Table S1. STAT Activators

#	Sample ID	Series	AC50 (uM)					Curve Class					Known Bioactive	Activity Class
			qHTS	F/U	ME 180	AP-1	HRE	qHTS	F/U	ME-180	AP-1	HRE		
1	NCGC00013330-01	1	2.8	5.0	-	-	0.4	2.2	3	4	4	2.1		
2	NCGC00015103-01	1	3.2	28	-	13	-	3	2	4	1.2	4	Adenosine	Adenosine
3	NCGC00017087-01	1	3.5	25	-	2.2	-	2.2	3	4	1.2	4	Adenosine 5'-monophosphate	Adenosine
4	NCGC00015640-01	1	4.5	7.9	-	6.6	17	3	2	4	3.1	-1.1	Metrifudil	Adenosine
5	NCGC00023033-01	3	2.0	40	-	-	6.3	1.2	3	4	4	-2.2		
6	NCGC00023809-01	3	2.2	6.3	-	-	10	1.2	2	4	4	-3		
7	NCGC00023395-01	3	5.0	18	-	-	-	2.2	3	4	4	4		
8	NCGC00023870-01	3	5.6	7.1	10	7.9	11	2.1	2	1.1	3	2.1		
9	NCGC00022105-01	4	4.5	16	20	-	7.9	2.2	2.1	2.1	4	2.1		
10	NCGC00023433-01	4	7.1	14	18	-	10	2.2	1.1	2.1	4	2.2		
11	NCGC00023681-01	4	10	11	11	7.9	7.1	2.2	2	2.1	2.2	2.2		
12	NCGC00022658-01	5	1.4	3.5	-	-	11	1.1	2.1	4	4	-3		
13	NCGC00022189-01	5	1.8	7.9	-	5.0	-	2.1	1.1	4	1.2	4		
14	NCGC00023763-01	5	7.1	4.0	7.9	8.9	10	2.2	1.1	2	2.1	2.1		
15	NCGC00022944-01	5	10	20	-	5.6	11	-2.2	-2	4	-2.2	-3		
16	NCGC00015411-02	10	1.1	14	-	1.8	5.3	1.1	1.1	4	3.1	-2.2	Ellipticine	Cell Cycle
17	NCGC00014511-01	10	1.8	2.8	-	5.0	-	2.1	2	4	-3	4		
18	NCGC00022199-01	10	2.2	13	-	0.6	5.0	1.1	1.1	4	1.2	-1.2		
19	NCGC00014455-01	10	3.5	11	22	-	-	2.1	2	3	4	4		
20	NCGC00015411-01	10	6.3	13	28	2.8	25	2.1	2.1	2	3.1	-2.2	Ellipticine	Cell Cycle
21	NCGC00021168-01	12	10	28	11	10	-	2.2	3	2	2.2	4		
22	NCGC00015551-01	13	3.2	2.8	-	10	1.8	2.1	2	4	-1.1	-1.1	Idarubicin	DNA Metabolism
23	NCGC00014377-01	13	3.2	7.1	-	-	4.5	2.1	2	4	4	-3		
24	NCGC00014611-01	13	3.2	11	-	-	2.5	2.2	1.1	4	4	-2.1		
25	NCGC00016791-01	13	4.0	10	-	-	1.6	1.1	1.1	4	4	-1.1	Doxorubicin	DNA Metabolism
26	NCGC00024415-01	13	5.0	3.2	-	13	0.7	2.1	2	4	-3	-1.2		
27	NCGC00014417-01	S	0.4	3.2	-	-	-	1.2	3	4	4	4		
28	NCGC00021240-01	S	1.1	14	-	-	3.2	2.2	3	4	4	-1.2		
29	NCGC00023017-01	S	1.3	8.9	-	-	-	1.2	1.2	4	4	4		
30	NCGC00014421-01	S	1.4	10	-	-	2.8	3	1.1	4	4	-2.1		
31	NCGC00014652-01	S	2.0	20	-	-	-	2.2	2	4	4	4		
32	NCGC00017210-01	S	3.2	0.6	-	28	-	2.2	3	4	-3	4		
33	NCGC00014696-01	S	3.2	18	-	-	-	2.2	2.1	4	4	4		
34	NCGC00014873-01	S	4.0	8.9	-	-	5.0	2.1	1.1	4	4	-3		
