

Table S1 List of potential candidate genes

Trait	Chromosome	Candidate gene
Biting piglets (BP)	Chr3	<i>PLOD3</i>
		<i>ZNHIT1</i>
		<i>CLDN15</i>
		<i>FIS1</i>
		<i>IFT22</i>
		<i>COL26A1</i>
		<i>MYL10</i>
		<i>CUX1</i>
		<i>SH2B2</i>
		<i>PRKRIP1</i>
		<i>ORAI2</i>
		<i>ALKBH4</i>
		<i>LRWD1</i>
		<i>POLR2J</i>
		<i>RASA4B</i>
		<i>UPK3BL2</i>
		<i>UPK3B</i>
		<i>DTX2</i>
		<i>ZP3</i>
		<i>SSC4D</i>
		<i>YWHAG</i>
		<i>HSPB1</i>
		<i>SRRM3</i>
		<i>MDH2</i>
		<i>STYXL1</i>
		<i>TMEM120A</i>
		<i>POR</i>
		<i>RHBDD2</i>
		<i>CCL24</i>
		<i>CCL26</i>
		<i>HIP1</i>
		<i>POM121C</i>
		<i>NSUN5</i>
		<i>TRIM50</i>
		<i>FKBP6</i>
		<i>FZD9</i>
		<i>BAZ1B</i>
		<i>TBL2</i>
		<i>BCL7B</i>
		<i>MLXIPL</i>
		<i>VPS37D</i>
		<i>DNAJC30</i>

Chr11	<i>BUD23</i>
	<i>TPP2</i>
	<i>METTL21C</i>
	<i>CCDC168</i>
	<i>TEX30</i>
	<i>POGLUT2</i>
	<i>BIVM</i>
	<i>ERCC5</i>
	<i>SLC10A2</i>
	<i>SYNPO2</i>
Chr8	<i>SEC24D</i>
	<i>METTL14</i>
	<i>PRSS12</i>
	<i>NDST3</i>
	<i>TRAM1L1</i>
Chr13	<i>SLC5A3</i>
	<i>MRPS6</i>
	<i>KCNE2</i>
	<i>SMIM11</i>
	<i>C13H21orf140</i>
	<i>SMIM34</i>
	<i>KCNE1</i>
	<i>RCAN1</i>
	<i>CLIC6</i>
	<i>RUNX1</i>
Chr12	<i>SETD4</i>
	<i>SRR</i>
	<i>TSR1</i>
	<i>SGSM2</i>
	<i>MNT</i>
	<i>METTL16</i>
	<i>PAFAH1B1</i>
	<i>CLUH</i>
	<i>RAP1GAP2</i>
	<i>SPATA22</i>
	<i>ASPA</i>
	<i>TRPV3</i>
	<i>TRPV1</i>
	<i>SHPK</i>
	<i>CTNS</i>
	<i>TAX1BP3</i>
	<i>EMC6</i>
	<i>P2RX5</i>
	<i>ITGAE</i>

		<i>HASPIN</i>
		<i>NCBP3</i>
		<i>CAMKK1</i>
		<i>P2RX1</i>
		<i>ATP2A3</i>
		<i>ZZEF1</i>
		<i>CYB5D2</i>
		<i>ANKFY1</i>
		<i>UBE2G1</i>
		<i>SPNS3</i>
Crushing piglets (CP)	Chr17	<i>CLDN23</i>
		<i>PRAG1</i>
		<i>TRMT9B</i>
		<i>DLC1</i>
		<i>C17H8orf48</i>
		<i>SGCZ</i>
		<i>TRNAE-UUC</i>
Tramplng piglets (TP)	Chr15	<i>IRS1</i>
		<i>RHBDD1</i>
		<i>COL4A4</i>
		<i>COL4A3</i>
		<i>MFF</i>
		<i>TM4SF20</i>
		<i>AGFG1</i>
		<i>SLC19A3</i>
		<i>CCL20</i>
		<i>DAW1</i>
		<i>SPHKAP</i>
	Chr3	<i>DCDC2C</i>
		<i>ALLC</i>
		<i>COLEC11</i>
		<i>RPS7</i>
		<i>RNASEH1</i>
		<i>ADI1</i>
		<i>TRAPPC12</i>
		<i>EIPR1</i>
		<i>MYT1L</i>
		<i>PXDN</i>
		<i>TPO</i>
		<i>TMEM18</i>
		<i>ALKAL2</i>
		<i>ACP1</i>
		<i>SH3YL1</i>
Piglets screaming test (ST)	Chr14	<i>PANK1</i>

