



**Supplementary figure 1. Tofacitinib acts as a selective JAK inhibitor and increased the production of TNF and IL-12 in LPS stimulated macrophages.**

- A) Tofacitinib was screened at 0.1 or 1  $\mu$ M against a panel of 121 kinases *in vitro* as described in the methods. For the graph in (A) kinases were then ranked in order of the percentage activity remaining at 0.1  $\mu$ M Tofacitinib.
- B) *In vitro* kinases assays were performed in duplicate with either JAK1, JAK2, JAK3 or Tyk2 with the indicated concentrations of either Tofacitinib or Ruxolitinib. Results are show as % kinase activity remaining compared to no inhibitor controls.
- C) Wild type BMDMs were pre-treated with 5  $\mu$ M Tofacitinib where indicated and then stimulated with 100 ng/ml LPS for the indicated times. Levels of TNF $\alpha$ , IL-12p70, IL-12p40 and IL-6 secreted into the media were determined by Luminex based multiplex assay. Error bars represent the standard deviation form 4 independent cultures.

Supplementary Table 1 Kinase selectivity screens for Ruxolitinib, Tofacitinib and AG-490

The percentage *in vitro* kinase activity remaining relative to no inhibitor controls was determined using *in vitro* kinase assays as described in the methods. Data represents the average and range of duplicate measurements for each condition.  
n.d. = not determined

kinase	0.1 $\mu$ M Ruxolitinib		1 $\mu$ M Ruxolitinib		0.1 $\mu$ M Tofacitinib		1 $\mu$ M Tofacitinib		10 $\mu$ M AG-490	
	% activity	range	% activity	range	% activity	range	% activity	range	% activity	range
ABL	100	5	101	2	103	13	116	10	87	9
AMPK	107	6	89	10	83	1	95	5	105	2
ASK1	107	3	77	8	105	7	130	11	n.d.	
Aurora A	86	18	26	0	93	8	119	16	64	3
Aurora B	112	10	95	7	69	6	92	8	64	3
BRK	101	4	84	11	80	18	92	7	n.d.	
BRSK1	92	6	78	17	73	2	92	7	85	5
BRSK2	93	3	92	3	82	5	101	3	75	0
BTK	76	12	58	2	96	6	94	11	85	13
CAMK1	91	10	58	0	93	1	111	2	106	4
CAMKKb	100	17	104	2	139	15	116	10	109	7
CDK2-Cyclin A	96	11	57	6	69	4	116	37	111	11
CHK1	99	0	106	7	86	13	88	1	119	15
CHK2	97	10	65	14	106	7	95	9	52	6
CK1	94	11	74	6	105	4	109	9	88	5
CK2	90	25	77	6	92	1	97	7	99	5
CLK2	73	2	21	2	106	10	108	1	102	5
CSK	91	23	63	6	84	7	78	3	95	6
DAPK1	88	39	61	64	145	5	123	11	94	11
DYRK1A	101	3	67	1	102	1	92	7	24	2
DYRK2	95	17	86	12	99	14	103	5	50	5
DYRK3	103	17	107	3	110	18	116	2	44	5
EF2K	82	15	83	12	103	1	100	2	91	5
EIF2AK3	89	2	94	2	114	8	97	9	n.d.	
EPH-A2	98	29	62	1	106	6	114	19	92	5
EPH-A4	85	4	58	5	121	2	109	3	94	10
EPH-B1	71	2	48	4	93	4	93	4	93	5
EPH-B2	132	38	79	7	91	10	121	12	87	7
EPH-B3	96	9	86	9	103	8	85	5	117	15
EPH-B4	78	9	59	0	131	46	120	4	97	6
ERK1	101	16	92	17	108	5	97	4	83	13
ERK2	115	15	102	3	99	17	97	10	105	9
ERK8	86	29	47	4	121	1	121	6	83	5
FGF-R1	79	9	34	4	42	4	85	3	93	4
GCK	86	9	44	2	87	0	109	7	102	7
GSK3b	100	8	62	4	110	2	108	9	78	3
HER4	106	6	90	5	116	8	121	19	62	11
HIPK1	102	4	95	6	90	4	112	4	85	1
HIPK2	94	3	69	2	128	21	117	6	83	0
HIPK3	116	3	114	7	109	14	108	3	103	1
IGF-1R	94	11	100	5	109	9	104	11	119	5
IKKb	101	18	76	15	126	3	105	2	89	3
IKKe	105	33	46	5	90	7	87	8	88	0
IR	95	9	89	1	87	8	105	9	115	6
IRAK1	63	12	19	4	111	4	106	3	n.d.	
IRAK4	89	27	97	7	80	1	87	0	103	1

