processes	cellular response to acid chemical	-7.3
473	GO Biological Processes	regulation of lymphocyte activation	-7.3
474	GO Biological Processes	regulation of JNK cascade	-7.3
475	GO Biological Processes	muscle structure development	-7.3
476	GO Biological Processes	immune response-regulating cell surface	-7.3
477	GO Biological Processes	regulation of cellular ketone metabolic process	-7.3
478	GO Biological Processes	regulation of peptidyl-serine phosphorylation	-7.3
479	GO Biological Processes	cellular response to UV-A	-7.2
480	GO Biological Processes	positive regulation of acute inflammatory	-7.2
481	GO Biological Processes	response to ionizing radiation	-7.2
482	GO Biological Processes	positive regulation of neuron apoptotic process	-7.2
483	GO Biological Processes	JNK cascade	-7.2
484	GO Biological Processes	regulation of protein binding	-7.2
485	GO Biological Processes	response to purine-containing compound	-7.2
486	GO Biological Processes	negative regulation of catabolic process	-7.2
487	GO Biological Processes	negative regulation of protein binding	-7.2
488	GO Biological Processes	positive regulation of immune effector process	-7.2
489	GO Biological Processes	regulation of tube diameter	-7.2
490	GO Biological Processes	blood vessel diameter maintenance	-7.2
491	GO Biological Processes	regulation of monooxygenase activity	-7.2
492	GO Biological Processes	glandular epithelial cell development	-7.2
493	GO Biological Processes	regulation of tube size	-7.1
494	GO Biological Processes	regulation of vascular associated smooth muscle	-7.1
495	GO Biological Processes	glial cell differentiation	-7.1
496	GO Biological Processes	leukocyte proliferation	-7.1
497	GO Biological Processes	female gonad development	-7.1
498	GO Biological Processes	hematopoietic or lymphoid organ development	-7.1
499	GO Biological Processes	mammary gland epithelium development	-7.1
500	GO Biological Processes	positive regulation of leukocyte migration	-7.1
501	GO Biological Processes	regulation of autophagy	-7.1
502	GO Biological Processes	muscle cell differentiation	-7.1
503	GO Biological Processes	telencephalon development	-7.1
504	GO Biological Processes	modulation of process of another organism	-7.1
505	GO Biological Processes	response to starvation	-7.1
506	GO Biological Processes	regulation of glucose import	-7.1
507	GO Biological Processes	regulation of vascular endothelial growth factor	-7.1
508	GO Biological Processes	learning or memory	-7.1
509	GO Biological Processes	response to glucose	-7.1
510	GO Biological Processes	negative regulation of extrinsic apoptotic	-7.1
511	GO Biological Processes	positive regulation of interleukin-6 production	-7
512	GO Biological Processes	regulation of cyclase activity	-7
513	GO Biological Processes	positive regulation of protein localization to	-7
514	GO Biological Processes	striated muscle cell differentiation	-7
515	GO Biological Processes	insulin-like growth factor receptor signaling	-7
516	GO Biological Processes	positive regulation of response to biotic stimulus	-7
517	GO Biological Processes	development of primary female sexual	-7
518	GO Biological Processes	transforming growth factor beta receptor	-7
519	GO Biological Processes	regulation of blood vessel endothelial cell	-7
520	GO Biological Processes	positive regulation of myeloid leukocyte	-7
521	GO Biological Processes	myeloid leukocyte activation	-7
522	GO Biological Processes	regulation of carbohydrate biosynthetic process	-7
523	GO Biological Processes	maternal process involved in female pregnancy	-6.9
524	GO Biological Processes	regulation of lipid catabolic process	-6.9
525	GO Biological Processes	negative regulation of phosphorylation	-6.9
526	GO Biological Processes	regulation of protein catabolic process	-6.9
527	GO Biological Processes	positive regulation of inflammatory response	-6.9
528	GO Biological Processes	negative regulation of cell development	-6.9
529	GO Biological Processes	activation of immune response	-6.9
530	GO Biological Processes	cellular response to antibiotic	-6.9
531	GO Biological Processes	regulation of macrophage activation	-6.9
532	GO Biological Processes	regulation of fatty acid transport	-6.9
533	GO Biological Processes	positive regulation of peptidyl-serine	-6.8
534	GO Biological Processes	hexose metabolic process	-6.8
535	GO Biological Processes	positive regulation of NF-kappaB transcription	-6.8
536	GO Biological Processes	cytokine-mediated signaling pathway	-6.8
537	GO Biological Processes	glandular epithelial cell differentiation	-6.8
538	GO Biological Processes	response to angiotensin	-6.8
539	GO Biological Processes	response to fluid shear stress	-6.8
540	GO Biological Processes	astrocyte differentiation	-6.8
541	GO Biological Processes	negative regulation of cell cycle	-6.8
542	GO Biological Processes	response to salt	-6.7
543	GO Biological Processes	peptidyl-threonine phosphorylation	-6.7
544	GO Biological Processes	negative regulation of signal transduction in	-6.7
545	GO Biological Processes	negative regulation of extrinsic apoptotic signaling pathway in absence of ligand	-6.7
546	GO Biological Processes	positive regulation of protein localization to cell	-6.7
547	GO Biological Processes	positive regulation of NIK/NF-kappaB signaling	-6.7
548	GO Biological Processes	positive regulation of gliogenesis	-6.7
549	GO Biological Processes	immune response-activating cell surface	-6.6
550	GO Biological Processes	regulation of NIK/NF-kappaB signaling	-6.6
551	GO Biological Processes	positive regulation of cell adhesion	-6.6
552	GO Biological Processes	positive regulation of amide metabolic process	-6.6
553	GO Biological Processes	fatty acid biosynthetic process	-6.6
554	GO Biological Processes	female sex differentiation	-6.6
555	GO Biological Processes	positive regulation of fat cell differentiation	-6.6

556	GO Biological Processes	regulation of response to wounding	-6.6
557	GO Biological Processes	negative regulation of protein serine/threonine	-6.6
558	GO Biological Processes	regulation of insulin receptor signaling pathway	-6.5
559	GO Biological Processes	negative regulation of lipid metabolic process	-6.5
560	GO Biological Processes	glucose metabolic process	-6.5
561	GO Biological Processes	mesenchyme development	-6.5
562	GO Biological Processes	regulation of cellular response to insulin	-6.5
563	GO Biological Processes	mitochondrial membrane organization	-6.5
564	GO Biological Processes	formation of primary germ layer	-6.5
565	GO Biological Processes	regulation of mononuclear cell proliferation	-6.5
566	GO Biological Processes	forebrain development	-6.5
567	GO Biological Processes	regulation of DNA-templated transcription in	-6.5
568	GO Biological Processes	regulation of glial cell proliferation	-6.5
569	GO Biological Processes	regulation of amide metabolic process	-6.5
570	GO Biological Processes	cellular response to ionizing radiation	-6.5
571	GO Biological Processes	positive regulation of DNA biosynthetic process	-6.5
572	GO Biological Processes	regulation of DNA biosynthetic process	-6.5
573	GO Biological Processes	T cell differentiation	-6.4
574	GO Biological Processes	positive regulation of blood vessel endothelial	-6.4
575	GO Biological Processes	cardiocyte differentiation	-6.4
576	GO Biological Processes	regulation of leukocyte adhesion to vascular	-6.4
577	GO Biological Processes	response to progesterone	-6.4
578	GO Biological Processes	regulation of protein stability	-6.4
579	GO Biological Processes	response to osmotic stress	-6.4
580	GO Biological Processes	sensory perception of pain	-6.4
581	GO Biological Processes	positive regulation of fibroblast migration	-6.4
582	GO Biological Processes	negative regulation of MAPK cascade	-6.4
583	GO Biological Processes	peptidyl-threonine modification	-6.4
584	GO Biological Processes	chemotaxis	-6.4
585	GO Biological Processes	positive regulation of innate immune response	-6.3
586	GO Biological Processes	response to ethanol	-6.3
587	GO Biological Processes	taxis	-6.3
588	GO Biological Processes	epithelial cell development	-6.3
589	GO Biological Processes	regulation of endothelial cell proliferation	-6.3
590	GO Biological Processes	endoderm development	-6.3
591	GO Biological Processes	acute inflammatory response	-6.3
592	GO Biological Processes	regulation of nitric-oxide synthase activity	-6.3
593	GO Biological Processes	columnar/cuboidal epithelial cell development	-6.3
594	GO Biological Processes	mononuclear cell proliferation	-6.3
595	GO Biological Processes	glial cell apoptotic process	-6.3
596	GO Biological Processes	positive regulation of transcription from RNA polymerase II promoter in response to hypoxia	-6.3
597	GO Biological Processes	positive regulation of transcription from RNA polymerase II promoter involved in cellular	-6.3
598	GO Biological Processes	positive regulation of neuroinflammatory	-6.3
599	GO Biological Processes	regulation of chemokine (C-X-C motif) ligand 2	-6.3
600	GO Biological Processes	regulation of cholesterol storage	-6.3
601	GO Biological Processes	regulation of mitotic cell cycle	-6.3
602	GO Biological Processes	monosaccharide metabolic process	-6.3
603	GO Biological Processes	response to organophosphorus	-6.3
604	GO Biological Processes	extrinsic apoptotic signaling pathway via death	-6.3
605	GO Biological Processes	regulation of transmembrane transport	-6.3
606	GO Biological Processes	heart morphogenesis	-6.3
607	GO Biological Processes	pallium development	-6.2
608	GO Biological Processes	negative regulation of locomotion	-6.2
609	GO Biological Processes	regulation of B cell activation	-6.2
610	GO Biological Processes	positive regulation of cytokine production	-6.2
611	GO Biological Processes	regulation of production of molecular mediator	-6.2
612	GO Biological Processes	positive regulation of endothelial cell migration	-6.2
613	GO Biological Processes	negative regulation of response to endoplasmic	-6.2
614	GO Biological Processes	mammary gland morphogenesis	-6.2
615	GO Biological Processes	regulation of macrophage migration	-6.2
616	GO Biological Processes	protein localization to nucleus	-6.2
617	GO Biological Processes	digestive tract development	-6.2
618	GO Biological Processes	negative regulation of DNA-binding	-6.2
619	GO Biological Processes	negative regulation of oxidative stress-induced intrinsic apoptotic signaling pathway	-6.2
620	GO Biological Processes	cellular response to estrogen stimulus	-6.2
621	GO Biological Processes	locomotion	-6.2
622	GO Biological Processes	positive regulation of B cell activation	-6.2
623	GO Biological Processes	regulation of cellular response to growth factor	-6.2
624	GO Biological Processes	vascular process in circulatory system	-6.1
625	GO Biological Processes	positive regulation of production of molecular mediator of immune response	-6.1
626	GO Biological Processes	negative regulation of response to biotic	-6.1
627	GO Biological Processes	lung morphogenesis	-6.1
628	GO Biological Processes	regulation of extrinsic apoptotic signaling	-6.1
629	GO Biological Processes	regulation of muscle cell apoptotic process	-6.1
630	GO Biological Processes	multicellular organism growth	-6.1
631	GO Biological Processes	CD4-positive or CD8-positive, alpha-beta T cell	-6.1
632	GO Biological Processes	positive regulation of hormone secretion	-6.1
633	GO Biological Processes	response to epidermal growth factor	-6.1
634	GO Biological Processes	genitalia development	-6.1
635	GO Biological Processes	neuroinflammatory response	-6.1
636	GO Biological Processes	regulation of muscle tissue development	-6.1
637	GO Biological Processes	cellular response to salt	-6.1
638	GO Biological Processes	negative regulation of innate immune response	-6
639	GO Biological Processes	negative regulation of cytokine-mediated	-6
640	GO Biological Processes	circadian rhythm	-6
641	GO Biological Processes	vasodilation	-6
642	GO Biological Processes	thymus development	-6
643	GO Biological Processes	zymogen activation	-6
644	GO Biological Processes	negative regulation of lipid transport	-6
645	GO Biological Processes	regulation of acute inflammatory response	-6
646	GO Biological Processes	elastin metabolic process	-6
647	GO Biological Processes	positive regulation of apoptotic DNA	-6
648	GO Biological Processes	cellular response to fluid shear stress	-6
649	GO Biological Processes	NIK/NF-kappaB signaling	-6
650	GO Biological Processes	male gonad development	-6
651	GO Biological Processes	development of primary male sexual	-5.9
652	GO Biological Processes	digestive system development	-5.9
653	GO Biological Processes	protein maturation	-5.9
654	GO Biological Processes	fatty acid transport	-5.9
655	GO Biological Processes	regulation of leukocyte apoptotic process	-5.9
656	GO Biological Processes	regulation of stem cell proliferation	-5.9
657	GO Biological Processes	cellular homeostasis	-5.9
658	GO Biological Processes	negative regulation of blood pressure	-5.9
659	GO Biological Processes	release of cytochrome c from mitochondria	-5.9
660	GO Biological Processes	regulation of nuclease activity	-5.9
661	GO Biological Processes	negative regulation of response to cytokine	-5.9
662	GO Biological Processes	protein kinase B signaling	-5.9
663	GO Biological Processes	regulation of morphogenesis of a branching	-5.9
664	GO Biological Processes	negative regulation of oxidative stress-induced	-5.9
665	GO Biological Processes	tube formation	-5.9
666	GO Biological Processes	brain development	-5.9

667	GO Biological Processes	positive regulation of mononuclear cell	-5.9
668	GO Biological Processes	negative regulation of cell migration	-5.9
669	GO Biological Processes	face development	-5.8
670	GO Biological Processes	positive regulation of vascular associated smooth muscle cell proliferation	-5.8
671	GO Biological Processes	embryonic organ morphogenesis	-5.8
672	GO Biological Processes	nitric oxide biosynthetic process	-5.8
673	GO Biological Processes	regulation of neuroblast proliferation	-5.8
674	GO Biological Processes	negative regulation of mitochondrion	-5.8
675	GO Biological Processes	ovarian follicle development	-5.8
676	GO Biological Processes	cellular response to heat	-5.8
677	GO Biological Processes	positive regulation of striated muscle cell	-5.8
678	GO Biological Processes	negative regulation of response to type II	-5.8
679	GO Biological Processes	positive regulation of macrophage proliferation	-5.8
680	GO Biological Processes	positive regulation of DNA catabolic process	-5.8
681	GO Biological Processes	positive regulation of fever generation	-5.8
682	GO Biological Processes	negative regulation of type II interferon-	-5.8
683	GO Biological Processes	wound healing involved in inflammatory	-5.8
684	GO Biological Processes	positive regulation of nuclease activity	-5.8
685	GO Biological Processes	regulation of calcidiol 1-monooxygenase activity	-5.8
686	GO Biological Processes	regeneration	-5.8
687	GO Biological Processes	positive regulation of muscle tissue	-5.7
688	GO Biological Processes	positive regulation of fatty acid biosynthetic	-5.7
689	GO Biological Processes	neuron apoptotic process	-5.7
690	GO Biological Processes	cellular response to alcohol	-5.7
691	GO Biological Processes	regulation of immune effector process	-5.7
692	GO Biological Processes	regulation of fatty acid biosynthetic process	-5.7
693	GO Biological Processes	neuroblast proliferation	-5.7
694	GO Biological Processes	negative regulation of cell motility	-5.7
695	GO Biological Processes	response to gamma radiation	-5.7
696	GO Biological Processes	phagocytosis	-5.7
697	GO Biological Processes	neuron death	-5.7
698	GO Biological Processes	biological process involved in interaction with	-5.7
699	GO Biological Processes	unsaturated fatty acid metabolic process	-5.6
700	GO Biological Processes	positive regulation of DNA binding	-5.6
701	GO Biological Processes	intracellular steroid hormone receptor signaling	-5.6
702	GO Biological Processes	lipid biosynthetic process	-5.6
703	GO Biological Processes	regulation of chemotaxis	-5.6
704	GO Biological Processes	cellular response to interleukin-1	-5.6
705	GO Biological Processes	nitric oxide metabolic process	-5.6
706	GO Biological Processes	positive regulation of macrophage migration	-5.6
707	GO Biological Processes	cellular response to transforming growth factor	-5.6
708	GO Biological Processes	mitochondrial transport	-5.6
709	GO Biological Processes	immune system development	-5.6
710	GO Biological Processes	columnar/cuboidal epithelial cell differentiation	-5.6
711	GO Biological Processes	cellular response to nicotine	-5.6
712	GO Biological Processes	regulation of endodeoxyribonuclease activity	-5.6
713	GO Biological Processes	regulation of killing of cells of another organism	-5.6
714	GO Biological Processes	chondrocyte development involved in endochondral bone morphogenesis	-5.6
715	GO Biological Processes	stress-induced premature senescence	-5.6
716	GO Biological Processes	regulation of macrophage proliferation	-5.6
717	GO Biological Processes	tissue homeostasis	-5.6
718	GO Biological Processes	anatomical structure homeostasis	-5.6
719	GO Biological Processes	positive regulation of developmental growth	-5.5
720	GO Biological Processes	regulation of signal transduction by p53 class	-5.5
721	GO Biological Processes	regulation of generation of precursor	-5.5
722	GO Biological Processes	regulation of skeletal muscle tissue development	-5.5
723	GO Biological Processes	reactive nitrogen species metabolic process	-5.5
724	GO Biological Processes	salivary gland morphogenesis	-5.5
725	GO Biological Processes	negative regulation of lipid catabolic process	-5.5
726	GO Biological Processes	monocarboxylic acid biosynthetic process	-5.5
727	GO Biological Processes	regulation of epithelial cell differentiation	-5.5
728	GO Biological Processes	regulation of lymphocyte proliferation	-5.5
729	GO Biological Processes	apoptotic mitochondrial changes	-5.5
730	GO Biological Processes	negative regulation of fat cell differentiation	-5.5
731	GO Biological Processes	response to transforming growth factor beta	-5.5
732	GO Biological Processes	cellular response to angiotensin	-5.5
733	GO Biological Processes	regulation of response to nutrient levels	-5.5
734	GO Biological Processes	cytokine production	-5.5
735	GO Biological Processes	regulation of macrophage chemotaxis	-5.5
736	GO Biological Processes	regulation of response to extracellular stimulus	-5.5
737	GO Biological Processes	embryonic hindlimb morphogenesis	-5.5
738	GO Biological Processes	regulation of oxidoreductase activity	-5.5
739	GO Biological Processes	regulation of cell killing	-5.4
740	GO Biological Processes	mesenchymal cell differentiation	-5.4
741	GO Biological Processes	positive regulation of interleukin-1 beta	-5.4
742	GO Biological Processes	salivary gland development	-5.4
743	GO Biological Processes	regulation of oxidative stress-induced intrinsic apoptotic signaling pathway	-5.4
744	GO Biological Processes	nucleocytoplasmic transport	-5.4
745	GO Biological Processes	nuclear transport	-5.4
746	GO Biological Processes	viral process	-5.4
747	GO Biological Processes	regulation of cell cycle process	-5.4
748	GO Biological Processes	positive regulation of chemokine (C-X-C motif)	-5.4
749	GO Biological Processes	regulation of fever generation	-5.4
750	GO Biological Processes	positive regulation of heat generation	-5.4
751	GO Biological Processes	positive regulation of binding	-5.4
752	GO Biological Processes	protein import into nucleus	-5.4
753	GO Biological Processes	regulation of morphogenesis of an epithelium	-5.4
754	GO Biological Processes	negative regulation of cysteine-type endopeptidase activity involved in apoptotic	-5.4
755	GO Biological Processes	negative regulation of epithelial cell proliferation	-5.3
756	GO Biological Processes	cellular response to gamma radiation	-5.3
757	GO Biological Processes	pyroptosis	-5.3
758	GO Biological Processes	muscle tissue development	-5.3
759	GO Biological Processes	regulation of interleukin-6 production	-5.3
760	GO Biological Processes	animal organ regeneration	-5.3
761	GO Biological Processes	membrane organization	-5.3
762	GO Biological Processes	positive regulation of lipase activity	-5.3
763	GO Biological Processes	positive regulation of cytokine production involved in inflammatory response	-5.3
764	GO Biological Processes	regulation of blood circulation	-5.3
765	GO Biological Processes	positive regulation of DNA-templated	-5.3
766	GO Biological Processes	import into nucleus	-5.3
767	GO Biological Processes	gamete generation	-5.2
768	GO Biological Processes	regulation of epithelial cell proliferation involved in prostate gland development	-5.2
769	GO Biological Processes	regulation of transcription from RNA polymerase II promoter in response to hypoxia	-5.2
770	GO Biological Processes	regulation of deoxyribonuclease activity	-5.2
771	GO Biological Processes	response to cobalt ion	-5.2
772	GO Biological Processes	carbohydrate metabolic process	-5.2
773	GO Biological Processes	positive regulation of monooxygenase activity	-5.2
774	GO Biological Processes	negative regulation of cartilage development	-5.2
775	GO Biological Processes	positive T cell selection	-5.2