35	NCGC00022141-01	S	4.5	7.9	-	-	-	2.2	1.2	4	4	4		
36	NCGC00021861-01	S	5.6	13	-	-	-	2.2	2	4	4	4		
37	NCGC00016622-01	S	8.9	22	-	-	-	2.2	2	4	4	4	Hycanthone	DNA Metabolism
38	NCGC00015334-01	S	10	20	-	12	1.1	3	2	4	3.1	1.1	Diphenyleneiodonium chloride	Nitric Oxide
39	NCGC00021235-01	S	10	25	-	-	13	2.2	3	4	4	-2.2		
40	NCGC00023808-01	S	0.6	1.4	0.5	1.1	3.5	1.1	1.1	2.1	1.2	1.1		
41	NCGC00017054-01	S	5.6	20	8.9	10	7.5	3	2	1.1	-3	2.1	Harmaline	Monamine Oxidase
42	NCGC00016186-01	S	8.9	32	10	10	17	3	3	3	1.2	2.1	Phenamil methanesulfonate	Na+ Channel
43	NCGC00021922-01	S	2.0	13	13	-	-	3	1.1	1.1	4	4		
44	NCGC00016491-01	S	6.3	13	14	3.5	3.3	2.2	2	2.1	3.1	2.1	Esculin	
45	NCGC00017057-01	S	13	16	16	-	3.5	3	2.1	3	4	-1.2	Quinacrine	
46	NCGC00014952-01	S	2.8	6.3	22	-	-	2.2	2	2	4	4		
47	NCGC00015113-01	S	3.2	25	32	18	23	2.2	2.2	3	2.1	2.1	Amsacrine	DNA Repair

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Table S2. STAT Inhibitors

#	Sample ID	Series	AC50 (uM)					Curve Class					Known Bioactive	Activity Class
			qHTS	F/U	ME 180	AP-1	HRE	qHTS	F/U	ME-180	AP-1	HRE		
48	NCGC00015229-01	15	4.0	5.0	-	9.3	18	-1.1	-1.1	4	-1.1	2.2	CGP-74514A	Phosphorylation
49	NCGC00015814-01	15	7.9	6.3	-	12	24	-2.1	-1.1	4	-2.1	-2.2	Purvalanol A	Phosphorylation
50	NCGC00017252-01	16	3.5	13	-	7.9	2.5	-2.1	-1	4	-1.1	-1.1		
51	NCGC00021686-01	18	10	20	-	-	-	3	3	4	4	4		
52	NCGC00015404-01	20	1.0	0.6	-	1.5	0.9	-1.1	-1.1	4	-1.1	-1.1	Emetine	Apoptosis
53	NCGC00015729-01	22	4.0	6.3	-	32	5.8	-1.1	-1.1	4	-2.1	-1.1	NSC 95397	Phosphorylation
54	NCGC00015870-03	23	2.5	13	-	11	-	-3	-2.1	4	-2.2	4		
55	NCGC00014216-01	24	2.8	13	-	-	-	-2.1	-2.1	4	4	4		
56	NCGC00023032-01	27	10	20	-	8.9	5.0	-2.2	-2.1	4	-2.2	-2.2		
57	NCGC00022294-01	28	2.8	20	-	8.9	2.2	-1.2	-2	4	-2.2	-1.2		
58	NCGC00024124-01	28	3.2	13	-	-	3.2	-3	-3	4	4	-1.2		
59	NCGC00021487-01	28	5.0	20	-	7.9	2.5	-2.2	-3	4	-2.2	-2.2		
60	NCGC00022623-01	29	4.5	18	-	11	7.9	-2.2	-2	4	-3	-2.2		
61	NCGC00023460-01	29	7.9	25	-	2.8	8.9	-2.2	-3	4	1.2	-2.2		
62	NCGC00017231-01	31	1.8	32	-	2.5	0.02	-2.1	-3	4	-1.1	-1.1		
63	NCGC00017350-01	S	0.1	13	-	32	14	-1.2	-1.1	4	-3	-1.2		
64	NCGC00013326-01	S	0.2	32	-	0.0	-	-2.2	-3	4	-3	4		
65	NCGC00014616-01	S	0.3	0.2	-	0.1	0.01	-1.1	-1.1	4	-1.1	-1.1		
