

Number		Exact p values	Statistical methods	Biological replicate numbers
Figure1	Fig.1b-PWT-day7	$p < 0.0001$ SNI vs. Ctrl	Two-way ANOVA	n = 12
	Fig.1b-PWT-day14	$p < 0.0001$ SNI vs. Ctrl	Two-way ANOVA	n = 12
	Fig.1b-PWT-day21	$p < 0.0001$ SNI vs. Ctrl	Two-way ANOVA	n = 12
	Fig.1b-LLF-day7	$p < 0.0001$ SNI vs. Ctrl	Two-way ANOVA	n = 12
	Fig.1b-LLF-day14	$p < 0.0001$ SNI vs. Ctrl	Two-way ANOVA	n = 12
	Fig.1b-LLF-day21	$p < 0.0001$ SNI vs. Ctrl	Two-way ANOVA	n = 12
	Fig.1c	$p < 0.0001$ SNI vs. Ctrl	Student's t test	n = 7
	Fig.1g P2X4R	$p < 0.0001$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.1g IL-1 β	$p = 0.000177$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.1g IL-6	$p = 0.000017$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.1g CXCR4	$p = 0.000022$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.1h AcH3	$p < 0.0001$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.1h AcH4	$p < 0.0001$ SNI vs. Ctrl	Student's t test	n = 6
Figure2	Fig.2a H3K9ac	$p = 0.000085$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a H3K14ac	$p = 0.003820$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a H3K18ac	$p = 0.000004$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a H3K27ac	$p = 0.000003$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a H4K5ac	$p = 0.000021$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a H4K8ac	$p = 0.000078$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a H4K12ac	$p = 0.000213$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2a	$p = 0.000642$ SNI vs. Ctrl	Student's t test	n = 6

	H4K16ac	Ctrl		
	Fig.2b p300	$p = 0.000031$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2b Tip60	$p = 0.002564$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2b CBP	$p = 0.010212$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2b GCN5	$p = 0.444884$ SNI vs. Ctrl	Student's t test	n = 6
	Fig.2c H3K9ac	$p = 0.0097$ LPS/ATP vs. Blank; $p = 0.0124$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H3K14ac	$p = 0.0016$ LPS/ATP vs. Blank; $p = 0.7989$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H3K18ac	$p = 0.0013$ LPS/ATP vs. Blank; $p = 0.7529$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H3K27ac	$p = 0.0013$ LPS/ATP vs. Blank; $p = 0.0005$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H4K5ac	$p = 0.0002$ LPS/ATP vs. Blank; $p = 0.0059$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H4K8ac	$p = 0.0007$ LPS/ATP vs. Blank; $p = 0.0018$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H4K12ac	$p = 0.0265$ LPS/ATP vs. Blank; $p = 0.4299$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2c H4K16ac	$p < 0.0001$ LPS/ATP vs. Blank; $p = 0.1729$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2d H3K9ac	$p < 0.0001$ LPS/ATP vs. Blank; $p < 0.0001$ LPS/ATP+C646 vs.	One-way ANOVA, Tukey's test	n = 4

		LPS/ATP.		
	Fig.2d H3K27ac	$p < 0.0001$ LPS/ATP vs. Blank; $p < 0.0001$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 4
	Fig.2d H4K8ac	$p < 0.0001$ LPS/ATP vs. Blank; $p = 0.0002$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 4
	Fig.2d H4K5ac	$p = 0.0052$ LPS/ATP vs. Blank; $p = 0.0080$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 4
	Fig.2e	$p < 0.0001$ LPS/ATP vs. Blank; $p < 0.0001$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2f BV2	$p = 0.0339$ LPS/ATP vs. Blank; $p = 0.0202$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
	Fig.2f pMG	$p < 0.0001$ LPS/ATP vs. Blank; $p < 0.0001$ LPS/ATP+C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 3
Figure3	Fig.3d T.Dis	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p = 0.0006$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
	Fig.3d TIC	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p = 0.0095$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
	Fig.3d PWT	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p = 0.0002$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
	Fig.3d FLLT	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p < 0.0001$ SNI(mKO) vs.	Two-way ANOVA	n = 6