776	GO Biological Processes	positive regulation of vasculature development	-5.2
777	GO Biological Processes	regulation of tumor necrosis factor production	-5.2
778	GO Biological Processes	positive regulation of angiogenesis	-5.2
779	GO Biological Processes	stem cell proliferation	-5.2
780	GO Biological Processes	protein autophosphorylation	-5.2
781	GO Biological Processes	positive regulation of cytosolic calcium ion	-5.2
782	GO Biological Processes	extrinsic apoptotic signaling pathway in absence	-5.2
783	GO Biological Processes	regulation of transcription from RNA polymerase II promoter in response to stress	-5.2
784	GO Biological Processes	signal transduction in absence of ligand	-5.2
785	GO Biological Processes	regulation of cardiocyte differentiation	-5.2
786	GO Biological Processes	embryonic epithelial tube formation	-5.2
787	GO Biological Processes	lymphocyte proliferation	-5.2
788	GO Biological Processes	negative regulation of muscle cell differentiation	-5.2
789	GO Biological Processes	regulation of mitochondrial membrane potential	-5.2
790	GO Biological Processes	positive regulation of cell cycle	-5.2
791	GO Biological Processes	negative regulation of transferase activity	-5.1
792	GO Biological Processes	regulation of tumor necrosis factor superfamily	-5.1
793	GO Biological Processes	negative regulation of cell growth	-5.1
794	GO Biological Processes	regulation of superoxide metabolic process	-5.1
795	GO Biological Processes	cellular response to low-density lipoprotein	-5.1
796	GO Biological Processes	response to lipoprotein particle	-5.1
797	GO Biological Processes	response to pain	-5.1
798	GO Biological Processes	positive regulation of mitochondrial membrane	-5.1
799	GO Biological Processes	regulation of leukocyte chemotaxis	-5.1
800	GO Biological Processes	Bergmann glial cell differentiation	-5.1
801	GO Biological Processes	prostate gland growth	-5.1
802	GO Biological Processes	striated muscle tissue development	-5.1
803	GO Biological Processes	positive regulation of interleukin-1 production	-5.1
804	GO Biological Processes	endocrine system development	-5.1
805	GO Biological Processes	regulation of intrinsic apoptotic signaling pathway by p53 class mediator	-5.1
806	GO Biological Processes	hindlimb morphogenesis	-5.1
807	GO Biological Processes	protein processing	-5.1
808	GO Biological Processes	positive regulation of stress-activated MAPK	-5.1
809	GO Biological Processes	positive regulation of adaptive immune response	-5.1
810	GO Biological Processes	ovulation cycle	-5
811	GO Biological Processes	phosphatidylinositol-mediated signaling	-5
812	GO Biological Processes	ameboidal-type cell migration	-5
813	GO Biological Processes	B cell differentiation	-5
814	GO Biological Processes	TOR signaling	-5
815	GO Biological Processes	maternal placenta development	-5
816	GO Biological Processes	positive regulation of response to endoplasmic	-5
817	GO Biological Processes	epithelial tube formation	-5
818	GO Biological Processes	positive regulation of stress-activated protein	-5
819	GO Biological Processes	leukocyte activation involved in immune	-5
820	GO Biological Processes	regulation of glial cell differentiation	-5
821	GO Biological Processes	negative regulation of immune response	-5
822	GO Biological Processes	cell chemotaxis	-5
823	GO Biological Processes	response to interleukin-1	-5
824	GO Biological Processes	developmental growth involved in	-5
825	GO Biological Processes	regulation of apoptotic DNA fragmentation	-5
826	GO Biological Processes	regulation of heat generation	-5
827	GO Biological Processes	ether biosynthetic process	-5
828	GO Biological Processes	UV protection	-5
829	GO Biological Processes	anoikis	-5
830	GO Biological Processes	regulation of DNA damage response, signal transduction by p53 class mediator	-5
831	GO Biological Processes	regulation of miRNA-mediated gene silencing	-5
832	GO Biological Processes	positive regulation of glucose import	-5
833	GO Biological Processes	cellular response to alkaloid	-5
834	GO Biological Processes	cellular response to lipoprotein particle stimulus	-5
835	GO Biological Processes	positive regulation of neuroblast proliferation	-5
836	GO Biological Processes	cell activation involved in immune response	-4.9
837	GO Biological Processes	organic hydroxy compound metabolic process	-4.9
838	GO Biological Processes	neural crest cell development	-4.9
839	GO Biological Processes	negative regulation of cysteine-type	-4.9
840	GO Biological Processes	inositol lipid-mediated signaling	-4.9
841	GO Biological Processes	hormone metabolic process	-4.9
842	GO Biological Processes	positive regulation of membrane permeability	-4.9
843	GO Biological Processes	glial cell activation	-4.9
844	GO Biological Processes	regulation of T cell activation	-4.9
845	GO Biological Processes	negative regulation of cell-cell adhesion	-4.9
846	GO Biological Processes	regulation of DNA-templated transcription	-4.9
847	GO Biological Processes	positive regulation of proteolysis involved in	-4.9
848	GO Biological Processes	branching morphogenesis of an epithelial tube	-4.9
849	GO Biological Processes	lipid localization	-4.9
850	GO Biological Processes	regulation of post-transcriptional gene silencing	-4.9
851	GO Biological Processes	unsaturated fatty acid biosynthetic process	-4.9
852	GO Biological Processes	negative regulation of protein kinase activity	-4.9
853	GO Biological Processes	negative regulation of transport	-4.9
854	GO Biological Processes	myeloid leukocyte migration	-4.9
855	GO Biological Processes	signal transduction in response to DNA damage	-4.9
856	GO Biological Processes	regulation of prostaglandin biosynthetic process	-4.9
857	GO Biological Processes	UV-damage excision repair	-4.9
858	GO Biological Processes	multicellular organismal response to stress	-4.9
859	GO Biological Processes	positive regulation of protein catabolic process	-4.8
860	GO Biological Processes	positive regulation of insulin secretion	-4.8
861	GO Biological Processes	regulation of post-transcriptional gene silencing	-4.8
862	GO Biological Processes	regulation of fibroblast migration	-4.8
863	GO Biological Processes	acute-phase response	-4.8
864	GO Biological Processes	modulation of chemical synaptic transmission	-4.8
865	GO Biological Processes	regulation of trans-synaptic signaling	-4.8
866	GO Biological Processes	positive regulation of chemotaxis	-4.8
867	GO Biological Processes	macrophage differentiation	-4.8
868	GO Biological Processes	exocrine system development	-4.8
869	GO Biological Processes	response to testosterone	-4.8
870	GO Biological Processes	regulation of gene silencing by RNA	-4.8
871	GO Biological Processes	stem cell development	-4.8
872	GO Biological Processes	regulation of signaling receptor activity	-4.8
873	GO Biological Processes	morphogenesis of embryonic epithelium	-4.8
874	GO Biological Processes	positive regulation of lymphocyte proliferation	-4.8
875	GO Biological Processes	regulation of tissue remodeling	-4.8
876	GO Biological Processes	regulation of response to type II interferon	-4.8
877	GO Biological Processes	positive regulation of prostaglandin secretion	-4.8
878	GO Biological Processes	phosphatidylcholine acyl-chain remodeling	-4.8
879	GO Biological Processes	regulation of type II interferon-mediated	-4.8
880	GO Biological Processes	regulation of DNA catabolic process	-4.8
881	GO Biological Processes	regulation of miRNA processing	-4.8
882	GO Biological Processes	regulation of prostaglandin secretion	-4.8
883	GO Biological Processes	regulation of transmembrane receptor protein serine/threonine kinase signaling pathway	-4.7
884	GO Biological Processes	phosphatidylinositol 3-kinase signaling	-4.7
885	GO Biological Processes	regulation of phosphatidylinositol 3-kinase	-4.7
886	GO Biological Processes	response to toxic substance	-4.7

887	GO Biological Processes	leukocyte chemotaxis	-4.7
888	GO Biological Processes	embryonic placenta development	-4.7
889	GO Biological Processes	positive regulation of epithelial cell apoptotic	-4.7
890	GO Biological Processes	regulation of smooth muscle cell differentiation	-4.7
891	GO Biological Processes	positive regulation of leukocyte mediated	-4.7
892	GO Biological Processes	negative regulation of endopeptidase activity	-4.7
893	GO Biological Processes	signal transduction by p53 class mediator	-4.7
894	GO Biological Processes	regulation of cold-induced thermogenesis	-4.7
895	GO Biological Processes	regulation of transforming growth factor beta receptor signaling pathway	-4.7
896	GO Biological Processes	monocarboxylic acid transport	-4.7
897	GO Biological Processes	positive regulation of glucose transmembrane	-4.7
898	GO Biological Processes	cellular response to insulin stimulus	-4.7
899	GO Biological Processes	regulation of smooth muscle cell migration	-4.7
900	GO Biological Processes	regulation of lipase activity	-4.7
901	GO Biological Processes	regulation of unsaturated fatty acid biosynthetic	-4.7
902	GO Biological Processes	chondrocyte differentiation involved in endochondral bone morphogenesis	-4.7
903	GO Biological Processes	regulation of regulatory ncRNA processing	-4.7
904	GO Biological Processes	negative regulation of DNA damage response, signal transduction by p53 class mediator	-4.7
905	GO Biological Processes	lactate metabolic process	-4.7
906	GO Biological Processes	negative regulation of peptidase activity	-4.6
907	GO Biological Processes	regulation of cellular response to transforming growth factor beta stimulus	-4.6
908	GO Biological Processes	positive regulation of receptor signaling pathway	-4.6
909	GO Biological Processes	T cell selection	-4.6
910	GO Biological Processes	neural crest cell differentiation	-4.6
911	GO Biological Processes	cardiac muscle cell differentiation	-4.6
912	GO Biological Processes	regulation of receptor signaling pathway via	-4.6
913	GO Biological Processes	regulation of proteolysis involved in protein	-4.6
914	GO Biological Processes	negative regulation of kinase activity	-4.6
915	GO Biological Processes	positive regulation of pattern recognition	-4.6
916	GO Biological Processes	regulation of telomerase activity	-4.6
917	GO Biological Processes	regulation of collagen metabolic process	-4.6
918	GO Biological Processes	regulation of triglyceride metabolic process	-4.6
919	GO Biological Processes	regulation of cellular response to heat	-4.6
920	GO Biological Processes	positive regulation of macrophage	-4.6
921	GO Biological Processes	regulation of systemic arterial blood pressure	-4.6
922	GO Biological Processes	secretion	-4.6
923	GO Biological Processes	negative regulation of neuron apoptotic process	-4.6
924	GO Biological Processes	neural tube development	-4.6
925	GO Biological Processes	regulation of endothelial cell differentiation	-4.6
926	GO Biological Processes	regulation of reactive oxygen species	-4.6
927	GO Biological Processes	leukocyte homeostasis	-4.5
928	GO Biological Processes	negative regulation of myeloid cell	-4.5
929	GO Biological Processes	positive regulation of JNK cascade	-4.5
930	GO Biological Processes	positive regulation of transmembrane transport	-4.5
931	GO Biological Processes	positive regulation of leukocyte chemotaxis	-4.5
932	GO Biological Processes	negative regulation of NF-kappaB transcription	-4.5
933	GO Biological Processes	primary neural tube formation	-4.5
934	GO Biological Processes	cell morphogenesis	-4.5
935	GO Biological Processes	regulation of neural precursor cell proliferation	-4.5
936	GO Biological Processes	CD4-positive, alpha-beta T cell lineage	-4.5
937	GO Biological Processes	ovulation	-4.5
938	GO Biological Processes	positive regulation of myotube differentiation	-4.5
939	GO Biological Processes	digestive tract morphogenesis	-4.5
940	GO Biological Processes	negative regulation of reactive oxygen species	-4.5
941	GO Biological Processes	positive regulation of organic acid transport	-4.5
942	GO Biological Processes	cellular response to amino acid starvation	-4.5
943	GO Biological Processes	positive regulation of cell growth	-4.5
944	GO Biological Processes	morphogenesis of a branching epithelium	-4.4
945	GO Biological Processes	icosanoid biosynthetic process	-4.4
946	GO Biological Processes	cytosolic pattern recognition receptor signaling	-4.4
947	GO Biological Processes	secondary metabolic process	-4.4
948	GO Biological Processes	biomineral tissue development	-4.4
949	GO Biological Processes	neural precursor cell proliferation	-4.4
950	GO Biological Processes	activation of protein kinase activity	-4.4
951	GO Biological Processes	morphogenesis of an epithelial fold	-4.4
952	GO Biological Processes	monocyte differentiation	-4.4
953	GO Biological Processes	positive regulation of transcription from RNA polymerase II promoter in response to stress	-4.4
954	GO Biological Processes	ectopic germ cell programmed cell death	-4.4
955	GO Biological Processes	execution phase of apoptosis	-4.4
956	GO Biological Processes	regulation of biomineral tissue development	-4.4
957	GO Biological Processes	negative regulation of transforming growth factor beta receptor signaling pathway	-4.4
958	GO Biological Processes	regulation of leukocyte mediated immunity	-4.4
959	GO Biological Processes	positive regulation of T cell activation	-4.4
960	GO Biological Processes	negative regulation of organelle organization	-4.4
961	GO Biological Processes	neural tube formation	-4.4
962	GO Biological Processes	ovulation cycle process	-4.4
963	GO Biological Processes	epidermal growth factor receptor signaling	-4.4
964	GO Biological Processes	regulation of purine nucleotide metabolic	-4.4
965	GO Biological Processes	negative regulation of myeloid leukocyte	-4.4
966	GO Biological Processes	response to amino acid starvation	-4.4
967	GO Biological Processes	regulation of platelet activation	-4.4
968	GO Biological Processes	intracellular chemical homeostasis	-4.4
969	GO Biological Processes	regulation of muscle system process	-4.3
970	GO Biological Processes	regulation of nucleotide metabolic process	-4.3
971	GO Biological Processes	cellular response to type II interferon	-4.3
972	GO Biological Processes	regulation of glucose metabolic process	-4.3
973	GO Biological Processes	positive regulation of tumor necrosis factor	-4.3
974	GO Biological Processes	alpha-beta T cell lineage commitment	-4.3
975	GO Biological Processes	positive regulation of macrophage chemotaxis	-4.3
976	GO Biological Processes	behavioral response to pain	-4.3
977	GO Biological Processes	activation of cysteine-type endopeptidase	-4.3
978	GO Biological Processes	leukocyte migration involved in inflammatory	-4.3
979	GO Biological Processes	positive regulation of smooth muscle cell	-4.3
980	GO Biological Processes	positive regulation of superoxide anion	-4.3
981	GO Biological Processes	regulation of ubiquitin-dependent protein	-4.3
982	GO Biological Processes	steroid metabolic process	-4.3
983	GO Biological Processes	negative regulation of epithelial cell	-4.3
984	GO Biological Processes	morphogenesis of a branching structure	-4.3
985	GO Biological Processes	positive regulation of peptide hormone secretion	-4.3
986	GO Biological Processes	pattern recognition receptor signaling pathway	-4.3
987	GO Biological Processes	small molecule biosynthetic process	-4.3
988	GO Biological Processes	phospholipase C-activating G protein-coupled receptor signaling pathway	-4.3
989	GO Biological Processes	negative regulation of miRNA-mediated gene	-4.3
990	GO Biological Processes	mammary gland alveolus development	-4.3
991	GO Biological Processes	mammary gland lobule development	-4.3
992	GO Biological Processes	positive regulation of skeletal muscle tissue	-4.3
993	GO Biological Processes	positive regulation of tumor necrosis factor superfamily cytokine production	-4.3
994	GO Biological Processes	positive regulation of peptide secretion	-4.3