66	NCGC00014615-01	S	0.4	0.4	-	0.2	0.03	-1.1	-1.1	4	-1.1	-1.1		
67	NCGC00014099-01	S	2.5	6.3	-	-	3.2	-2.2	-1.1	3	4	2.2		
68	NCGC00014332-01	S	2.5	8.9	-	-	2.2	-2.2	-1.1	4	4	-2.2		
69	NCGC00014922-01	S	2.5	10	-	1.8	0.04	-2.2	-1.1	4	-2.1	-1.1		
70	NCGC00014212-01	S	2.8	7.9	-	-	-	-2.1	-1.1	4	4	4		
71	NCGC00014524-01	S	2.8	13	-	-	-	-2.2	-1.1	4	4	4		
72	NCGC00014261-01	S	3.2	3.2	-	3.2	0.1	-2.1	-2.1	2	-3	-1.1		
73	NCGC00023231-01	S	3.2	11	-	2.0	2.8	-3	-2	4	-1.2	-1.2		
74	NCGC00013026-01	S	3.2	16	-	-	-	-2.2	-3	4	4	4		
75	NCGC00022382-01	S	3.2	18	-	2.2	3.5	-1.2	-2	4	-2.2	-1.2		
76	NCGC00015478-01	S	3.5	11	-	5.8	3.8	-1.2	-1.1	4	-3	1.1	GW5074	Phosphorylation
77	NCGC00015706-01	S	3.5	13	-	-	5.3	-3	-3	4	4	3	Me-3,4-dephostatin	Phosphorylation
78	NCGC00023438-01	S	4.0	14	-	7.9	-	-2.2	-3	4	-2.2	4		
79	NCGC00015981-01	S	4.5	4.0	-	5.8	4.5	-2.1	-1.1	4	-1.2	2.2	SU 6656	Phosphorylation
80	NCGC00022198-01	S	4.5	4.0	-	-	-	-2.2	-3	4	4	4		
81	NCGC00022729-01	S	5.0	13	-	2.5	4.0	-1.2	-2.1	4	-1.2	-1.2		
82	NCGC00023723-01	S	5.0	28	-	11	6.3	-3	-3	4	-2.2	-2.2		
83	NCGC00015272-01	S	6.3	8.9	-	10	5.6	-3	-1.1	4	-1.1	-1.1	Cantharidic Acid	Phosphorylation
84	NCGC00021523-01	S	6.3	13	-	11	0.1	-2.2	-3	4	-3	-3		
85	NCGC00022583-01	S	6.3	20	-	8.9	2.8	-3	-2	4	-2.2	-2.2		
86	NCGC00024102-01	S	6.3	25	-	3.5	11	-3	-3	4	-3	-3		
87	NCGC00022635-01	S	6.3	25	-	-	8.9	-2.2	-3	4	4	2.2		
88	NCGC00021685-01	S	6.3	32	-	8.9	0.2	-2.2	-3	4	-3	-1.1		
89	NCGC00021159-01	S	7.1	7.1	-	10	3.2	-2.2	-2	4	-2.2	-3		
90	NCGC00024153-01	S	7.1	13	-	10	5.6	-2.2	-2	4	-2.1	-1.2		
91	NCGC00024104-01	S	7.1	18	-	-	7.9	-2.2	-3	4	4	-2.2		
92	NCGC00023125-01	S	7.1	25	-	13	7.9	-2.2	-3	4	-3	2.2		
93	NCGC00015330-01	S	7.9	18	-	-	6.8	-3	-2	4	4	3.1	Ribofuranosyl-benzimidazole	Transcription
94	NCGC00022672-01	S	7.9	25	-	6.3	3.2	-2.2	-2	4	-2.2	-1.2		
95	NCGC00022775-01	S	8.9	13	-	10	2.2	-3	-3	4	-2.2	-1.2		
96	NCGC00015796-01	S	10	28	-	0.9	13	-3	-2	4	-3	3	Parthenolide	Serotonin
97	NCGC00014329-01	S	3.2	4.0	13	4.0	5.0	-2.1	-1	2	-3	-3		
98	NCGC00023621-01	S	10	18	20	10	-	-2.2	-3	3	-2.2	4		
99	NCGC00014517-01	S	1.0	2.0	22	-	-	-1.2	-1.2	3	4	4		
100	NCGC00022015-01	S	7.9	14	32	6.3	4.5	-2.2	-3	3	-2.2	-1.2		