		SNI(mCtrl).		
	Fig.3f p300	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p < 0.0001$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
	Fig.3f P2X4R	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p < 0.0001$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
	Fig.3f IL-6	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p < 0.0001$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
	Fig.3f IL-1 β	$p < 0.0001$ SNI(mCtrl) vs. Sham(mCtrl); $p < 0.0001$ SNI(mKO) vs. SNI(mCtrl).	Two-way ANOVA	n = 6
Figure4	Fig.4a	<i>Brd2</i> : $p = 0.7659$ SNI vs. Ctrl; <i>Brd3</i> : $p > 0.9999$ SNI vs. Ctrl; <i>Brd4</i> : $p < 0.0001$ SNI vs. Ctrl;	Student's t test	n = 6
	Fig.4b	$p < 0.0001$ SNI vs. Ctrl;	t test	n = 6
	Fig.4d T.Dis	$p < 0.0001$ SNI vs. Ctrl; $p < 0.0001$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	n = 6
	Fig.4d T.I.C.	$p < 0.0001$ SNI vs. Ctrl; $p < 0.0001$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	n = 6
	Fig.4e PWT	<i>Day7</i> : $p = 0.000012$ SNI vs. Ctrl; $p = 0.655569$ SNI+JQ1 vs. SNI; <i>Day14</i> : $p = 0.000639$ SNI vs. Ctrl; $p = 0.066234$ SNI+JQ1 vs. SNI; <i>Day21</i> : $p = 0.000014$	Two-way ANOVA	n = 6

		SNI vs. Ctrl; $p = 0.9028286$ SNI+JQ1 vs. SNI;		
	Fig.4e LLF	Day7: $p = 0.000050$ SNI vs. Ctrl; $p = 0.682137$ SNI+JQ1 vs. SNI; Day14: $p < 0.000001$ SNI vs. Ctrl; $p = 0.001353$ SNI+JQ1 vs. SNI; Day21: $p = 0.000011$ SNI vs. Ctrl; $p = 0.001213$ SNI+JQ1 vs. SNI.	Two-way ANOVA	$n = 6$
	Fig.4f AP frequency	$p = 0.0003$ SNI vs. Ctrl; $p = 0.0049$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	$n = 7$
	Fig.4f Ca ²⁺	$p < 0.0001$ SNI vs. Ctrl; $p < 0.0001$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	$n = 5$
	Fig.4h P2X4R	$p < 0.0001$ SNI vs. Ctrl; $p < 0.0001$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	$n = 6$
	Fig.4h IL-6	$p < 0.0001$ SNI vs. Ctrl; $p < 0.0001$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	$n = 6$
	Fig.4h CXCR4	$p < 0.0001$ SNI vs. Ctrl; $p = 0.0007$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	$n = 6$
	Fig.4h IL-1 β	$p < 0.0001$ SNI vs. Ctrl; $p < 0.0001$ SNI+JQ1 vs. SNI.	One-way ANOVA, Tukey's test	$n = 6$
Figure5	Fig.5f WB	$p = 0.0003$ SNI vs. Ctrl	t test	$n = 4$
	Fig.5f ChIP	$p = 0.0312$ SNI vs. Ctrl	t test	$n = 3$
	Fig.5g pP2rx4-lucWT	$p < 0.0001$ LPS/ATP vs. Ctrl; $p < 0.0001$ LPS/ATP+Plica vs. LPS/ATP;	One-way ANOVA, Tukey's test	$n = 3$
	Fig.5g Mut	$p < 0.0001$ LPS/ATP	Two-way	$n = 3$

		(WT) vs. Ctrl (WT); $p < 0.0001$ LPS/ATP (WT) vs. LPS/ATP (Mut1); $p < 0.0001$ LPS/ATP (WT) vs. LPS/ATP (Mut2); $p = 0.2193$ LPS/ATP (WT) vs. LPS/ATP (Mut3);	ANOVA	
	Fig.5h Plica	P2X4R: $p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0005$ LPS/ATP+Plica vs. LPS/ATP; SP1: $p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0002$ LPS/ATP +Plica vs. LPS/ATP;	Two-way ANOVA	n = 3
	Fig.5h siRNA	P2X4R: $p = 0.0001$ LPS/ATP (siR-NC) vs. Ctrl (siR-NC); $p < 0.0001$ LPS/ATP (siR-SP1) vs. LPS/ATP (siR-NC); SP1: $p < 0.0001$ LPS/ATP (siR-NC) vs. Ctrl (siR-NC); $p < 0.0001$ LPS/ATP (siR-SP1) vs. LPS/ATP (siR-NC);	Two-way ANOVA	n = 3
Figure6	Fig.6a IP-p300	BRD4: $p = 0.0053$ LPS/ATP vs. Ctrl; $p = 0.0202$ LPS/ATP +C646 vs. LPS/ATP; SP1: $p = 0.0003$ LPS/ATP vs. Ctrl; $p = 0.0148$ LPS/ATP +C646 vs. LPS/ATP;	One-way ANOVA, Tukey's test	n = 3
	Fig.6a IP-BRD4	SP1: $p = 0.0004$ LPS/ATP vs. Ctrl; $p = 0.0034$ LPS/ATP +C646 vs. LPS/ATP;	One-way ANOVA, Tukey's test	n = 3