995	GO Biological Processes	regulation of alcohol biosynthetic process	-4.2
996	GO Biological Processes	response to dsRNA	-4.2
997	GO Biological Processes	regulation of lipid kinase activity	-4.2
998	GO Biological Processes	viral entry into host cell	-4.2
999	GO Biological Processes	negative regulation of leukocyte differentiation	-4.2
1000	GO Biological Processes	positive regulation of ubiquitin-dependent	-4.2
1001	GO Biological Processes	regulation of pattern recognition receptor	-4.2
1002	GO Biological Processes	bone mineralization	-4.2
1003	GO Biological Processes	regulation of interleukin-1 beta production	-4.2
1004	GO Biological Processes	intracellular glucose homeostasis	-4.2
1005	GO Biological Processes	entry into host	-4.2
1006	GO Biological Processes	glial cell development	-4.2
1007	GO Biological Processes	positive regulation of glial cell proliferation	-4.2
1008	GO Biological Processes	negative regulation of gene silencing by RNA	-4.2
1009	GO Biological Processes	negative regulation of post-transcriptional gene	-4.2
1010	GO Biological Processes	negative regulation of post-transcriptional gene	-4.2
1011	GO Biological Processes	prostaglandin biosynthetic process	-4.2
1012	GO Biological Processes	positive regulation of icosanoid secretion	-4.2
1013	GO Biological Processes	prostanoid biosynthetic process	-4.2
1014	GO Biological Processes	appendage development	-4.2
1015	GO Biological Processes	limb development	-4.2
1016	GO Biological Processes	regulation of T cell proliferation	-4.2
1017	GO Biological Processes	tumor necrosis factor-mediated signaling	-4.2
1018	GO Biological Processes	sensory organ morphogenesis	-4.2
1019	GO Biological Processes	nucleotide-excision repair	-4.2
1020	GO Biological Processes	regulation of lymphocyte apoptotic process	-4.2
1021	GO Biological Processes	icosanoid metabolic process	-4.2
1022	GO Biological Processes	regulation of icosanoid secretion	-4.1
1023	GO Biological Processes	regulation of superoxide anion generation	-4.1
1024	GO Biological Processes	interleukin-1-mediated signaling pathway	-4.1
1025	GO Biological Processes	negative regulation of tissue remodeling	-4.1
1026	GO Biological Processes	negative regulation of systemic arterial blood	-4.1
1027	GO Biological Processes	intracellular estrogen receptor signaling pathway	-4.1
1028	GO Biological Processes	programmed cell death involved in cell	-4.1
1029	GO Biological Processes	positive regulation of nitric-oxide synthase	-4.1
1030	GO Biological Processes	toll-like receptor 4 signaling pathway	-4.1
1031	GO Biological Processes	negative regulation of hemopoiesis	-4.1
1032	GO Biological Processes	negative regulation of small molecule metabolic	-4.1
1033	GO Biological Processes	cardiac muscle tissue development	-4.1
1034	GO Biological Processes	negative regulation of MAP kinase activity	-4.1
1035	GO Biological Processes	carboxylic acid biosynthetic process	-4.1
1036	GO Biological Processes	cellular response to xenobiotic stimulus	-4.1
1037	GO Biological Processes	regulation of telomere maintenance via telomere	-4.1
1038	GO Biological Processes	regulation of carbohydrate catabolic process	-4.1
1039	GO Biological Processes	heart valve morphogenesis	-4.1
1040	GO Biological Processes	negative regulation of protein kinase B signaling	-4.1
1041	GO Biological Processes	positive regulation of proteasomal protein	-4.1
1042	GO Biological Processes	organic acid biosynthetic process	-4.1
1043	GO Biological Processes	negative regulation of intrinsic apoptotic signaling pathway by p53 class mediator	-4.1
1044	GO Biological Processes	response to glucagon	-4.1
1045	GO Biological Processes	response to salt stress	-4.1
1046	GO Biological Processes	regulation of muscle organ development	-4.1
1047	GO Biological Processes	regulation of type II interferon production	-4.1
1048	GO Biological Processes	positive regulation of wound healing	-4.1
1049	GO Biological Processes	macrophage activation	-4.1
1050	GO Biological Processes	positive regulation of neural precursor cell	-4.1
1051	GO Biological Processes	regulation of monoatomic ion transport	-4.1
1052	GO Biological Processes	response to unfolded protein	-4.1
1053	GO Biological Processes	embryonic limb morphogenesis	-4.1
1054	GO Biological Processes	embryonic appendage morphogenesis	-4.1
1055	GO Biological Processes	limbic system development	-4.1
1056	GO Biological Processes	positive regulation of oxidoreductase activity	-4
1057	GO Biological Processes	positive regulation of intrinsic apoptotic	-4
1058	GO Biological Processes	regulation of proteasomal protein catabolic	-4
1059	GO Biological Processes	regulation of mononuclear cell migration	-4
1060	GO Biological Processes	positive regulation of interferon-alpha	-4
1061	GO Biological Processes	regulation of triglyceride biosynthetic process	-4
1062	GO Biological Processes	positive regulation of mesenchymal cell	-4
1063	GO Biological Processes	cell surface toll-like receptor signaling pathway	-4
1064	GO Biological Processes	positive regulation of nucleotide metabolic	-4
1065	GO Biological Processes	male genitalia development	-4
1066	GO Biological Processes	negative regulation of muscle contraction	-4
1067	GO Biological Processes	positive regulation of purine nucleotide	-4
1068	GO Biological Processes	cellular response to corticosteroid stimulus	-4
1069	GO Biological Processes	positive regulation of adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin	-4
1070	GO Biological Processes	muscle system process	-4
1071	GO Biological Processes	protein localization to organelle	-4
1072	GO Biological Processes	regulation of interleukin-10 production	-4
1073	GO Biological Processes	cellular response to retinoic acid	-4
1074	GO Biological Processes	negative regulation of chondrocyte	-4
1075	GO Biological Processes	facultative heterochromatin formation	-4
1076	GO Biological Processes	programmed necrotic cell death	-4
1077	GO Biological Processes	negative regulation of myoblast differentiation	-4
1078	GO Biological Processes	regulation of macrophage differentiation	-4
1079	GO Biological Processes	positive regulation of fatty acid transport	-4
1080	GO Biological Processes	regulation of brown fat cell differentiation	-4
1081	GO Biological Processes	response to lithium ion	-4
1082	GO Biological Processes	ether metabolic process	-4
1083	GO Biological Processes	positive regulation of cell cycle G1/S phase	-4
1084	GO Biological Processes	positive regulation of response to cytokine	-4
1085	GO Biological Processes	carboxylic acid transport	-4
1086	GO Biological Processes	cardiac chamber morphogenesis	-3.9
1087	GO Biological Processes	cerebral cortex development	-3.9
1088	GO Biological Processes	organic acid transport	-3.9
1089	GO Biological Processes	positive regulation of tyrosine phosphorylation	-3.9
1090	GO Biological Processes	insulin receptor signaling pathway	-3.9
1091	GO Biological Processes	innate immune response-activating signaling	-3.9
1092	GO Biological Processes	response to type II interferon	-3.9
1093	GO Biological Processes	positive regulation of mitotic cell cycle	-3.9
1094	GO Biological Processes	regulation of adaptive immune response	-3.9
1095	GO Biological Processes	regulation of oxidative stress-induced neuron	-3.9
1096	GO Biological Processes	negative regulation of stem cell proliferation	-3.9
1097	GO Biological Processes	necrotic cell death	-3.9
1098	GO Biological Processes	regulation of animal organ formation	-3.9
1099	GO Biological Processes	regulation of mitochondrial outer membrane permeabilization involved in apoptotic signaling	-3.9
1100	GO Biological Processes	decidualization	-3.9
1101	GO Biological Processes	regulation of telomere capping	-3.9
1102	GO Biological Processes	negative regulation of heart contraction	-3.9
1103	GO Biological Processes	regulation of reproductive process	-3.9
1104	GO Biological Processes	kidney development	-3.9
1105	GO Biological Processes	positive regulation of lymphocyte differentiation	-3.9

1106	GO Biological Processes	cellular response to unfolded protein	-3.9
1107	GO Biological Processes	regulation of interleukin-1 production	-3.9
1108	GO Biological Processes	defense response to bacterium	-3.9
1109	GO Biological Processes	positive regulation of type I interferon	-3.9
1110	GO Biological Processes	lymphocyte homeostasis	-3.9
1111	GO Biological Processes	T cell proliferation	-3.9
1112	GO Biological Processes	negative regulation of chemokine production	-3.9
1113	GO Biological Processes	positive regulation of lipid catabolic process	-3.9
1114	GO Biological Processes	chondrocyte development	-3.9
1115	GO Biological Processes	detection of stimulus involved in sensory	-3.9
1116	GO Biological Processes	positive regulation of leukocyte apoptotic	-3.9
1117	GO Biological Processes	negative regulation of blood circulation	-3.9
1118	GO Biological Processes	detection of external stimulus	-3.9
1119	GO Biological Processes	liver development	-3.8
1120	GO Biological Processes	secretion by cell	-3.8
1121	GO Biological Processes	vasculogenesis	-3.8
1122	GO Biological Processes	heart valve development	-3.8
1123	GO Biological Processes	thyroid gland development	-3.8
1124	GO Biological Processes	positive regulation of osteoclast differentiation	-3.8
1125	GO Biological Processes	mRNA metabolic process	-3.8
1126	GO Biological Processes	renal system development	-3.8
1127	GO Biological Processes	proteolysis involved in protein catabolic process	-3.8
1128	GO Biological Processes	detection of abiotic stimulus	-3.8
1129	GO Biological Processes	lymphocyte activation involved in immune	-3.8
1130	GO Biological Processes	regulation of myoblast differentiation	-3.8
1131	GO Biological Processes	regulation of cartilage development	-3.8
1132	GO Biological Processes	hepaticobiliary system development	-3.8
1133	GO Biological Processes	negative regulation of protein localization	-3.8
1134	GO Biological Processes	regulation of translation	-3.8
1135	GO Biological Processes	osteoblast differentiation	-3.8
1136	GO Biological Processes	alpha-beta T cell differentiation	-3.8
1137	GO Biological Processes	T cell apoptotic process	-3.8
1138	GO Biological Processes	androgen metabolic process	-3.8
1139	GO Biological Processes	positive regulation of cell killing	-3.8
1140	GO Biological Processes	positive regulation of macroautophagy	-3.8
1141	GO Biological Processes	movement in host	-3.7
1142	GO Biological Processes	regulation of metal ion transport	-3.7
1143	GO Biological Processes	regulation of proteasomal ubiquitin-dependent protein catabolic process	-3.7
1144	GO Biological Processes	positive regulation of response to wounding	-3.7
1145	GO Biological Processes	positive regulation of translational initiation	-3.7
1146	GO Biological Processes	response to growth hormone	-3.7
1147	GO Biological Processes	liver regeneration	-3.7
1148	GO Biological Processes	negative regulation of intrinsic apoptotic signaling pathway in response to DNA damage	-3.7
1149	GO Biological Processes	positive regulation of insulin secretion involved in cellular response to glucose stimulus	-3.7
1150	GO Biological Processes	icosanoid secretion	-3.7
1151	GO Biological Processes	regulation of interferon-alpha production	-3.7
1152	GO Biological Processes	negative regulation of signaling receptor activity	-3.7
1153	GO Biological Processes	germ cell development	-3.7
1154	GO Biological Processes	response to topologically incorrect protein	-3.7
1155	GO Biological Processes	diencephalon development	-3.7
1156	GO Biological Processes	positive regulation of type II interferon	-3.7
1157	GO Biological Processes	negative regulation of endothelial cell	-3.7
1158	GO Biological Processes	positive regulation of translation	-3.7
1159	GO Biological Processes	negative regulation of cell activation	-3.7
1160	GO Biological Processes	integrated stress response signaling	-3.7
1161	GO Biological Processes	replacement ossification	-3.7
1162	GO Biological Processes	positive regulation of macrophage activation	-3.7
1163	GO Biological Processes	B cell homeostasis	-3.7
1164	GO Biological Processes	regulation of mesenchymal cell proliferation	-3.7
1165	GO Biological Processes	endochondral ossification	-3.7
1166	GO Biological Processes	microglial cell activation	-3.7
1167	GO Biological Processes	limb morphogenesis	-3.7
1168	GO Biological Processes	appendage morphogenesis	-3.7
1169	GO Biological Processes	leukocyte mediated immunity	-3.7
1170	GO Biological Processes	response to vitamin	-3.7
1171	GO Biological Processes	regulation of steroid biosynthetic process	-3.7
1172	GO Biological Processes	cellular process involved in reproduction in	-3.7
1173	GO Biological Processes	regulation of transporter activity	-3.7
1174	GO Biological Processes	regulation of osteoblast differentiation	-3.7
1175	GO Biological Processes	glycoprotein catabolic process	-3.6
1176	GO Biological Processes	cell surface pattern recognition receptor	-3.6
1177	GO Biological Processes	regulation of smooth muscle cell apoptotic	-3.6
1178	GO Biological Processes	negative regulation of osteoclast differentiation	-3.6
1179	GO Biological Processes	response to ATP	-3.6
1180	GO Biological Processes	branching involved in blood vessel	-3.6
1181	GO Biological Processes	positive regulation of phosphatidylinositol 3-	-3.6
1182	GO Biological Processes	negative regulation of macroautophagy	-3.6
1183	GO Biological Processes	regulation of membrane potential	-3.6
1184	GO Biological Processes	epidermis development	-3.6
1185	GO Biological Processes	regulation of bone mineralization	-3.6
1186	GO Biological Processes	T cell activation involved in immune response	-3.6
1187	GO Biological Processes	positive regulation of autophagy	-3.6
1188	GO Biological Processes	negative regulation of neurogenesis	-3.6
1189	GO Biological Processes	negative regulation of cell junction assembly	-3.6
1190	GO Biological Processes	embryonic digestive tract development	-3.6
1191	GO Biological Processes	blood vessel endothelial cell migration	-3.6
1192	GO Biological Processes	regulation of endoplasmic reticulum stress-induced intrinsic apoptotic signaling pathway	-3.6
1193	GO Biological Processes	odontogenesis of dentin-containing tooth	-3.6
1194	GO Biological Processes	regulation of tyrosine phosphorylation of STAT	-3.6
1195	GO Biological Processes	negative regulation of hydrolase activity	-3.6
1196	GO Biological Processes	female gamete generation	-3.6
1197	GO Biological Processes	activation of innate immune response	-3.6
1198	GO Biological Processes	learning	-3.6
1199	GO Biological Processes	positive regulation of telomerase activity	-3.6
1200	GO Biological Processes	positive regulation of erythrocyte differentiation	-3.6
1201	GO Biological Processes	positive regulation of telomere maintenance via	-3.6
1202	GO Biological Processes	nucleobase metabolic process	-3.6
1203	GO Biological Processes	leukocyte activation involved in inflammatory	-3.6
1204	GO Biological Processes	muscle adaptation	-3.6
1205	GO Biological Processes	negative regulation of signal transduction by p53	-3.6
1206	GO Biological Processes	dopaminergic neuron differentiation	-3.6
1207	GO Biological Processes	embryonic heart tube development	-3.6
1208	GO Biological Processes	mitochondrion organization	-3.5
1209	GO Biological Processes	hindbrain development	-3.5
1210	GO Biological Processes	ureteric bud development	-3.5
1211	GO Biological Processes	negative regulation of nervous system	-3.5
1212	GO Biological Processes	antigen receptor-mediated signaling pathway	-3.5
1213	GO Biological Processes	positive regulation of myeloid leukocyte cytokine production involved in immune	-3.5
1214	GO Biological Processes	mesonephric tubule development	-3.5
1215	GO Biological Processes	mesonephric epithelium development	-3.5
1216	GO Biological Processes	cell cycle G1/S phase transition	-3.5