<i>KIF20B</i>
<i>HTR7</i>
<i>RPP30</i>
<i>ANKRD1</i>
<i>PCGF5</i>
<i>HECTD2</i>
<i>PPP1R3C</i>
<i>TNKS2</i>

Table S2: List of candidate genes enrichment neurodegeneration pathways.

KEGG_class	Pathway	Pathway_ID	Genes
Signaling molecules and interaction	Neuroactive ligand-receptor interaction	ko04080	<i>P2RX5, P2RX1, HTR7, TRPV1</i>
Neurodegenerative disease	Pathways of neurodegeneration - multiple diseases	ko05022	<i>ATP2A3, HIP1, UBE2G1, FZD9</i>
Neurodegenerative disease	Alzheimer disease	ko05010	<i>ATP2A3, IRS1, FZD9</i>
Neurodegenerative disease	Spinocerebellar ataxia	ko05017	<i>ATP2A3</i>
Neurodegenerative disease	Huntington disease	ko05016	<i>POLR2J, HIP1</i>
Neurodegenerative disease	Parkinson disease	ko05012	<i>UBE2G1</i>
Neurodegenerative disease	Amyotrophic lateral sclerosis	ko05014	<i>POM121C</i>
Nervous system	Neurotrophin signaling pathway	ko04722	<i>SH2B2, IRS1</i>

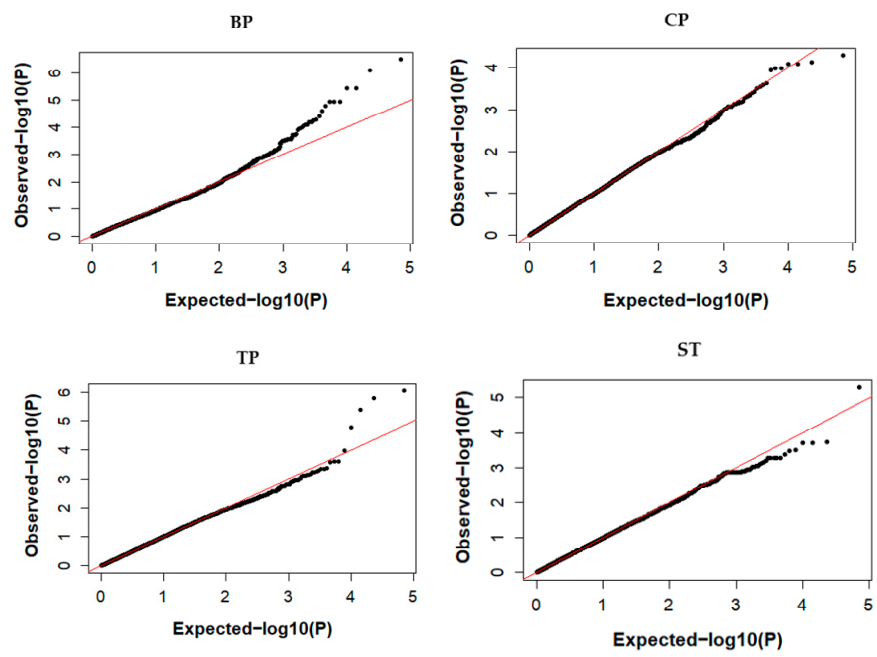


Figure S1. The Q-Q plots of four maternal behavior traits.