IRR	97	22	65	22	102	3	103	5	58	1
JAK2	3	1	2	1	3	1	4	0	98	4
JNK1	84	26	79	15	81	5	80	3	88	5
JNK2	105	37	89	13	88	9	94	4	99	6
JNK3	101	27	94	1	107	10	119	12	91	7
Lck	95	1	69	8	30	0	73	9	97	2
LKB1	106	36	87	13	95	5	101	9	94	11
MAPKAP-K2	102	13	102	9	91	11	82	7	112	10
MAPKAP-K3	89	1	101	2	118	7	91	4	122	6
MARK1	96	7	55	3	63	1	82	10	95	5
MARK2	97	6	42	7	85	4	98	1	77	3
MARK3	56	22	13	6	33	4	94	16	70	12
MARK4	94	20	88	1	86	1	93	2	98	9
MEKK1	89	31	89	6	83	80	97	7	99	6
MELK	81	11	42	7	74	5	115	12	79	4
MINK1	122	27	94	5	90	9	96	7	93	6
MKK1	108	10	73	6	67	6	105	6	82	9
MKK2	99	4	93	4	112	20	110	3	109	2
MKK6	95	5	101	8	89	2	97	8	93	12
MLK1	82	13	34	2	90	8	86	5	52	5
MLK3	65	20	27	5	75	1	83	12	65	6
MNK1	81	9	66	5	115	0	100	11	98	2
MNK2	88	11	39	1	64	10	97	2	102	3
MPSK1	104	4	101	5	83	14	94	10	n.d.	
MSK1	84	0	29	1	76	15	83	10	28	5
MST2	97	28	68	8	64	12	79	7	101	2
MST4	140	31	105	24	109	0	87	8	86	0
NEK2a	108	22	82	1	107	32	102	16	65	2
NEK6	84	10	83	22	90	5	87	3	95	13
NUAK1	89	24	26	1	30	2	74	5	58	4
OSR1	80	30	40	3	94	12	112	9	n.d.	
p38 $\alpha$ MAPK	85	15	83	1	103	4	100	1	82	3
p38 $\beta$ MAPK	97	16	79	18	115	3	106	12	95	0
p38 $\delta$ MAPK	67	22	66	3	108	17	101	7	99	3
p38 $\gamma$ MAPK	94	15	86	5	130	9	115	6	129	1
PAK2	88	24	84	9	114	2	99	2	88	11
PAK4	96	3	57	0	116	16	104	10	89	10
PAK5	94	15	72	4	94	4	86	7	99	5
PAK6	96	10	70	1	116	10	100	3	106	4
PDK1	101	37	66	8	123	3	107	14	103	6
PHK	60	3	15	0	85	11	96	2	98	11
PIM1	101	16	85	3	101	8	112	5	53	0
PIM2	87	5	90	12	121	21	102	5	93	10
PIM3	90	13	85	10	114	9	124	12	25	1
PKA	95	11	53	2	89	1	94	4	98	11
PKBa	93	24	77	15	125	4	115	1	117	4
PKBb	86	15	87	4	92	6	85	9	52	7
PKCa	88	14	67	5	71	0	96	0	107	7
PKCz	100	21	95	1	106	20	100	21	105	5
PKCy	93	8	80	2	102	5	99	11	n.d.	
PKD1	101	6	67	16	106	27	92	4	92	3
PLK1	108	1	95	6	121	18	128	7	119	4
PRAK	83	16	84	3	123	7	113	10	77	4

PRK2	84	5	61	7	22	0	50	2	91	8
RIPK2	108	17	78	4	92	3	91	9	96	11
ROCK 2	60	9	59	59	46	9	95	15	78	4
RSK1	82	6	68	9	76	23	96	6	85	11
RSK2	92	4	81	3	86	2	91	3	109	4
S6K1	79	23	53	2	77	16	88	0	96	4
SGK1	100	13	75	10	106	19	92	2	18	2
SmMLCK	93	22	67	6	104	3	105	3	94	15
Src	67	14	62	4	90	7	92	5	56	1
SRPK1	85	13	67	4	89	8	84	6	92	2
STK33	108	1	84	7	103	19	98	4	n.d.	
SYK	96	18	83	30	152	16	131	7	86	9
TAK1	85	2	60	1	113	34	115	7	116	1
TAO1	104	1	85	15	103	4	104	12	125	10
TBK1	82	16	46	0	83	19	99	6	107	2
TIE2	98	4	78	3	106	19	99	1	n.d.	
TLK1	82	3	80	8	104	8	100	3	n.d.	
TrkA	32	1	18	3	87	11	106	13	85	8
TTK	95	7	44	2	115	7	99	3	76	1
VEG-FR	102	32	56	10	58	10	99	5	86	14
YES1	75	10	59	5	65	4	104	3	72	4
ZAP70	95	7	92	16	125	3	133	0	n.d.	