1217	GO Biological Processes	eye morphogenesis	-3.5
1218	GO Biological Processes	associative learning	-3.5
1219	GO Biological Processes	positive regulation of reproductive process	-3.5
1220	GO Biological Processes	regulation of protein dephosphorylation	-3.5
1221	GO Biological Processes	defense response to Gram-negative bacterium	-3.5
1222	GO Biological Processes	regulation of fatty acid oxidation	-3.5
1223	GO Biological Processes	astrocyte development	-3.5
1224	GO Biological Processes	lymphocyte apoptotic process	-3.5
1225	GO Biological Processes	establishment of protein localization to	-3.5
1226	GO Biological Processes	peptidyl-tyrosine phosphorylation	-3.5
1227	GO Biological Processes	response to cAMP	-3.5
1228	GO Biological Processes	cellular response to topologically incorrect	-3.5
1229	GO Biological Processes	negative regulation of Notch signaling pathway	-3.5
1230	GO Biological Processes	lung epithelium development	-3.5
1231	GO Biological Processes	maintenance of blood-brain barrier	-3.5
1232	GO Biological Processes	positive regulation of lipid kinase activity	-3.5
1233	GO Biological Processes	positive regulation of telomere maintenance via	-3.5
1234	GO Biological Processes	regulation of macrophage cytokine production	-3.5
1235	GO Biological Processes	small molecule catabolic process	-3.5
1236	GO Biological Processes	mesonephros development	-3.4
1237	GO Biological Processes	neural tube closure	-3.4
1238	GO Biological Processes	tube closure	-3.4
1239	GO Biological Processes	peptidyl-tyrosine modification	-3.4
1240	GO Biological Processes	regulation of polysaccharide biosynthetic	-3.4
1241	GO Biological Processes	regulation of intrinsic apoptotic signaling pathway in response to DNA damage	-3.4
1242	GO Biological Processes	export from cell	-3.4
1243	GO Biological Processes	cardiac chamber development	-3.4
1244	GO Biological Processes	positive regulation of proteasomal ubiquitin-dependent protein catabolic process	-3.4
1245	GO Biological Processes	negative regulation of JNK cascade	-3.4
1246	GO Biological Processes	positive regulation of lyase activity	-3.4
1247	GO Biological Processes	prostaglandin metabolic process	-3.4
1248	GO Biological Processes	prostanoid metabolic process	-3.4
1249	GO Biological Processes	hair cycle	-3.4
1250	GO Biological Processes	molting cycle	-3.4
1251	GO Biological Processes	positive regulation of cell cycle process	-3.4
1252	GO Biological Processes	negative regulation of cell-matrix adhesion	-3.4
1253	GO Biological Processes	DNA damage response, signal transduction by	-3.4
1254	GO Biological Processes	negative regulation of insulin receptor signaling	-3.4
1255	GO Biological Processes	lactation	-3.4
1256	GO Biological Processes	regulation of canonical Wnt signaling pathway	-3.4
1257	GO Biological Processes	regulation of chromosome organization	-3.3
1258	GO Biological Processes	negative regulation of transmembrane receptor protein serine/threonine kinase signaling	-3.3
1259	GO Biological Processes	carbohydrate derivative catabolic process	-3.3
1260	GO Biological Processes	maintenance of location	-3.3
1261	GO Biological Processes	DNA modification	-3.3
1262	GO Biological Processes	hexose catabolic process	-3.3
1263	GO Biological Processes	positive regulation of interleukin-10 production	-3.3
1264	GO Biological Processes	regulation of transforming growth factor beta	-3.3
1265	GO Biological Processes	positive regulation of receptor signaling pathway	-3.3
1266	GO Biological Processes	regulation of collagen biosynthetic process	-3.3
1267	GO Biological Processes	cellular extravasation	-3.3
1268	GO Biological Processes	blood coagulation	-3.3
1269	GO Biological Processes	lipid homeostasis	-3.3
1270	GO Biological Processes	regulation of calcium ion transport	-3.3
1271	GO Biological Processes	homeostasis of number of cells	-3.3
1272	GO Biological Processes	response to alkaloid	-3.3
1273	GO Biological Processes	cell morphogenesis involved in differentiation	-3.3
1274	GO Biological Processes	negative regulation of striated muscle cell	-3.3
1275	GO Biological Processes	regulation of protein localization to cell surface	-3.3
1276	GO Biological Processes	cellular response to osmotic stress	-3.3
1277	GO Biological Processes	negative regulation of cellular response to	-3.3
1278	GO Biological Processes	coagulation	-3.3
1279	GO Biological Processes	epithelial cell migration	-3.3
1280	GO Biological Processes	viral life cycle	-3.3
1281	GO Biological Processes	organic anion transport	-3.3
1282	GO Biological Processes	regulation of oligodendrocyte differentiation	-3.3
1283	GO Biological Processes	bone remodeling	-3.3
1284	GO Biological Processes	cellular response to epidermal growth factor	-3.3
1285	GO Biological Processes	positive regulation of glial cell differentiation	-3.3
1286	GO Biological Processes	response to dexamethasone	-3.3
1287	GO Biological Processes	musculoskeletal movement	-3.3
1288	GO Biological Processes	regulation of digestive system process	-3.3
1289	GO Biological Processes	T cell homeostasis	-3.2
1290	GO Biological Processes	hemostasis	-3.2
1291	GO Biological Processes	skin development	-3.2
1292	GO Biological Processes	regulation of organ growth	-3.2
1293	GO Biological Processes	positive regulation of bone mineralization	-3.2
1294	GO Biological Processes	multicellular organismal movement	-3.2
1295	GO Biological Processes	regulation of polysaccharide metabolic process	-3.2
1296	GO Biological Processes	epithelium migration	-3.2
1297	GO Biological Processes	regulation of steroid metabolic process	-3.2
1298	GO Biological Processes	alpha-beta T cell activation	-3.2
1299	GO Biological Processes	adaptive immune response based on somatic recombination of immune receptors built from	-3.2
1300	GO Biological Processes	regulation of telomere maintenance	-3.2
1301	GO Biological Processes	positive regulation of glucose metabolic process	-3.2
1302	GO Biological Processes	positive regulation of protein dephosphorylation	-3.2
1303	GO Biological Processes	positive regulation of T cell proliferation	-3.2
1304	GO Biological Processes	cell-substrate adhesion	-3.2
1305	GO Biological Processes	signal release	-3.2
1306	GO Biological Processes	regulation of G1/S transition of mitotic cell cycle	-3.2
1307	GO Biological Processes	DNA metabolic process	-3.2
1308	GO Biological Processes	positive regulation of smooth muscle cell	-3.2
1309	GO Biological Processes	cellular response to nerve growth factor stimulus	-3.1
1310	GO Biological Processes	labyrinthine layer development	-3.1
1311	GO Biological Processes	icosanoid transport	-3.1
1312	GO Biological Processes	regulation of erythrocyte differentiation	-3.1
1313	GO Biological Processes	negative regulation of cold-induced	-3.1
1314	GO Biological Processes	regulation of myotube differentiation	-3.1
1315	GO Biological Processes	regulation of cytoskeleton organization	-3.1
1316	GO Biological Processes	regulation of adaptive immune response based on somatic recombination of immune receptors built from immunoglobulin superfamily domains	-3.1
1317	GO Biological Processes	tissue migration	-3.1
1318	GO Biological Processes	visual learning	-3.1
1319	GO Biological Processes	regulation of interleukin-17 production	-3.1
1320	GO Biological Processes	cellular response to glucose starvation	-3.1
1321	GO Biological Processes	response to nerve growth factor	-3.1
1322	GO Biological Processes	organelle localization	-3.1
1323	GO Biological Processes	long-chain fatty acid metabolic process	-3.1
1324	GO Biological Processes	mononuclear cell migration	-3.1
1325	GO Biological Processes	monosaccharide catabolic process	-3.1
1326	GO Biological Processes	regulation of cardiac muscle cell apoptotic	-3.1

1327	GO Biological Processes	response to exogenous dsRNA	-3.1
1328	GO Biological Processes	regulation of cell adhesion mediated by integrin	-3.1
1329	GO Biological Processes	regulation of cyclin-dependent protein	-3.1
1330	GO Biological Processes	skin epidermis development	-3.1
1331	GO Biological Processes	axon development	-3.1
1332	GO Biological Processes	developmental cell growth	-3.1
1333	GO Biological Processes	macroautophagy	-3.1
1334	GO Biological Processes	positive regulation of pathway-restricted SMAD protein phosphorylation	-3.1
1335	GO Biological Processes	ephrin receptor signaling pathway	-3.1
1336	GO Biological Processes	cell-cell adhesion	-3.1
1337	GO Biological Processes	intracellular monoatomic cation homeostasis	-3.1
1338	GO Biological Processes	anterograde trans-synaptic signaling	-3.1
1339	GO Biological Processes	chemical synaptic transmission	-3.1
1340	GO Biological Processes	neuron projection development	-3
1341	GO Biological Processes	cell growth	-3
1342	GO Biological Processes	positive regulation of endothelial cell	-3
1343	GO Biological Processes	negative regulation of stress-activated MAPK	-3
1344	GO Biological Processes	negative regulation of DNA binding	-3
1345	GO Biological Processes	Fc receptor signaling pathway	-3
1346	GO Biological Processes	regulation of insulin secretion involved in cellular response to glucose stimulus	-3
1347	GO Biological Processes	regulation of cellular respiration	-3
1348	GO Biological Processes	regulation of striated muscle cell apoptotic	-3
1349	GO Biological Processes	negative regulation of stress-activated protein	-3
1350	GO Biological Processes	positive regulation of T cell differentiation	-3
1351	GO Biological Processes	regulation of cyclin-dependent protein kinase	-3
1352	GO Biological Processes	regulation of glycolytic process	-3
1353	GO Biological Processes	positive regulation of alpha-beta T cell	-3
1354	GO Biological Processes	negative regulation of muscle cell apoptotic	-3
1355	GO Biological Processes	positive regulation of ossification	-3
1356	GO Biological Processes	negative regulation of cellular catabolic process	-3
1357	GO Biological Processes	negative regulation of leukocyte activation	-3
1358	GO Biological Processes	biological process involved in interaction with	-3
1359	GO Biological Processes	regulation of TOR signaling	-3
1360	GO Biological Processes	intracellular monoatomic ion homeostasis	-3
1361	GO Biological Processes	positive regulation of G1/S transition of mitotic	-3
1362	GO Biological Processes	regulation of telomere maintenance via	-3
1363	GO Biological Processes	detection of mechanical stimulus	-3
1364	GO Biological Processes	positive regulation of extrinsic apoptotic	-3
1365	GO Biological Processes	regulation of granulocyte chemotaxis	-3
1366	GO Biological Processes	B cell proliferation	-3
1367	GO Biological Processes	ERK1 and ERK2 cascade	-3
1368	GO Biological Processes	muscle organ development	-3
1369	GO Biological Processes	regulation of type I interferon production	-3
1370	GO Biological Processes	positive regulation of cell cycle phase transition	-3
1371	GO Biological Processes	second-messenger-mediated signaling	-3
1372	GO Biological Processes	regulation of cellular senescence	-3
1373	GO Biological Processes	CD4-positive, alpha-beta T cell differentiation	-3
1374	GO Biological Processes	regulation of chondrocyte differentiation	-3
1375	GO Biological Processes	visual behavior	-3
1376	GO Biological Processes	negative regulation of I-kappaB kinase/NF-	-3
1377	GO Biological Processes	cellular response to glucocorticoid stimulus	-3
1378	GO Biological Processes	DNA alkylation	-3
1379	GO Biological Processes	positive regulation of biomineral tissue	-3
1380	GO Biological Processes	DNA methylation	-3
1381	GO Biological Processes	trans-synaptic signaling	-3
1382	GO Biological Processes	regulation of heart contraction	-2.9
1383	GO Biological Processes	regulation of mitotic cell cycle phase transition	-2.9
1384	GO Biological Processes	histone modification	-2.9
1385	GO Biological Processes	innate immune response activating cell surface receptor signaling pathway	-2.9
1386	GO Biological Processes	long-chain fatty acid transport	-2.9
1387	GO Biological Processes	response to cold	-2.9
1388	GO Biological Processes	leukocyte cell-cell adhesion	-2.9
1389	GO Biological Processes	intrinsic apoptotic signaling pathway by p53	-2.9
1390	GO Biological Processes	positive regulation of phospholipase activity	-2.9
1391	GO Biological Processes	regulation of lymphocyte differentiation	-2.9
1392	GO Biological Processes	regulation of cell cycle G1/S phase transition	-2.9
1393	GO Biological Processes	negative regulation of carbohydrate metabolic	-2.9
1394	GO Biological Processes	arachidonic acid metabolic process	-2.9
1395	GO Biological Processes	neural crest cell migration	-2.9
1396	GO Biological Processes	memory	-2.9
1397	GO Biological Processes	intracellular protein transport	-2.9
1398	GO Biological Processes	regulation of cell-matrix adhesion	-2.9
1399	GO Biological Processes	regulation of cell junction assembly	-2.9
1400	GO Biological Processes	negative regulation of leukocyte apoptotic	-2.9
1401	GO Biological Processes	regulation of viral-induced cytoplasmic pattern recognition receptor signaling pathway	-2.9
1402	GO Biological Processes	anatomical structure maturation	-2.9
1403	GO Biological Processes	odontogenesis	-2.9
1404	GO Biological Processes	positive regulation of transporter activity	-2.9
1405	GO Biological Processes	regulation of animal organ morphogenesis	-2.9
1406	GO Biological Processes	cardiac ventricle development	-2.9
1407	GO Biological Processes	positive regulation of lymphocyte mediated	-2.9
1408	GO Biological Processes	regulation of dephosphorylation	-2.9
1409	GO Biological Processes	collagen fibril organization	-2.9
1410	GO Biological Processes	mesenchymal cell migration	-2.9
1411	GO Biological Processes	embryonic digit morphogenesis	-2.9
1412	GO Biological Processes	protein stabilization	-2.9
1413	GO Biological Processes	embryonic skeletal system development	-2.8
1414	GO Biological Processes	positive regulation of cytokine-mediated	-2.8
1415	GO Biological Processes	regulation of endothelial cell apoptotic process	-2.8
1416	GO Biological Processes	peptidyl-lysine modification	-2.8
1417	GO Biological Processes	regulation of cell-substrate adhesion	-2.8
1418	GO Biological Processes	positive regulation of dephosphorylation	-2.8
1419	GO Biological Processes	sprouting angiogenesis	-2.8
1420	GO Biological Processes	response to endoplasmic reticulum stress	-2.8
1421	GO Biological Processes	establishment of cell polarity	-2.8
1422	GO Biological Processes	myeloid leukocyte mediated immunity	-2.8
1423	GO Biological Processes	leukocyte mediated cytotoxicity	-2.8
1424	GO Biological Processes	cellular aldehyde metabolic process	-2.8
1425	GO Biological Processes	SMAD protein signal transduction	-2.8
1426	GO Biological Processes	regulation of tumor necrosis factor-mediated	-2.8
1427	GO Biological Processes	synaptic signaling	-2.8
1428	GO Biological Processes	response to axon injury	-2.8
1429	GO Biological Processes	positive regulation of transcription initiation by	-2.8
1430	GO Biological Processes	regulation of vasoconstriction	-2.8
1431	GO Biological Processes	regulation of Wnt signaling pathway	-2.8
1432	GO Biological Processes	negative regulation of mitotic cell cycle	-2.8
1433	GO Biological Processes	regulation of pathway-restricted SMAD protein	-2.8
1434	GO Biological Processes	T cell differentiation in thymus	-2.8
1435	GO Biological Processes	response to fatty acid	-2.8
1436	GO Biological Processes	muscle contraction	-2.8
1437	GO Biological Processes	kidney epithelium development	-2.8

