

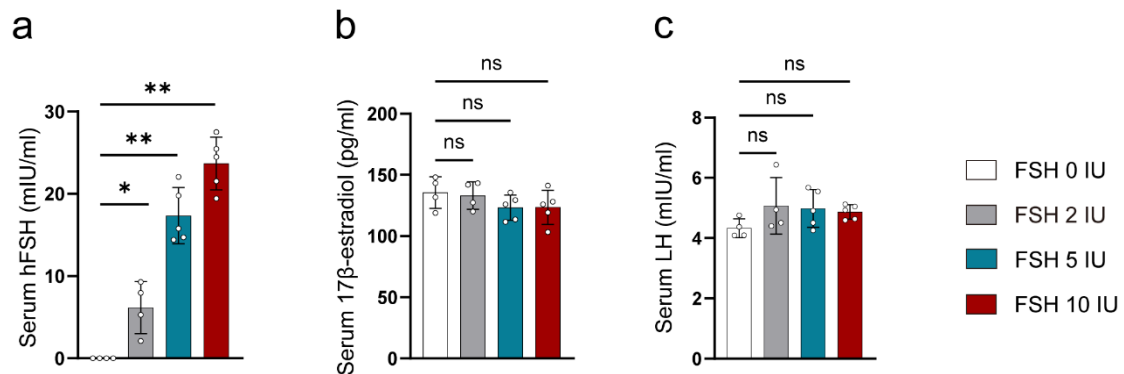
## Supplementary materials for

# Follicle-Stimulating Hormone Induces Depression-Like Phenotype by Affecting Synaptic Function

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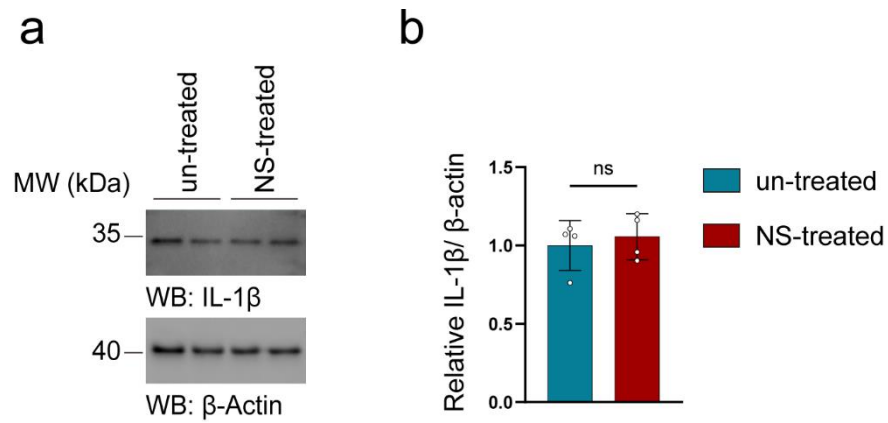
Luo, Chen Lv, Xiang Li, Jianming Liao, Zhihao Wang, Zhaohui Zhang, Jing Xiong

### Supplementary figures



**Supplementary Figure 1 Proper dose of recombinant human FSH don't interfere the serum level of 17β-estradiol and LH in mice.**

(a) ELISA quantification showing that human FSH levels in the serum of mice after recombinant human FSH treatment. (b, c) ELISA quantification shows that the 17β-estradiol (b) and LH (c) levels in the serum of mice after recombinant human FSH treatment. Data are shown as mean ± SEM, n = 4-5 mice per group. Statistical analysis was performed by one-way ANOVA followed by Tukey's multiple comparisons test. \* $P < 0.05$ , \*\* $P < 0.01$ ; ns, not significant.



**Supplementary Figure 2 Intraperitoneal injection of NS did not increase the level of neuroinflammation in mice.**

(a-b) Representative immunoblots images (a) and quantification (b) of IL-1 $\beta$  protein expression in the hippocampus, data are presented as mean  $\pm$  SEM, n = 4 mice per group. Statistical analysis was performed by unpaired two-tailed Student's t-test, ns, not significant.

**Supplementary Table 1**

	protein	0IU		5IU		10IU	
		Fold	<i>P</i>	Fold	<i>P</i> *	Fold	<i>P</i> #
Fig. 2b	IL-1B	1		1.682	0.0017	2.38	<0.0001
	IL-6	1		1.872	0.0522	2.515	0.0021
Fig. 3b	PSD95	1		0.8011	0.0412	0.5512	0.0002
	Synapsin	1		0.8165	0.0065	0.4398	<0.0001
	Synaptophysin	1		0.9238	0.5937	0.6919	0.0073
Fig. 4b	GluR1	1		0.7092	0.0113	0.4515	0.0001
	GluR2	1		1.143	0.0551	1.164	0.4272
	VGlut1	1		0.8979	0.6021	0.5831	0.0027
	GAD67	1		0.7193	0.0207	0.3507	<0.0001
Fig. 10b	p-ERK	1		1.198	0.1163	1.301	0.016

**Supplementary Table 1**

The folding changes and P-values of significantly altered protein (*P*\*, 0 IU group vs. 5 IU group; *P*#, 0 IU group vs.10 IU group).

**Supplementary Table 2**

	protein	sh-Con+NS		sh-Con+FSH		sh-FSHR+FSH	
		Fold	<i>P</i>	Fold	<i>P</i> *	Fold	<i>P</i> #
Fig. 5d	FSHR	1		0.3857	0.0131		
Fig. 7b	IL-1 $\beta$	1		2.809	<0.0001	1.731	0.0004
	IL-6	1		2.078	0.0006	1.332	0.0066
Fig. 8b	PSD95	1		0.5393	0.0002	0.9092	0.0008
	Synapsin	1		0.3915	<0.0001	0.7955	0.0018
	Synaptophysin	1		0.6794	0.0112	0.9203	0.0454
Fig. 9b	GluR1	1		0.6374	0.0003	0.8394	0.0124
	GluR2	1		0.9846	0.01543	0.9181	0.06648
	VGlut1	1		0.7038	0.0041	0.8926	0.0464
	GAD67	1		0.5766	0.0004	0.9735	0.0007
Fig. 10d	p-ERK	1		1.241	0.0006	1.1	0.017

**Supplementary Table 2**

The folding changes and P-values of significantly altered protein (*P*\*, sh-Control + NS group vs. sh-Control + FSH group; *P*#, sh-Control + NS group vs. sh-FSHR + FSH group).

**Supplementary Table 3**

	protein	Vehicle		FSH		inhibitor		FSH+inhibitor	
		Fold	<i>P</i>	Fold	<i>P</i> *	Fold	<i>P</i> #	Fold	<i>P</i> ##
Fig. 10f	P-ERK	1		1.723	0.0083	0.8461	0.7729	1.211	0.5772
	IL-1 $\beta$	1		3.232	0.0004	1.288	0.9298	2.2	0.0214
	IL-6	1		3.058	0.0007	1.37	0.6413	2.025	0.0416

**Supplementary Table 3**

The folding changes and P-values of significantly altered protein (*P*\*, vehicle group vs. FSH group; *P*#, vehicle group vs. ERK inhibitor group; *P*##, vehicle group vs. FSH + ERK inhibitor group).