		p300: $p = 0.0004$ LPS/ATP vs. Ctrl; $p = 0.0021$ LPS/ATP +C646 vs. LPS/ATP;		
	Fig.6a IP-SP1	BRD4: $p = 0.0022$ LPS/ATP vs. Ctrl; $p = 0.0041$ LPS/ATP +C646 vs. LPS/ATP; p300: $p = 0.0014$ LPS/ATP vs. Ctrl; $p = 0.0071$ LPS/ATP +C646 vs. LPS/ATP;	One-way ANOVA, Tukey's test	n = 3
	Fig.6b C646	p300: $p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0001$ LPS/ATP +C646 vs. LPS/ATP; BRD4: $p = 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0185$ LPS/ATP +C646 vs. LPS/ATP; SP1: $p < 0.0001$ LPS/ATP vs. Ctrl; $p < 0.0001$ LPS/ATP +C646 vs. LPS/ATP.	One-way ANOVA, Tukey's test	n = 4
	Fig.6b JQ1	p300: $p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0052$ LPS/ATP +C646 vs. LPS/ATP; BRD4: $p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0013$ LPS/ATP +C646 vs. LPS/ATP; SP1: $p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.0003$ LPS/ATP +C646 vs. LPS/ATP;	One-way ANOVA, Tukey's test	n = 4
	Fig.6d	$p < 0.0001$ LPS/ATP (Ctrl) vs. Ctrl (Ctrl); $p < 0.0001$ LPS/ATP (JQ1) vs. LPS/ATP (Ctrl); $p = 0.0206$ LPS/ATP (C646/Plica/JQ1) vs. LPS/ATP (JQ1);	Two-way ANOVA	n = 3

Figure7	Fig.7b PWT	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl); $p = 0.0467$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p = 0.0484$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
	Fig.7b LLF	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl); $p = 0.0142$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p = 0.0483$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
	Fig.7c T.Dis	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl); $p = 0.0125$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p = 0.0026$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
	Fig.7c TIC	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl); $p = 0.0005$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p = 0.0021$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
	Fig.7d P2X4R	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl); $p < 0.0001$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p < 0.0001$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
	Fig.7d IL-6	$p = 0.0003$ SNI (Ctrl) vs. Ctrl (Ctrl); $p < 0.0001$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p < 0.0001$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
	Fig.7d TNF- α	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl);	Two-way ANOVA	n = 6

		$p < 0.0001$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p < 0.0001$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);		
	Fig.7d CXCR4	$p < 0.0001$ SNI (Ctrl) vs. Ctrl (Ctrl); $p < 0.0001$ SNI+JQ1 (Ctrl) vs. SNI (Ctrl); $p < 0.0001$ SNI+JQ1 (BzATP) vs. SNI+JQ1 (Ctrl);	Two-way ANOVA	n = 6
Supplementary figure1	Fup-fig. 1b BV2-GNE-049	$p = 0.0071$ LPS/ATP vs. Ctrl; $p = 0.8207$ LPS/ATP (GNE-049) vs. LPS/ATP (Ctrl);	One-way ANOVA, Tukey's test	n = 3
	Fup-fig. 1b pMG-GNE-049	$p = 0.0070$ LPS/ATP vs. Ctrl; $p = 0.4613$ LPS/ATP (GNE-049) vs. LPS/ATP (Ctrl);	One-way ANOVA, Tukey's test	n = 3
	Fup-fig. 1b BV2-MG149	$p = 0.0004$ LPS/ATP vs. Ctrl; $p = 0.7842$ LPS/ATP (MG149) vs. LPS/ATP (Ctrl);	One-way ANOVA, Tukey's test	n = 3
	Fup-fig. 1b pMG-MG149	$p < 0.0001$ LPS/ATP vs. Ctrl; $p = 0.3812$ LPS/ATP (MG149) vs. LPS/ATP (Ctrl);	One-way ANOVA, Tukey's test	n = 3