1438	GO Biological Processes	proteasome-mediated ubiquitin-dependent	-2.8
1439	GO Biological Processes	regulation of smooth muscle contraction	-2.7
1440	GO Biological Processes	regulation of interleukin-12 production	-2.7
1441	GO Biological Processes	regulation of lyase activity	-2.7
1442	GO Biological Processes	heart looping	-2.7
1443	GO Biological Processes	regulation of B cell proliferation	-2.7
1444	GO Biological Processes	lipid transport	-2.7
1445	GO Biological Processes	regulation of synapse organization	-2.7
1446	GO Biological Processes	regulation of phospholipase activity	-2.7
1447	GO Biological Processes	heterochromatin formation	-2.7
1448	GO Biological Processes	negative regulation of cell-substrate adhesion	-2.7
1449	GO Biological Processes	regulation of monoatomic cation transmembrane	-2.7
1450	GO Biological Processes	CD4-positive, alpha-beta T cell activation	-2.7
1451	GO Biological Processes	glycerolipid metabolic process	-2.7
1452	GO Biological Processes	olefinic compound metabolic process	-2.7
1453	GO Biological Processes	regulation of synapse structure or activity	-2.7
1454	GO Biological Processes	regulation of cardiac muscle tissue growth	-2.7
1455	GO Biological Processes	cell surface receptor signaling pathway involved	-2.7
1456	GO Biological Processes	positive regulation of cell projection	-2.7
1457	GO Biological Processes	phospholipid metabolic process	-2.7
1458	GO Biological Processes	positive regulation of Wnt signaling pathway	-2.7
1459	GO Biological Processes	regulation of blood coagulation	-2.7
1460	GO Biological Processes	regulation of cell-substrate junction	-2.6
1461	GO Biological Processes	negative regulation of lipid biosynthetic process	-2.6
1462	GO Biological Processes	phosphatidylcholine metabolic process	-2.6
1463	GO Biological Processes	determination of heart left/right asymmetry	-2.6
1464	GO Biological Processes	negative regulation of cell cycle phase transition	-2.6
1465	GO Biological Processes	monoatomic cation homeostasis	-2.6
1466	GO Biological Processes	embryonic heart tube morphogenesis	-2.6
1467	GO Biological Processes	selective autophagy	-2.6
1468	GO Biological Processes	positive regulation of telomere maintenance	-2.6
1469	GO Biological Processes	endothelial cell migration	-2.6
1470	GO Biological Processes	regulation of cellular component size	-2.6
1471	GO Biological Processes	protein complex oligomerization	-2.6
1472	GO Biological Processes	regulation of hemostasis	-2.6
1473	GO Biological Processes	cardiac ventricle morphogenesis	-2.6
1474	GO Biological Processes	circadian regulation of gene expression	-2.6
1475	GO Biological Processes	positive regulation of alpha-beta T cell activation	-2.6
1476	GO Biological Processes	positive regulation of synaptic transmission	-2.6
1477	GO Biological Processes	negative regulation of leukocyte cell-cell	-2.6
1478	GO Biological Processes	negative regulation of angiogenesis	-2.6
1479	GO Biological Processes	cardiac septum morphogenesis	-2.6
1480	GO Biological Processes	cranial skeletal system development	-2.6
1481	GO Biological Processes	regulation of transcription initiation by RNA	-2.6
1482	GO Biological Processes	cell part morphogenesis	-2.6
1483	GO Biological Processes	monoatomic ion homeostasis	-2.6
1484	GO Biological Processes	negative regulation of wound healing	-2.6
1485	GO Biological Processes	pancreas development	-2.6
1486	GO Biological Processes	regulation of alpha-beta T cell differentiation	-2.6
1487	GO Biological Processes	positive regulation of phagocytosis	-2.6
1488	GO Biological Processes	negative regulation of blood vessel	-2.6
1489	GO Biological Processes	negative regulation of vasculature development	-2.6
1490	GO Biological Processes	body fluid secretion	-2.6
1491	GO Biological Processes	regulation of coagulation	-2.6
1492	GO Biological Processes	regulation of heart growth	-2.6
1493	GO Biological Processes	proteasomal protein catabolic process	-2.6
1494	GO Biological Processes	negative regulation of transmembrane transport	-2.5
1495	GO Biological Processes	regulation of protein modification by small protein conjugation or removal	-2.5
1496	GO Biological Processes	adaptive immune response	-2.5
1497	GO Biological Processes	negative regulation of smooth muscle cell	-2.5
1498	GO Biological Processes	peptide secretion	-2.5
1499	GO Biological Processes	fat cell differentiation	-2.5
1500	GO Biological Processes	camera-type eye morphogenesis	-2.5
1501	GO Biological Processes	regulation of plasma membrane bounded cell	-2.5
1502	GO Biological Processes	regulation of immunoglobulin production	-2.5
1503	GO Biological Processes	regulation of epidermal growth factor receptor	-2.5
1504	GO Biological Processes	negative regulation of protein secretion	-2.5
1505	GO Biological Processes	heterochromatin organization	-2.5
1506	GO Biological Processes	negative regulation of tumor necrosis factor	-2.5
1507	GO Biological Processes	hair follicle development	-2.5
1508	GO Biological Processes	oligodendrocyte differentiation	-2.5
1509	GO Biological Processes	mitotic cell cycle process	-2.5
1510	GO Biological Processes	mitotic cell cycle phase transition	-2.5
1511	GO Biological Processes	regulation of cell projection organization	-2.5
1512	GO Biological Processes	outflow tract morphogenesis	-2.5
1513	GO Biological Processes	negative regulation of blood vessel endothelial	-2.5
1514	GO Biological Processes	negative regulation of tumor necrosis factor superfamily cytokine production	-2.5
1515	GO Biological Processes	defense response to virus	-2.5
1516	GO Biological Processes	developmental maturation	-2.4
1517	GO Biological Processes	defense response to symbiont	-2.4
1518	GO Biological Processes	establishment of organelle localization	-2.4
1519	GO Biological Processes	regulation of receptor signaling pathway via JAK-	-2.4
1520	GO Biological Processes	regulation of translational initiation	-2.4
1521	GO Biological Processes	hair cycle process	-2.4
1522	GO Biological Processes	molting cycle process	-2.4
1523	GO Biological Processes	myeloid cell homeostasis	-2.4
1524	GO Biological Processes	cell-matrix adhesion	-2.4
1525	GO Biological Processes	regulation of ERBB signaling pathway	-2.4
1526	GO Biological Processes	regulation of defense response to virus	-2.4
1527	GO Biological Processes	epithelial to mesenchymal transition	-2.4
1528	GO Biological Processes	regulation of vesicle-mediated transport	-2.4
1529	GO Biological Processes	G1/S transition of mitotic cell cycle	-2.4
1530	GO Biological Processes	regionalization	-2.4
1531	GO Biological Processes	regulation of muscle contraction	-2.4
1532	GO Biological Processes	carbohydrate transport	-2.4
1533	GO Biological Processes	negative regulation of G1/S transition of mitotic	-2.4
1534	GO Biological Processes	cell cycle phase transition	-2.4
1535	GO Biological Processes	glycerophospholipid metabolic process	-2.3
1536	GO Biological Processes	phenol-containing compound metabolic process	-2.3
1537	GO Biological Processes	regulation of cell size	-2.3
1538	GO Biological Processes	lipid oxidation	-2.3
1539	GO Biological Processes	regulation of transcription elongation by RNA	-2.3
1540	GO Biological Processes	cellular response to glucose stimulus	-2.3
1541	GO Biological Processes	negative regulation of autophagy	-2.3
1542	GO Biological Processes	peptide transport	-2.3
1543	GO Biological Processes	cell fate specification	-2.3
1544	GO Biological Processes	neuromuscular process	-2.3
1545	GO Biological Processes	response to calcium ion	-2.3
1546	GO Biological Processes	negative regulation of cell cycle process	-2.3
1547	GO Biological Processes	regulation of T cell differentiation	-2.3
1548	GO Biological Processes	negative regulation of secretion	-2.3
1549	GO Biological Processes	protein tetramerization	-2.3
1550	GO Biological Processes	cellular response to hexose stimulus	-2.3

1551	GO Biological Processes	nucleobase-containing small molecule metabolic	-2.3
1552	GO Biological Processes	regulation of endocytosis	-2.3
1553	GO Biological Processes	hippocampus development	-2.3
1554	GO Biological Processes	mucopolysaccharide metabolic process	-2.3
1555	GO Biological Processes	cellular response to monosaccharide stimulus	-2.3
1556	GO Biological Processes	negative regulation of gene expression,	-2.3
1557	GO Biological Processes	BMP signaling pathway	-2.3
1558	GO Biological Processes	epigenetic regulation of gene expression	-2.3
1559	GO Biological Processes	negative regulation of response to wounding	-2.3
1560	GO Biological Processes	positive regulation of cell division	-2.2
1561	GO Biological Processes	regulation of cell division	-2.2
1562	GO Biological Processes	regulation of lymphocyte mediated immunity	-2.2
1563	GO Biological Processes	hormone secretion	-2.2
1564	GO Biological Processes	integrin-mediated signaling pathway	-2.2
1565	GO Biological Processes	supramolecular fiber organization	-2.2
1566	GO Biological Processes	embryonic skeletal system morphogenesis	-2.2
1567	GO Biological Processes	protein homooligomerization	-2.2
1568	GO Biological Processes	regulation of leukocyte mediated cytotoxicity	-2.2
1569	GO Biological Processes	regulation of muscle adaptation	-2.2
1570	GO Biological Processes	negative regulation of cell cycle G1/S phase	-2.2
1571	GO Biological Processes	cell cycle checkpoint signaling	-2.2
1572	GO Biological Processes	regulation of Notch signaling pathway	-2.2
1573	GO Biological Processes	negative regulation of protein modification by small protein conjugation or removal	-2.2
1574	GO Biological Processes	positive regulation of mitotic cell cycle phase	-2.2
1575	GO Biological Processes	endothelium development	-2.2
1576	GO Biological Processes	negative regulation of endothelial cell migration	-2.2
1577	GO Biological Processes	cholesterol homeostasis	-2.2
1578	GO Biological Processes	hematopoietic progenitor cell differentiation	-2.2
1579	GO Biological Processes	regulation of plasma membrane bounded cell	-2.2
1580	GO Biological Processes	sterol homeostasis	-2.2
1581	GO Biological Processes	regulation of phagocytosis	-2.2
1582	GO Biological Processes	positive regulation of cold-induced	-2.2
1583	GO Biological Processes	autophagy	-2.2
1584	GO Biological Processes	process utilizing autophagic mechanism	-2.2
1585	GO Biological Processes	alpha-amino acid metabolic process	-2.2
1586	GO Biological Processes	pattern specification process	-2.2
1587	GO Biological Processes	regulation of cell projection assembly	-2.1
1588	GO Biological Processes	cellular response to leukemia inhibitory factor	-2.1
1589	GO Biological Processes	intracellular calcium ion homeostasis	-2.1
1590	GO Biological Processes	response to leukemia inhibitory factor	-2.1
1591	GO Biological Processes	canonical Wnt signaling pathway	-2.1
1592	GO Biological Processes	establishment or maintenance of cell polarity	-2.1
1593	GO Biological Processes	cellular response to carbohydrate stimulus	-2.1
1594	GO Biological Processes	cellular component morphogenesis	-2.1
1595	GO Biological Processes	pigmentation	-2.1
1596	GO Biological Processes	response to BMP	-2.1
1597	GO Biological Processes	hormone transport	-2.1
1598	GO Biological Processes	cellular response to BMP stimulus	-2.1
1599	GO Biological Processes	cell maturation	-2.1
1600	GO Biological Processes	negative regulation of mitotic cell cycle phase	-2.1
1601	GO Biological Processes	detection of stimulus	-2.1
1602	GO Biological Processes	anterior/posterior pattern specification	-2.1
1603	GO Biological Processes	regulation of cell cycle phase transition	-2.1
1604	GO Biological Processes	regulation of DNA-templated transcription	-2.1
1605	GO Biological Processes	regulation of heart rate	-2
1606	GO Biological Processes	DNA damage checkpoint signaling	-2
1607	GO Biological Processes	cardiac septum development	-2
1608	GO Biological Processes	reactive oxygen species metabolic process	-2
1609	GO Biological Processes	mitotic cell cycle	-2
1610	GO Biological Processes	regulation of synaptic plasticity	-2
1611	GO Biological Processes	positive regulation of canonical Wnt signaling	-2
1612	GO Biological Processes	positive regulation of chromosome organization	-2
1613	GO Biological Processes	carbohydrate catabolic process	-2
1614	GO Biological Processes	positive regulation of plasma membrane bounded cell projection assembly	-2
1615	GO Biological Processes	negative regulation of protein catabolic process	-3
1616	GO Biological Processes	striated muscle contraction	-2.7
1617	GO Biological Processes	glycosaminoglycan metabolic process	-2.6
1618	GO Biological Processes	regulation of protein ubiquitination	-2.6
1619	GO Biological Processes	purine ribonucleotide metabolic process	-2.5
1620	GO Biological Processes	regulation of GTPase activity	-2.5
1621	GO Biological Processes	generation of precursor metabolites and energy	-2.4
1622	GO Biological Processes	fertilization	-2.4
1623	GO Biological Processes	regulation of alpha-beta T cell activation	-2.3
1624	GO Biological Processes	DNA integrity checkpoint signaling	-2.2
1625	GO Biological Processes	ear development	-2.2
1626	GO Biological Processes	negative regulation of developmental growth	-2.1
1627	GO Biological Processes	negative regulation of epithelial cell migration	-2.1
1628	GO Biological Processes	regulation of monoatomic ion transmembrane	-2.1
1629	GO Biological Processes	glycoprotein metabolic process	-2
1630	GO Biological Processes	humoral immune response	-2
1631	GO Biological Processes	defense response to Gram-positive bacterium	-2
1632	GO Biological Processes	ATP metabolic process	-3
1633	GO Biological Processes	epidermal cell differentiation	-2.9
1634	GO Biological Processes	spermatogenesis	-3.4
1635	GO Biological Processes	chromatin remodeling	-2.2

Table S7. KEGG Pathway

No	Category	Description	logP	Protein
1	KEGG Pathway	Pathways in cancer	-54	AKT1, AR, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, CCNA2, CHUK, CTNNB1, EGFR, ESR1, ESR2, FGFR3, FN1, FOS, MTOR, HIF1A, IL6, ITGB1, JUN, MDM2, MITF, MMP1, MMP2, MMP9, NFE2L2, NFKB1, NFKBIA, NOS2, PIK3R1, PPARD, PPARG, MAPK1, MAPK3, MAPK8, PTGS2, PTK2, RARA, RARB, RPS6KB1, RXRA, RXRB, SHH, TGFB1, TGFBR2, TP53, IKBKG
2	KEGG Pathway	Lipid and atherosclerosis	-43	AKT1, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, CHUK, MAPK14, FOS, HSPA1A, IL1B, IL6, IRAK1, JUN, MMP1, MMP3, MMP9, NFE2L2, NFKB1, NFKBIA, PIK3R1, PPARG, MAPK1, MAPK3, MAPK8, PTK2, RXRA, RXRB, TLR4, TNF, TP53, IKBKG
3	KEGG Pathway	Hepatitis B	-36	IKBKG
4	KEGG Pathway	Toxoplasmosis	-33	AKT1, ALOX5, BAD, BCL2L1, CASP3, CASP8, CASP9, CHUK, MAPK14, HSPA1A, IRAK1, ITGB1, NFKB1, NFKBIA, NOS2, PIK3CG, MAPK1, MAPK3, MAPK8, TGFB1, TLR4, TNF, IKBKG
5	KEGG Pathway	Apoptosis	-33	AKT1, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, CHUK, CTSB, CTSD, CTSL, FOS, GZMB, JUN, NFKB1, NFKBIA, PIK3R1, PRF1, MAPK1, MAPK3, MAPK8, TNF, TP53, IKBKG
6	KEGG Pathway	TNF signaling pathway	-31	AKT1, CASP3, CASP8, CHUK, CREB1, MAPK14, FOS, IL1B, IL6, JUN, MMP3, MMP9, MMP14, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, PTGS2, TNF, IKBKG
7	KEGG Pathway	Endocrine resistance	-30	AKT1, BAD, BAX, MAPK14, EGFR, ESR1, ESR2, FOS, MTOR, GPER1, JUN, MDM2, MMP2, MMP9, PIK3R1, MAPK1, MAPK3, MAPK8, PTK2, RPS6KB1, TP53
8	KEGG Pathway	Chagas disease	-30	AKT1, CASP8, CHUK, MAPK14, FOS, IL1B, IL6, IRAK1, JUN, NFKB1, NFKBIA, NOS2, PIK3R1, MAPK1, MAPK3, MAPK8, TGFB1, TGFBR2, TLR4, TNF, IKBKG
9	KEGG Pathway	IL-17 signaling pathway	-29	CASP3, CASP8, CHUK, MAPK14, FOS, IL1B, IL6, JUN, MMP1, MMP3, MMP9, MMP13, NFKB1, NFKBIA, MAPK1, MAPK3, MAPK8, PTGS2, TNF, IKBKG
10	KEGG Pathway	Human cytomegalovirus infection	-29	AKT1, BAX, CASP3, CASP8, CASP9, CHUK, CREB1, MAPK14, CTNNB1, EGFR, MTOR, IL1B, IL6, MDM2, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, PTGS2, PTK2, RPS6KB1, TNF, TP53, IKBKG
11	KEGG Pathway	Kaposi sarcoma-associated herpesvirus infection	-29	AKT1, BAX, CASP3, CASP8, CASP9, CHUK, CREB1, MAPK14, CTNNB1, FOS, MTOR, HIF1A, IL6, JUN, NFKB1, NFKBIA, PIK3CG, PIK3R1, MAPK1, MAPK3, MAPK8, PTGS2, TP53, IKBKG
12	KEGG Pathway	Proteoglycans in cancer	-28	AKT1, CASP3, MAPK14, CTNNB1, CTSL, EGFR, ESR1, FN1, MTOR, HIF1A, ITGB1, MDM2, MMP2, MMP9, PIK3R1, MAPK1, MAPK3, PTK2, RPS6KB1, SHH, TGFB1, TLR4, TNF, TP53
13	KEGG Pathway	Human immunodeficiency virus 1 infection	-28	AKT1, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, CHUK, MAPK14, FOS, MTOR, IRAK1, JUN, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, PTK2, RPS6KB1, TLR4, TNF, IKBKG
14	KEGG Pathway	Small cell lung cancer	-27	AKT1, BAX, BCL2L1, CASP3, CASP9, CHUK, FN1, ITGB1, NFKB1, NFKBIA, NOS2, PIK3R1, PTGS2, PTK2, RARB, RXRA, RXRB, TP53, IKBKG
15	KEGG Pathway	Yersinia infection	-27	AKT1, CHUK, MAPK14, FN1, FOS, IL1B, IL6, IRAK1, ITGB1, JUN, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, PTK2, RPS6KA3, TLR4, TNF, IKBKG
16	KEGG Pathway	Measles	-27	AKT1, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, CHUK, FOS, HSPA1A, IL1B, IL6, IRAK1, JUN, NFKB1, NFKBIA, PIK3R1, MAPK8, TLR4, TP53, IKBKG
17	KEGG Pathway	Pancreatic cancer	-27	AKT1, BAD, BAX, BCL2L1, CASP9, CHUK, EGFR, MTOR, NFKB1, PIK3R1, MAPK1, MAPK3, MAPK8, RPS6KB1, TGFB1, TGFBR2, TP53, IKBKG
18	KEGG Pathway	Alcoholic liver disease	-27	ACACA, AKT1, CASP3, CASP8, CHUK, MAPK14, CTNNB1, FASN, IL1B, IL6, IRAK1, NFKB1, NFKBIA, PPARA, MAPK8, SCD, TLR4, TNF, IKBKG, SIRT1, NOX4
19	KEGG Pathway	Prostate cancer	-27	AKT1, AR, BAD, CASP9, CHUK, CREB1, CTNNB1, EGFR, MTOR, MDM2, MMP3, MMP9, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, TP53, IKBKG
20	KEGG Pathway	AGE-RAGE signaling pathway in diabetic complications	-26	AKT1, BAX, CASP3, MAPK14, FN1, IL1B, IL6, JUN, MMP2, NFKB1, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, TGFB1, TGFBR2, TNF, NOX4
21	KEGG Pathway	Shigellosis	-26	AKT1, BAX, BCL2L1, CHUK, MAPK14, EGFR, MTOR, IL1B, ITGB1, JUN, MDM2, NFKB1, NFKBIA, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, PTK2, RPS6KB1, TLR4, TNF, TP53, IKBKG
22	KEGG Pathway	Colorectal cancer	-26	AKT1, BAD, BAX, CASP3, CASP9, CTNNB1, EGFR, FOS, MTOR, JUN, PIK3R1, MAPK1, MAPK3, MAPK8, RPS6KB1, TGFB1, TGFBR2, TP53
23	KEGG Pathway	Th17 cell differentiation	-26	CHUK, MAPK14, FOS, MTOR, HIF1A, IL1B, IL6, JUN, NFKB1, NFKBIA, MAPK1, MAPK3, MAPK8, RARA, RXRA, RXRB, TGFB1, TGFBR2, IKBKG
24	KEGG Pathway	Tuberculosis	-25	AKT1, BAD, BAX, CASP3, CASP8, CASP9, CREB1, MAPK14, CTSD, CYP27B1, IL1B, IL6, IRAK1, NFKB1, NOS2, MAPK1, MAPK3, MAPK8, TGFB1, TLR4, TNF
25	KEGG Pathway	C-type lectin receptor signaling pathway	-24	AKT1, CASP8, CHUK, MAPK14, FOS, IL1B, IL6, IRAK1, JUN, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, TLR4, TNF, IKBKG
26	KEGG Pathway	Toll-like receptor signaling pathway	-24	AKT1, CASP8, CHUK, MAPK14, IL1B, IL6, JUN, MDM2, NFKB1, NFKBIA, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, PTGS2, TNF, IKBKG
27	KEGG Pathway	Osteoclast differentiation	-24	AKT1, CHUK, CREB1, MAPK14, FOS, IL1B, JUN, MITF, NFKB1, NFKBIA, PIK3R1, PPARG, MAPK1, MAPK3, MAPK8, TGFB1, TGFBR2, TNF, IKBKG
28	KEGG Pathway	Relaxin signaling pathway	-24	AKT1, CREB1, MAPK14, EGFR, FOS, JUN, MMP1, MMP2, MMP9, MMP13, NFKB1, NFKBIA, NOS2, PIK3R1, MAPK1, MAPK3, MAPK8, TGFB1, TGFBR2
29	KEGG Pathway	Hepatitis C	-24	AKT1, BAD, BAX, CASP3, CASP8, CASP9, CHUK, CTNNB1, EGFR, NFKB1, NFKBIA, PIK3R1, PPARA, MAPK1, MAPK3, RXRA, TNF, TP53, IKBKG, NR1H3
30	KEGG Pathway	Human papillomavirus infection	-23	AKT1, BAD, BAX, CASP3, CASP8, CCNA2, CHUK, CREB1, CTNNB1, EGFR, FN1, MTOR, ITGB1, MDM2, NFKB1, PIK3R1, MAPK1, MAPK3, PTGS2, PTK2, RPS6KB1, TNF, TP53, IKBKG
31	KEGG Pathway	MAPK signaling pathway	-23	AKT1, CASP3, CHUK, MAPK14, EGFR, FGFR3, FOS, HSPA1A, IL1B, IRAK1, JUN, NFKB1, PLA2G4A, MAPK1, MAPK3, MAPK8, RPS6KA3, TGFB1, TGFBR2, TNF, TP53, IKBKG, DUSP16
32	KEGG Pathway	Human T-cell leukemia virus 1 infection	-23	AKT1, BAX, BCL2L1, CCNA2, CHUK, CREB1, FOS, IL6, JUN, MMP7, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, TGFB1, TGFBR2, TNF, TP53, IKBKG
33	KEGG Pathway	Chemical carcinogenesis - reactive oxygen species	-23	ACP1, AKT1, BAD, CHUK, MAPK14, CYP1B1, EGFR, FOS, HIF1A, JUN, NFE2L2, NFKB1, NFKBIA, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, PTK2, IKBKG, NOX4
34	KEGG Pathway	PI3K-Akt signaling pathway	-22	AKT1, BAD, BCL2L1, CASP9, CHUK, CREB1, EGFR, FGFR3, FN1, MTOR, IL6, ITGB1, MDM2, NFKB1, PIK3CG, PIK3R1, MAPK1, MAPK3, PTK2, RPS6KB1, RXRA, TLR4, TP53, IKBKG
35	KEGG Pathway	Pathogenic Escherichia coli infection	-22	BAX, CASP3, CASP8, CASP9, CHUK, MAPK14, FOS, IL1B, IL6, IRAK1, ITGB1, JUN, NFKB1, NFKBIA, MAPK1, MAPK3, MAPK8, TLR4, TNF, IKBKG
36	KEGG Pathway	Estrogen signaling pathway	-22	AKT1, CREB1, CTSD, EGFR, ESR1, ESR2, FOS, GPER1, HSPA1A, JUN, KCNJ5, MMP2, MMP9, PIK3R1, PRKCD, MAPK1, MAPK3, RARA
37	KEGG Pathway	Epstein-Barr virus infection	-22	AKT1, BAX, CASP3, CASP8, CASP9, CCNA2, CHUK, MAPK14, IL6, IRAK1, JUN, MDM2, NFKB1, NFKBIA, PIK3R1, MAPK8, PSMC4, TNF, TP53, IKBKG
38	KEGG Pathway	PD-L1 expression and PD-1 checkpoint pathway in cancer	-22	AKT1, CHUK, MAPK14, EGFR, FOS, MTOR, HIF1A, JUN, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, RPS6KB1, TLR4, IKBKG
39	KEGG Pathway	Fluid shear stress and atherosclerosis	-22	AKT1, CHUK, MAPK14, CTNNB1, CTSL, FOS, IL1B, JUN, MMP2, MMP9, NFE2L2, NFKB1, PIK3R1, MAPK8, PTK2, TNF, TP53, IKBKG
40	KEGG Pathway	Salmonella infection	-22	AKT1, BAX, CASP3, CASP8, CHUK, MAPK14, CTNNB1, FOS, IL1B, IL6, IRAK1, JUN, NFKB1, NFKBIA, PIK3CG, MAPK1, MAPK3, MAPK8, TLR4, TNF, IKBKG
41	KEGG Pathway	Chemical carcinogenesis - receptor activation	-22	AKT1, AR, BAD, CREB1, CYP1B1, EGFR, ESR1, ESR2, FOS, MTOR, JUN, NFKB1, PIK3R1, PPARA, MAPK1, MAPK3, RPS6KA3, RPS6KB1, RXRA, RXRB
42	KEGG Pathway	Chronic myeloid leukemia	-21	CASP3, MAPK14, FOS, IL1B, IL6, IRAK1, ITGB1, JUN, NFKB1, NOS2, MAPK1, MAPK3, MAPK8, TLR4, TNF
43	KEGG Pathway	Pertussis	-21	AKT1, BAD, BAX, BCL2L1, CHUK, MDM2, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, TGFB1, TGFBR2, TP53, IKBKG
44	KEGG Pathway	Leishmaniasis	-21	MAPK14, FOS, IL1B, IRAK1, ITGB1, JUN, NFKB1, NFKBIA, NOS2, MAPK1, MAPK3, PTGS2, TGFB1, TLR4, TNF
45	KEGG Pathway	Non-alcoholic fatty liver disease	-21	AKT1, BAX, CASP3, CASP8, MAPK14, FOS, IL1B, IL6, JUN, NFKB1, PIK3R1, PPARA, PPARG, MAPK8, RXRA, TGFB1, TNF, NR1H3
46	KEGG Pathway	Transcriptional misregulation in cancer	-19	BAX, BCL2L1, CCNA2, ELANE, GZMB, IL6, MDM2, MITF, MMP3, MMP9, NFKB1, PPARG, PTK2, RARA, RXRA, RXRB, TGFBR2, TP53
47	KEGG Pathway	Coronavirus disease - COVID-19	-19	CHUK, MAPK14, EGFR, FOS, IL1B, IL6, IRAK1, JUN, MMP1, MMP3, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, TLR4, TNF, IKBKG
48	KEGG Pathway	Insulin resistance	-19	AKT1, CREB1, MTOR, IL6, NFKB1, NFKBIA, PIK3R1, PPARA, PRKCD, MAPK8, RPS6KA3, RPS6KB1, TNF, NR1H2, NR1H3
49	KEGG Pathway	Acute myeloid leukemia	-18	AKT1, BAD, CCNA2, CHUK, MTOR, NFKB1, PIK3R1, PPARD, MAPK1, MAPK3, RARA, RPS6KB1, IKBKG
50	KEGG Pathway	Gastric cancer	-18	AKT1, BAX, CTNNB1, EGFR, MTOR, PIK3R1, MAPK1, MAPK3, RARB, RPS6KB1, RXRA, RXRB, SHH, TGFB1, TGFBR2, TP53
51	KEGG Pathway	Neurotrophin signaling pathway	-18	AKT1, BAD, BAX, MAPK14, IRAK1, JUN, NFKB1, NFKBIA, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, RPS6KA3, TP53
52	KEGG Pathway	NOD-like receptor signaling pathway	-18	BCL2L1, CASP8, CHUK, MAPK14, CTSB, IL1B, IL6, JUN, NFKB1, NFKBIA, PRKCD, MAPK1, MAPK3, MAPK8, TLR4, TNF, IKBKG
53	KEGG Pathway	Thyroid hormone signaling pathway	-18	AKT1, BAD, CASP9, CTNNB1, ESR1, MTOR, HIF1A, MDM2, PIK3R1, MAPK1, MAPK3, RXRA, RXRB, TP53, HDAC3
54	KEGG Pathway	Platinum drug resistance	-18	AKT1, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, MDM2, PIK3R1, MAPK1, MAPK3, TP53, XPA
55	KEGG Pathway	Alzheimer disease	-18	AKT1, BAD, CASP3, CASP8, CASP9, CHUK, CTNNB1, MTOR, IL1B, IL6, NFKB1, NOS2, PIK3R1, MAPK1, MAPK3, MAPK8, PSMC4, PTGS2, TNF, IKBKG, NOX4
56	KEGG Pathway	Influenza A	-17	AKT1, BAX, CASP3, CASP8, CASP9, CHUK, IL1B, IL6, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, TLR4, TNF, IKBKG
57	KEGG Pathway	Non-small cell lung cancer	-16	AKT1, BAD, BAX, CASP9, EGFR, PIK3R1, MAPK1, MAPK3, RARB, RXRA, RXRB, TP53
58	KEGG Pathway	Viral carcinogenesis	-16	BAD, BAX, CASP3, CASP8, CCNA2, CREB1, JUN, MDM2, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, TP53, IKBKG, HDAC3
59	KEGG Pathway	Hepatocellular carcinoma	-16	AKT1, BAD, BAX, BCL2L1, CTNNB1, EGFR, MTOR, NFE2L2, PIK3R1, MAPK1, MAPK3, RPS6KB1, TGFB1, TGFBR2, TP53
60	KEGG Pathway	T cell receptor signaling pathway	-16	AKT1, CHUK, MAPK14, FOS, JUN, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, MAPK8, TNF, IKBKG
61	KEGG Pathway	EGFR tyrosine kinase inhibitor resistance	-16	AKT1, BAD, BAX, BCL2L1, EGFR, FGFR3, MTOR, IL6, PIK3R1, MAPK1, MAPK3, RPS6KB1
62	KEGG Pathway	Legionellosis	-16	CASP3, CASP8, CASP9, HSF1, HSPA1A, IL1B, IL6, NFKB1, NFKBIA, TLR4, TNF
63	KEGG Pathway	Autophagy - animal	-15	AKT1, BAD, BCL2L1, CTSB, CTSD, CTSL, MTOR, HIF1A, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, RPS6KB1
64	KEGG Pathway	Breast cancer	-15	AKT1, BAX, CTNNB1, EGFR, ESR1, ESR2, FOS, MTOR, JUN, PIK3R1, MAPK1, MAPK3, RPS6KB1, TP53
65	KEGG Pathway	Cellular senescence	-15	AKT1, CCNA2, MAPK14, MTOR, IL6, MDM2, NFKB1, PIK3R1, MAPK1, MAPK3, TGFB1, TGFBR2, TP53, SIRT1
66	KEGG Pathway	Pathways of neurodegeneration - multiple diseases	-15	BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, MAPK14, CTNNB1, MTOR, IL1B, IL6, NFKB1, NOS2, MAPK1, MAPK3, MAPK8, PSMC4, PTGS2, TNF, NOX4
67	KEGG Pathway	Adipocytokine signaling pathway	-15	AKT1, CHUK, MTOR, NFKB1, NFKBIA, PPARA, MAPK8, RXRA, RXRB, TNF, IKBKG
68	KEGG Pathway	Choline metabolism in cancer	-14	AKT1, EGFR, FOS, MTOR, HIF1A, JUN, PIK3R1, PLA2G4A, MAPK1, MAPK3, MAPK8, RPS6KB1
69	KEGG Pathway	FoxO signaling pathway	-14	AKT1, CHUK, MAPK14, EGFR, IL6, MDM2, PIK3R1, MAPK1, MAPK3, MAPK8, TGFB1, TGFBR2, SIRT1
70	KEGG Pathway	Prion disease	-14	BAD, BAX, CASP3, CASP9, CREB1, MAPK14, HSPA1A, IL1B, IL6, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, PSMC4, TNF
71	KEGG Pathway	HIF-1 signaling pathway	-14	AKT1, EGFR, MTOR, HIF1A, IL6, NFKB1, NOS2, PIK3R1, MAPK1, MAPK3, RPS6KB1, TLR4
72	KEGG Pathway	Endometrial cancer	-14	AKT1, BAD, BAX, CASP9, CTNNB1, EGFR, PIK3R1, MAPK1, MAPK3, TP53

73	KEGG Pathway	VEGF signaling pathway	-14	AKT1, BAD, CASP9, MAPK14, PIK3R1, PLA2G4A, MAPK1, MAPK3, PTGS2, PTK2
74	KEGG Pathway	ErbB signaling pathway	-14	AKT1, BAD, EGFR, MTOR, JUN, PIK3R1, MAPK1, MAPK3, MAPK8, PTK2, RPS6KB1
75	KEGG Pathway	Bladder cancer	-13	EGFR, FGFR3, MDM2, MMP1, MMP2, MMP9, MAPK1, MAPK3, TP53
76	KEGG Pathway	Diabetic cardiomyopathy	-13	AKT1, MAPK14, CTSD, MTOR, GSR, MMP2, MMP9, NFKB1, PIK3R1, PPARA, PRKCD, MAPK8, TGFB1, TGFBR2
77	KEGG Pathway	MicroRNAs in cancer	-13	CASP3, CYP1B1, DNMT1, EGFR, EZH2, FGFR3, MTOR, MDM2, MMP9, NFKB1, PIK3R1, MAPK1, MAPK3, PTGS2, TP53, SIRT1
78	KEGG Pathway	Prolactin signaling pathway	-13	AKT1, MAPK14, ESR1, ESR2, FOS, NFKB1, PIK3R1, MAPK1, MAPK3, MAPK8
79	KEGG Pathway	Melanoma	-13	AKT1, BAD, BAX, EGFR, MDM2, MITF, PIK3R1, MAPK1, MAPK3, TP53
80	KEGG Pathway	Amoebiasis	-13	CASP3, FN1, IL1B, IL6, NFKB1, NOS2, PIK3R1, PTK2, TGFB1, TLR4, TNF
81	KEGG Pathway	B cell receptor signaling pathway	-12	AKT1, CHUK, FOS, JUN, NFKB1, NFKBIA, PIK3R1, MAPK1, MAPK3, IKBKG
82	KEGG Pathway	Herpes simplex virus 1 infection	-12	AKT1, BAD, BAX, BCL2L1, CASP3, CASP8, CASP9, CHUK, MTOR, IL1B, IL6, IRAK1, NFKB1, NFKBIA, PIK3R1, TNF, TP53, IKBKG
83	KEGG Pathway	Thyroid cancer	-12	BAX, CTNNB1, PPARG, MAPK1, MAPK3, RXRA, RXRB, TP53
84	KEGG Pathway	AMPK signaling pathway	-12	AKT1, BAX, MAPK14, CTSD, NFKB1, PIK3R1, MAPK1, MAPK3, MAPK8, TNF, TP53
85	KEGG Pathway	Sphingolipid signaling pathway	-12	ACACA, AKT1, CCNA2, CREB1, FASN, MTOR, PIK3R1, PPARG, RPS6KB1, SCD, SIRT1
86	KEGG Pathway	Longevity regulating pathway	-12	AKT1, BAX, CREB1, MTOR, NFKB1, PIK3R1, PPARG, RPS6KB1, TP53, SIRT1
87	KEGG Pathway	Th1 and Th2 cell differentiation	-12	CHUK, MAPK14, FOS, JUN, NFKB1, NFKBIA, MAPK1, MAPK3, MAPK8, IKBKG
88	KEGG Pathway	Rheumatoid arthritis	-12	MAPK14, EGFR, JUN, MMP2, MMP14, PLA2G4A, PRKCD, MAPK1, MAPK3, MAPK8
89	KEGG Pathway	GnRH signaling pathway	-12	CTSL, FOS, IL1B, IL6, JUN, MMP1, MMP3, TGFB1, TLR4, TNF
90	KEGG Pathway	cAMP signaling pathway	-11	AKT1, BAD, CREB1, FOS, JUN, NFKB1, NFKBIA, PIK3R1, PPARA, MAPK1, MAPK3, MAPK8, ORAI1
91	KEGG Pathway	Fc epsilon RI signaling pathway	-11	AKT1, ALOX5, MAPK14, PIK3R1, PLA2G4A, MAPK1, MAPK3, MAPK8, TNF
92	KEGG Pathway	Central carbon metabolism in cancer	-11	CASP3, CHUK, MAPK14, EGFR, JUN, NFKB1, NFKBIA, MAPK8, IKBKG
93	KEGG Pathway	Epithelial cell signaling in Helicobacter pylori infection	-11	AKT1, EGFR, FGFR3, MTOR, HIF1A, PIK3R1, MAPK1, MAPK3, TP53
94	KEGG Pathway	Ras signaling pathway	-11	AKT1, BAD, BCL2L1, CHUK, EGFR, FGFR3, NFKB1, PIK3R1, PLA2G4A, MAPK1, MAPK3, MAPK8, IKBKG
95	KEGG Pathway	NF-kappa B signaling pathway	-11	BCL2L1, CHUK, IL1B, IRAK1, NFKB1, NFKBIA, PTGS2, TLR4, TNF, IKBKG
96	KEGG Pathway	Parathyroid hormone synthesis, secretion and action	-11	CREB1, CYP27B1, EGFR, FOS, MMP13, MMP14, MAPK1, MAPK3, RXRA, RXRB
97	KEGG Pathway	Chemokine signaling pathway	-11	AKT1, BAD, CHUK, NFKB1, NFKBIA, PIK3CG, PIK3R1, PRKCD, MAPK1, MAPK3, PTK2, IKBKG
98	KEGG Pathway	Glioma	-11	AKT1, BAX, EGFR, MTOR, MDM2, PIK3R1, MAPK1, MAPK3, TP53
99	KEGG Pathway	Focal adhesion	-11	AKT1, BAD, CTNNB1, EGFR, FN1, ITGB1, JUN, PIK3R1, MAPK1, MAPK3, MAPK8, PTK2
100	KEGG Pathway	Growth hormone synthesis, secretion and action	-10	AKT1, CREB1, MAPK14, FOS, MTOR, PIK3R1, MAPK1, MAPK3, MAPK8, PTK2
101	KEGG Pathway	Insulin signaling pathway	-9.8	ACACA, AKT1, BAD, FASN, MTOR, PIK3R1, MAPK1, MAPK3, MAPK8, RPS6KB1
102	KEGG Pathway	Inflammatory mediator regulation of TRP channels	-9.8	MAPK14, F2RL1, HRH1, IL1B, PIK3R1, PLA2G4A, PRKCD, MAPK8, TRPV1
103	KEGG Pathway	Renal cell carcinoma	-9.6	AKT1, BAD, HIF1A, JUN, PIK3R1, MAPK1, MAPK3, TGFB1
104	KEGG Pathway	RIG-I-like receptor signaling pathway	-9.5	CASP8, CHUK, MAPK14, NFKB1, NFKBIA, MAPK8, TNF, IKBKG
105	KEGG Pathway	Type II diabetes mellitus	-9.3	MTOR, PIK3R1, PRKCD, MAPK1, MAPK3, MAPK8, TNF
106	KEGG Pathway	PPAR signaling pathway	-9.3	MMP1, PPARA, PPARD, PPARG, RXRA, RXRB, SCD, NR1H3
107	KEGG Pathway	Cytosolic DNA-sensing pathway	-9.3	CASP3, CASP8, CHUK, IL1B, IL6, NFKB1, NFKBIA, IKBKG
108	KEGG Pathway	Platelet activation	-8.9	AKT1, MAPK14, ITGB1, PIK3CG, PIK3R1, PLA2G4A, MAPK1, MAPK3, ORAI1
109	KEGG Pathway	Antifolate resistance	-8.8	CHUK, IL1B, IL6, NFKB1, TNF, IKBKG
110	KEGG Pathway	Apoptosis - multiple species	-8.6	BAX, BCL2L1, CASP3, CASP8, CASP9, MAPK8
111	KEGG Pathway	Neutrophil extracellular trap formation	-8.4	AKT1, MAPK14, ELANE, MTOR, NFKB1, PIK3R1, MAPK1, MAPK3, TLR4, HDAC3
112	KEGG Pathway	GnRH secretion	-8.3	AKT1, ESR2, GPER1, KCNJ5, PIK3R1, MAPK1, MAPK3
113	KEGG Pathway	Inflammatory bowel disease	-8.2	IL1B, IL6, JUN, NFKB1, TGFB1, TLR4, TNF
114	KEGG Pathway	Progesterone-mediated oocyte maturation	-8.2	AKT1, CCNA2, MAPK14, PIK3R1, MAPK1, MAPK3, MAPK8, RPS6KA3
115	KEGG Pathway	Oxytocin signaling pathway	-8	EGFR, FOS, JUN, KCNJ5, PIK3CG, PLA2G4A, MAPK1, MAPK3, PTGS2
116	KEGG Pathway	mTOR signaling pathway	-8	AKT1, CHUK, MTOR, PIK3R1, MAPK1, MAPK3, RPS6KA3, RPS6KB1, TNF
117	KEGG Pathway	p53 signaling pathway	-7.8	BAX, BCL2L1, CASP3, CASP8, CASP9, MDM2, TP53
118	KEGG Pathway	Fc gamma R-mediated phagocytosis	-7	AKT1, PIK3R1, PLA2G4A, PRKCD, MAPK1, MAPK3, RPS6KB1
119	KEGG Pathway	Phospholipase D signaling pathway	-6.9	AKT1, EGFR, MTOR, PIK3CG, PIK3R1, PLA2G4A, MAPK1, MAPK3
120	KEGG Pathway	Rap1 signaling pathway	-6.9	AKT1, MAPK14, CTNNB1, EGFR, FGFR3, ITGB1, PIK3R1, MAPK1, MAPK3
121	KEGG Pathway	Melanogenesis	-6.9	CREB1, CTNNB1, MC1R, MITF, MAPK1, MAPK3, TYR
122	KEGG Pathway	Longevity regulating pathway - multiple species	-6.8	AKT1, MTOR, HSPA1A, PIK3R1, RPS6KB1, SIRT1
123	KEGG Pathway	Amyotrophic lateral sclerosis	-6.7	BAD, BAX, BCL2L1, CASP3, CASP9, MAPK14, MTOR, NOS2, PSMC4, TNF, TP53
124	KEGG Pathway	Regulation of actin cytoskeleton	-6.5	AKT1, EGFR, FGFR3, FN1, ITGB1, PIK3R1, MAPK1, MAPK3, PTK2
125	KEGG Pathway	Cholinergic synapse	-6.5	AKT1, CREB1, FOS, PIK3CG, PIK3R1, MAPK1, MAPK3
126	KEGG Pathway	Leukocyte transendothelial migration	-6.5	MAPK14, CTNNB1, ITGB1, MMP2, MMP9, PIK3R1, PTK2
127	KEGG Pathway	Huntington disease	-6.5	BAX, CASP3, CASP8, CASP9, CREB1, MTOR, PPARG, MAPK8, PSMC4, TP53
128	KEGG Pathway	Serotonergic synapse	-6.5	ALOX5, CASP3, KCNJ5, PLA2G4A, MAPK1, MAPK3, PTGS2
129	KEGG Pathway	Mitophagy - animal	-6.4	BCL2L1, HIF1A, JUN, MITF, MAPK8, TP53
130	KEGG Pathway	Graft-versus-host disease	-6.2	GZMB, IL1B, IL6, PRF1, TNF
131	KEGG Pathway	Natural killer cell mediated cytotoxicity	-6.1	CASP3, GZMB, PIK3R1, PRF1, MAPK1, MAPK3, TNF
132	KEGG Pathway	Apelin signaling pathway	-5.9	AKT1, MTOR, NOS2, PIK3CG, MAPK1, MAPK3, RPS6KB1
133	KEGG Pathway	Signaling pathways regulating pluripotency of stem cells	-5.8	AKT1, MAPK14, CTNNB1, FGFR3, PIK3R1, MAPK1, MAPK3
134	KEGG Pathway	Malaria	-5.8	IL1B, IL6, TGFB1, TLR4, TNF
135	KEGG Pathway	Ovarian steroidogenesis	-5.8	ALOX5, CYP1B1, HSD17B2, PLA2G4A, PTGS2
136	KEGG Pathway	Adherens junction	-5.8	ACP1, CTNNB1, EGFR, MAPK1, MAPK3, TGFBR2
137	KEGG Pathway	TGF-beta signaling pathway	-5.6	MAPK1, MAPK3, RPS6KB1, TGFB1, TGFBR2, TNF
138	KEGG Pathway	Necroptosis	-5.5	BAX, CASP8, IL1B, PLA2G4A, MAPK8, TLR4, TNF
139	KEGG Pathway	Parkinson disease	-5	BAX, BCL2L1, CASP3, CASP9, NFE2L2, MAPK8, PSMC4, TP53
140	KEGG Pathway	Bacterial invasion of epithelial cells	-4.9	CTNNB1, FN1, ITGB1, PIK3R1, PTK2
141	KEGG Pathway	African trypanosomiasis	-4.9	F2RL1, IL1B, IL6, TNF
142	KEGG Pathway	Dopaminergic synapse	-4.9	AKT1, CREB1, MAPK14, FOS, KCNJ5, MAPK8
143	KEGG Pathway	Antigen processing and presentation	-4.9	CREB1, CTSB, CTSL, HSPA1A, TNF
144	KEGG Pathway	Type I diabetes mellitus	-4.6	GZMB, IL1B, PRF1, TNF
145	KEGG Pathway	Retrograde endocannabinoid signaling	-4.6	MAPK14, KCNJ5, MAPK1, MAPK3, MAPK8, PTGS2
146	KEGG Pathway	Adrenergic signaling in cardiomyocytes	-4.5	AKT1, CREB1, MAPK14, PIK3CG, MAPK1, MAPK3
147	KEGG Pathway	Cushing syndrome	-4.5	CREB1, CTNNB1, EGFR, MAPK1, MAPK3, ORAI1
148	KEGG Pathway	Circadian entrainment	-4.4	CREB1, FOS, KCNJ5, MAPK1, MAPK3

149	KEGG Pathway	JAK-STAT signaling pathway	-4.3	AKT1, BCL2L1, EGFR, MTOR, IL6, PIK3R1
150	KEGG Pathway	cGMP-PKG signaling pathway	-4.3	AKT1, BAD, CREB1, PIK3CG, MAPK1, MAPK3
151	KEGG Pathway	Wnt signaling pathway	-4.3	CTNNB1, JUN, MMP7, PPARD, MAPK8, TP53
152	KEGG Pathway	Glucagon signaling pathway	-4.2	ACACA, AKT1, CREB1, PPARA, SIRT1
153	KEGG Pathway	Axon guidance	-4.1	ITGB1, PIK3R1, MAPK1, MAPK3, PTK2, SHH
154	KEGG Pathway	Viral myocarditis	-4.1	CASP3, CASP8, CASP9, PRF1
155	KEGG Pathway	Basal cell carcinoma	-4	BAX, CTNNB1, SHH, TP53
156	KEGG Pathway	Amphetamine addiction	-3.8	CREB1, FOS, JUN, SIRT1
157	KEGG Pathway	Oocyte meiosis	-3.8	AR, MAPK14, MAPK1, MAPK3, RPS6KA3
158	KEGG Pathway	Vascular smooth muscle contraction	-3.7	CALCA, PLA2G4A, PRKCD, MAPK1, MAPK3
159	KEGG Pathway	Spinocerebellar ataxia	-3.6	AKT1, MTOR, PIK3R1, MAPK8, PSMC4
160	KEGG Pathway	Thermogenesis	-3.5	CREB1, MAPK14, MTOR, PPARG, RPS6KA3, RPS6KB1
161	KEGG Pathway	Aldosterone-regulated sodium reabsorption	-3.4	PIK3R1, MAPK1, MAPK3
162	KEGG Pathway	Hypertrophic cardiomyopathy	-3.4	IL6, ITGB1, TGFB1, TNF
163	KEGG Pathway	Allograft rejection	-3.4	GZMB, PRF1, TNF
164	KEGG Pathway	Pyruvate metabolism	-3.1	ACACA, GLO1, HAGH
165	KEGG Pathway	Cocaine addiction	-3	CREB1, JUN, NFKB1
166	KEGG Pathway	Fatty acid metabolism	-2.8	ACACA, FASN, SCD
167	KEGG Pathway	Regulation of lipolysis in adipocytes	-2.8	AKT1, PIK3R1, PTGS2
168	KEGG Pathway	Long-term depression	-2.8	PLA2G4A, MAPK1, MAPK3
169	KEGG Pathway	Arachidonic acid metabolism	-2.8	ALOX5, PLA2G4A, PTGS2
170	KEGG Pathway	Lysosome	-2.8	CTSB, CTSD, CTSL, GLB1
171	KEGG Pathway	Steroid hormone biosynthesis	-2.7	CYP1B1, HSD11B1, HSD17B2
172	KEGG Pathway	Long-term potentiation	-2.6	MAPK1, MAPK3, RPS6KA3
173	KEGG Pathway	Chemical carcinogenesis - DNA adducts	-2.6	CREB1, CTSB, ORAI1
174	KEGG Pathway	Renin secretion	-2.6	CYP1B1, HSD11B1, PTGS2
175	KEGG Pathway	Calcium signaling pathway	-2.6	EGFR, FGFR3, HRH1, NOS2, ORAI1
176	KEGG Pathway	Endocytosis	-2.5	EGFR, FGFR3, HSPA1A, MDM2, TGFBR2
177	KEGG Pathway	Cell cycle	-2.5	CCNA2, MDM2, TGFB1, TP53
178	KEGG Pathway	Protein processing in endoplasmic reticulum	-2.4	BAX, HSPA1A, NFE2L2, MAPK8
179	KEGG Pathway	Gap junction	-2.3	EGFR, MAPK1, MAPK3
180	KEGG Pathway	Cytokine-cytokine receptor interaction	-2.2	IL1B, IL6, TGFB1, TGFBR2, TNF
181	KEGG Pathway	Alcoholism	-2.2	CREB1, MAPK1, MAPK3, HDAC3
182	KEGG Pathway	Dilated cardiomyopathy	-2.2	ITGB1, TGFB1, TNF
183	KEGG Pathway	Aldosterone synthesis and secretion	-2.2	CREB1, KCNJ5, ORAI1
184	KEGG Pathway	Hematopoietic cell lineage	-2.2	IL1B, IL6, TNF
185	KEGG Pathway	Glutamatergic synapse	-2	PLA2G4A, MAPK1, MAPK3

Table S8. Final Targets for GG and CD

No	Compound	Number of Targets
1	Demethoxycurcumin	33
2	1,5-Bis(4-Hydroxy-3-Methoxyphenyl)-1,4-Pentadien-3-One	32
3	(3S)-2,3-dimethylpentane	30
4	curcumin	30
5	1-(4-hydroxy-3-methoxyphenyl)-5-(4-hydroxyphenyl)-penta-(1E,4E)-1,4-dien-3-one	29
6	(E)-4-(4-hydroxy-3-methoxyphenyl)but-3-en-2-one	29
7	(1E,4Z,6E)-5-Hydroxy-1,7-Bis(4-Hydroxyphenyl)Hepta-1,4,6-Trien-3-One	28
8	Isoliquiritigenin	27
9	Homobutein	27
10	Liquoric acid	27
11	(E) ferulic acid	27
12	Licoagrochalcone A	26
13	Docosyl-3,4-dihydroxy-trans-cinnamate	26
14	Glicophenone	25
15	bisdemethoxy curcumin	25
16	1-(4-hydroxy-3-methoxyphenyl)-7-(3, 4-dihydroxyphenyl)-1,6-heptadiene-3, 5-dione	25
17	1,7-Bis(4-Hydroxy-3-Methoxyphenyl)-1,4,6-Heptatrien-3-One	25
18	Topazolin	24
19	Kanzonol W	24
20	Corylifol B	24
21	Glypallichalcone	24
22	(Z)-1-(2,4-dihydroxyphenyl)-3-phenylprop-2-en-1-one	24
23	1,7-bis(4-hydroxyphenyl)-1-heptene-3,5-dione: R1= H, R2= H	24
24	4-[(Z)-2-(3-Methoxyphenyl)Ethenyl]Phenol	24
25	1,7-Bis(4-Hydroxyphenyl)-1,4,6-Heptatrien-3-One	24
26	Isovitexin	23
27	Betulinic acid	23
28	Glycyrol	23
29	Isoglycyrol	23
30	ursolic acid	23
31	tetrahydroxycurcumin	23
32	linoleic acid	23
33	18-β-glycyrrhetinic acid	22
34	Genkwanin	22
35	Isobavachalcone	22

36	Afrormosin	22
37	Licochalcone C	22
38	Sigmoidin B	22
39	Glycyrin	22
40	Senegalensin	22
41	Licoagrochalcone C	22
42	Anaphalisoleanenoic acid	22
43	oleanolic acid	22
44	isorhamnetin	22
45	(E)-3-[3,4-dihydroxy-5-(3-methylbut-2-enyl)phenyl]-1-(2,4-dihydroxyphenyl)prop-2-en-1-one	22
46	Liquiritic acid	22
47	1-(4-hydroxyphenyl)-7-(3, 4-dihydroxyphenyl)-1,6-heptadiene-3, 5-dione	22
48	calebin-A	22
49	Tetramethoxycurcumin	22
50	Arachidonic Acid	22
51	4-Hydroxybenzoic acid	22
52	glabrocoumarone A	21
53	Isobavachin	21
54	Gancaonin I	21
55	Licoflavone A	21
56	Licoagrone	21
57	erybacin B	21
58	9(11)-Dehydroglycyrrhetic acid	21
59	Isotrifoliol	21
60	Gancaonin A	21
61	Uralene	21
62	7,2',4'-trihydroxy – 5-methoxy-3 – arylcoumarin	21
63	isoeugenol	21
64	Isokaempferide	20
65	Gancaonin Q	20
66	Galangin	20
67	Kaempferol	20
68	Licoflavonol	20
69	Hirsutrin	20
70	Rutin	20
71	Puerarin	20
72	Glyinflanin A	20

73	Licochalcone D	20
74	Isoliquiritigenin 4,4'-diglucoside	20
75	1-Methoxyphaseollidin	20
76	Gancaonin L	20
77	Gancaonin F	20
78	Calycosin 7-O-glucoside	20
79	Kanzonol Y	20
80	Kanzonol V	20
81	Glyasperin C	20
82	Licochalcone E	20
83	3,4-Didehydroglabridin	20
84	Dehydroglyasperin C	20
85	Dehydroglyceollin I	20
86	Uralsaponin Y	20
87	Narcissoside	20
88	3-(2-hydroxy-4-methoxyphenyl)-2H-chromen-7-ol	20
89	Gancaonin B	20
90	Gancaonin C	20
91	Isoononin	20
92	1,5-bis(4-hydroxyphenyl)-penta-(1E,4E)-1,4-dien-3-one	20
93	lignoceric acid	20
94	Î±-cedrene	20
95	Cyclovalone	20
96	p-Coumaric acid	20
97	Dihydroferulic acid	20
98	isoliquiritin	19
99	glabridin	19
100	Licochalcone A	19
101	glabrocoumarone B	19
102	Semilicoisoflavone B	19
103	15,15'-cis-Phytoene	19
104	Ononin	19
105	Prunetin	19
106	7,4'-Dihydroxyflavone	19
107	Kumatakenin	19
108	Gancaonin P	19
109	Echinatin	19

110	Glyinflanin B	19
111	Kanzonol B	19
112	Abyssinone II	19
113	Licoricone	19
114	Isoderrone	19
115	Lupiwighteone	19
116	Isoglycycoumarin	19
117	Afrormosin 7-O-glucoside	19
118	Licoagrochalcone B	19
119	Folerogenin	19
120	Licochalcone G	19
121	Glabric acid	19
122	Izoforon	19
123	beta-Terpinene	19
124	Pentadecanol	19
125	Nortangeretin	19
126	neoisoliquiritin	19
127	24-Hydroxyglycyrrhetic acid	19
128	3,4,3',4'-Tetrahydroxy-2-methoxychalcone	19
129	Zerumbone	19
130	(+)-Germacrene D	19
131	Glabrene	18
132	ethyl linoleate	18
133	Genistein	18
134	Wighteone	18
135	beta-Amyrin	18
136	7,4'-Dihydroxyflavone 7-glucoside	18
137	Sophoraflavone B	18
138	Isolicoflavonol	18
139	Astragalin	18
140	Licochalcone B	18
141	Kanzonol C	18
142	Licoflavanone	18
143	3-Hydroxyglabrol	18
144	3'-Hydroxydaidzein	18
145	Hydroxywighteone	18
146	Phaseol	18

147	Kanzonol Z	18
148	Isolupalbigenin	18
149	Glyasperin K	18
150	Uralstilbene	18
151	Isoglabrolide	18
152	Desoxoglabrolide	18
153	Glabraisoflavanone A	18
154	Glycyrrhetol	18
155	icos-5-enoic acid	18
156	gadelaidic acid	18
157	Licorice glycoside A	18
158	quercetin	18
159	vanillic acid	18
160	undecanol	18
161	heptadecanoic acid	18
162	oleic acid	18
163	Î²-vatirenene	18
164	Campesterol	18
165	Limonene	18
166	Glucoliquiritin apioside	17
167	Glycycoumarin	17
168	isoangustone A	17
169	Luteone	17
170	Lupeol	17
171	Norwogonin 7-glucuronide	17
172	Tephrinone	17
173	Euchrenone a5	17
174	7-Hydroxy-2-methylisoflavone	17
175	Glyzarin	17
176	Odoratin	17
177	6,8-Diprenylgenistein	17
178	Angustone A	17
179	Licoricidin	17
180	Glycyroside	17
181	Afrormosin 7-O-(6''-malonylglucoside)	17
182	Macarangaflavanone B	17
183	Licoagroside A	17

184	Tachioside	17
185	Glyasperin B	17
186	Liquiritigenin 7,4'-diglucoside	17
187	Glycyuralin E	17
188	Uralsaponin C	17
189	Hedysarimcoumestan B	17
190	protocatechuic acid	17
191	nicotiflorin	17
192	Neouralenol	17
193	Glepidotin A	17
194	glabrolide	17
195	18alpha-Hydroxyglycyrrhetic acid	17
196	octahydrocurcumin	17
197	1,7-bis(4-hydroxyphenyl)-3-hydroxy-1,3-heptadien-5-one	17
198	pentadecanoic acid	17
199	turmerol	17
200	Labda-8(17),12-diene-15,16-dial	17
201	hexahydrocurcumin	17
202	Shikimic acid	17
203	L-Tryptophan	17
204	sitosterol	17
205	Liquiritin	16
206	shinpterocarpin	16
207	Licocoumarin	16
208	Biochanin A	16
209	Cycloartenol	16
210	Wogonoside	16
211	Glyasperin A	16
212	Uralenol	16
213	Glabrol	16
214	Glycitein	16
215	Licoisoflavone B	16
216	4'-O-Methylglabridin	16
217	Gancaonin G	16
218	Licoagroaurone	16
219	Licoagrocarpin	16
220	licoricesaponin E2	16

221	Glicoricone	16
222	Isoglabrone	16
223	3,3',5'-Trihydroxy-4-methoxybibenzyl	16
224	Kanzonol L	16
225	WLN: 4OVR	16
226	Yinyanghuo D	16
227	3,22-Dihydroxy-11-oxo-delta(12)-oleanene-27-alpha-methoxycarbonyl-29-oic acid	16
228	Licoagroisoflavone	16
229	palmitic acid	16
230	Palmitoleic acid	16
231	8,11-octadecadienoic acid, methyl ester	16
232	eugenol	16
233	stigmasterol	16
234	anethole	16
235	beta-Himachalene	16
236	Anethole	16
237	Glycyrrhizin	15
238	prenyllicoflavone A	15
239	Glisoflavone	15
240	Hispaglabridin A	15
241	Hispaglabridin B	15
242	licopyranocoumarin	15
243	benzoic acid	15
244	Glabranin	15
245	Naringin	15
246	Formononetin	15
247	Kanzonol D	15
248	Glyinflanin G	15
249	Daidzein	15
250	Licoisoflavanone	15
251	2'-Hydroxyisolupalbigenin	15
252	Pinocembroside	15
253	Licoagrochalcone D	15
254	Licoagrodin	15
255	Glyasperin F	15
256	Licofuranocoumarin	15
257	Glyasperin M	15

258	Glycyrrhisoflavone	15
259	Glabroisoflavanone B	15
260	4-Hydroxylonchocarpin	15
261	Liqcoumarin	15
262	Glyurallin B	15
263	Uralsaponin F	15
264	Uralsaponin M	15
265	alpha,beta-Dihydrorhaponticin	15
266	Cordifolin	15
267	Morusin	15
268	Scopoletol	15
269	Calycosin	15
270	Gancaonin D	15
271	Gancaonin T	15
272	Gancaonin V	15
273	4H-1-Benzopyran-4-one, 2-(4-(beta-D-glucopyranosyloxy)phenyl)-2,3-dihydro-5,7-dihydroxy-, (2S)-	15
274	neoliquiritin	15
275	Cyclobutanol, 1-ethyl-	15
276	2-Tetradecanone	15
277	6â€³-O-acetylliquiritin	15
278	Kanzonol E	15
279	p-mentha-1,4 (8)-diene	15
280	stearic acid	15
281	arachidic acid	15
282	docosanoic acid	15
283	gitoxigenin	15
284	20-oxopregn-16-en-12-yl acetate	15
285	Docusate	15
286	(S)(+)Carvone	15
287	Arachic acid	15
288	liquiritigenin	14
289	licuraside	14
290	licoriphenone	14
291	hexanol	14
292	Xenognosin B	14
293	Naringenin	14
294	Pratensein	14

295	Isoglabranin	14
296	Glabrone	14
297	Parvisoflavone A	14
298	Isomucronulatol	14
299	Shinflavanone	14
300	Scanderone	14
301	Kanzonol X	14
302	Eurycarpin A	14
303	Araboglycyrrhizin	14
304	Uralsaponin B	14
305	Apioglycyrrhizin	14
306	3'-Hydroxy-4'-O-methylglabridin	14
307	2-Caren-10-al	14
308	kanzonol K	14
309	Uralenol-3-methylether	14
310	Daidzein dimethyl ether	14
311	Kanzonol H	14
312	cyclocurcumin	14
313	borneol	14
314	menth-1-en-9-ol	14
315	zingerone	14
316	geraniol	14
317	Myristic acid	14
318	(+)-Curcuphenol	14
319	Alpha-Bisabolol	14
320	L-Tyrosine	14
321	Geraniol	14
322	Alpha terpineol	14
323	glyzaglabrin	13
324	1- methoxyficifolinol	13
325	Pentanol	13
326	Geranylgeranyl diphosphate	13
327	Licoisoflavone A	13
328	Licuroside	13
329	Liquiritin apioside	13
330	7-Methoxy-2-methylisoflavone	13
331	3'-Methoxyglabridin	13

332	Gancaonin H	13
333	Licocoumarone	13
334	Gancaonin U	13
335	Isotachioside	13
336	Glyasperin D	13
337	licoricesaponin A3	13
338	1-Methoxyphaseollin	13
339	Uralsaponin P	13
340	Uralsaponin W	13
341	Uralsaponin X	13
342	24-Hydroxy-licoricesaponin A3	13
343	Glycyrrhetic acid 3-O-glucuronide	13
344	Medicarpin	13
345	licorice glycoside E	13
346	Licoriisoflavan A	13
347	Artonin E	13
348	PENTYLFURAN	13
349	trans-chrysanthenyl acetate	13
350	linalool	13
351	cis-sabinol	13
352	turmeronol A	13
353	procurcumadiol	13
354	geranyl acetate	13
355	Linolenic acid	13
356	Tetrahydrocurcumin	13
357	Xanthorrizol	13
358	Dihydrochrysin	12
359	Isomedicarpin	12
360	Edudiol	12
361	Licoarylcoumarin	12
362	Gancaonin R	12
363	Kanzonol T	12
364	licoricesaponin B2	12
365	Licoricesaponin C2	12
366	5,6,7,8-Tetrahydro-4-methylquinoline	12
367	(-)-Medicocarpin	12
368	Kanzonol F	12

369	7-Acetoxy-2-methylisoflavone	12
370	Glycyrrhiza flavonol A	12
371	Licorice saponin H2	12
372	isopulegol	12
373	2-methoxy-4-vinylphenol	12
374	O-cymene	12
375	cis-p-menth-2,8-dienol	12
376	Î³-elemene	12
377	Germacron	12
378	bisacumol	12
379	bergamotene	12
380	zerumbone	12
381	Citronellol	12
382	Inositol	12
383	Mevalonic acid	11
384	(-)-Phaseollinisoflavan	11
385	Sophoraisoflavone A	11
386	Angustone B	11
387	Gancaonin S	11
388	3-Methyl-2-butenyl 6-O-alpha-L-arabinopyranosyl-beta-D-glucopyranoside	11
389	licoricesaponin J2	11
390	Uralsaponin T	11
391	5,6,7,8-Tetrahydro-2,4-dimethylquinoline	11
392	Kanzonol Q	11
393	Inermine	11
394	vitexin	11
395	2-Ethyl-p-xylene	11
396	Vestitol	11
397	2-heptanone	11
398	2-menthen-1-ol	11
399	2,6,11,15-tetramethylhexadeca-2,6,8,10,14-pentaene	11
400	Î±-atlantone	11
401	2,5-dihydroxybisabola-3,10-diene	11
402	Nerolidiol	11
403	Ribitol	11
404	Vicenin-2	10
405	Isoviolanthin	10

406	Rocymosin B	10
407	(S)-2,3-Epoxysqualene	10
408	Xambioona	10
409	Tachiogroside B	10
410	Glabroisoflavanone A	10
411	Licoricesaponin D3	10
412	butylated hydroxytoluene	10
413	violanthin	10
414	DIBP	10
415	1,8-cineol	10
416	4-isopropenyl-1,2-dimethylcyclohexane-2-enol	10
417	curcumenol	10
418	zedoarondiol	10
419	Ethylbenzene	10
420	Farnesol	10
421	D-Pinitol	9
422	Glabrocoumarin	9
423	uralenneoside	9
424	Isoschaftoside	9
425	Mipax	9
426	2-isopropylidene-3-methylhexa-3,5-dienal	9
427	curlone	9
428	Î±-thujone	9
429	Gamma-terpinene	9
430	Dehydrocurdione	9
431	alpha-D-Glucose	9
432	Isopropyl pyrophosphate	8
433	(E)-1-butoxyhex-2-ene	8
434	3-hydroxy-1,7-bis-(4-hydroxyphenyl)-6-heptene-1,5-dione	8
435	germacrone-13-al	8
436	Curcumol	8
437	Carvacrol	8
438	L-Glutamic acid	8
439	L-Leucine	8
440	L-Valine	8
441	kanzonol R	7
442	Schaftoside	7

443	phytol	7
444	1,6,10,14-hexadecatetraen-3-ol,3,7,11,15-tetramethyl-, (E,E)-	7
445	Î±-turmerone	7
446	4,7,7-Trimethylbicyclo[2.2.1]Heptan-3-One	7
447	Erythritol	7
448	uridine	7
449	D-Fructose	7
450	Prunasin	6
451	sodium curcuminate	6
452	Î²-pinene	6
453	Î²-cedrene	6
454	Phenol	6
455	Dehydrodeguelin	6
456	butyric acid	5
457	Î²-elemene	5
458	Benzaldehyde	5
459	Succinic acid	5
460	L-Threonine	5
461	Citric acid	5
462	(1S,2S)-1,2-dimethylcyclopentane	4
463	Sextone B	4
464	Myrcene	4
465	hemellitol	4
466	Ar-turmerone	4
467	Methyl benzoate	4
468	toluene	4
469	Chlorothalonil	4
470	Citronellyl Acetate	4
471	Lactic acid	4
472	2,3 Butanediol	3
473	Propionic acid	3
474	o-xylene	3
475	m-xylene	3
476	p-xylene	3
477	Citramalic acid	3
478	L-Alanine	3
479	L-Asparagine	3

480	Malic acid	3
481	4,2',4',alpha-Tetrahydroxydihydrochalcone	2
482	Glycerol	2
483	beta-Alanine	2
484	L-Aspartic acid	2
485	L-Serine	2
486	Pyruvic acid	1
487	Cyclotetradecane	1
488	Isoheptane	1
489	Heptan	1
490	Methylheptane	1
491	2,2-DIMETHYLPENTANE	1
492	2,3-dimethylhexane	1
493	(4S)-2,4-Dimethylhexane	1
494	3,3-Dimethylpentane	1
495	3-methylheptane	1
496	3-methylhexane	1
497	3-Ethylpentane	1
498	(Z)-Î²-ocimene (cisocimene)	1
499	Aconitic acid	1