

Inflammatory Factors Mediate Vulnerability to a Social Stress-Induced Depressive-Like Phenotype in Passive Coping Rats

Supplemental Information

Table S1. Stress-induced changes in gene expression in the locus coeruleus relative to control

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
Short Latency						
Downregulated						
<i>ADRB1</i>	Adrenoceptor beta 1	Rn.87064	\hat{e} -4.759	PM	GPCR	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>NOS2</i>	Nitric oxide synthase 2, inducible	Rn.10400	\hat{e} -3.355	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>GRM5</i>	Glutamate receptor, metabotropic 5	Rn.29972	\hat{e} -3.345	PM	GPCR	Nutri, CVD, Metab, Neuro, Psych
<i>AGTR2</i>	Angiotensin II receptor, type 2	Rn.162367	\hat{e} -3.016	PM	GPCR	GI, CVD, Nutri, Neuro, Renal
<i>CYP19A1</i>	Cytochrome P450, family 19, subfamily A, polypeptide 1	Rn.21402	\hat{e} -2.335	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>MMP9</i>	Matrix metalloproteinase 9 (gelatinase B, 92kDa gelatinase, 92kDa type IV collagenase)	Rn.10209	\hat{e} -2.326	Extracellular	Peptidase	Nutri, Inflam, Immun, CVD, Metab, GI, Neuro, Renal
<i>VCAM1</i>	Vascular cell adhesion molecule 1	Rn.11267	\hat{e} -2.208	PM	TM receptor	Inflam, Immun, CVD, Metab, GI, Endo, Neuro, Renal
<i>GRM7</i>	Glutamate receptor, metabotropic 7	Rn.10409	\hat{e} -2.068	PM	GPCR	GI, Neuro, Psych
<i>ICAM1</i>	Intercellular adhesion molecule 1	Rn.12	\hat{e} -1.995	PM	TM receptor	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
<i>COL1A1</i>	Collagen, type I, alpha 1	Rn.2953	\hat{e} -1.786	Extracellular	Other	GI, Inflam, CVD, Neuro
<i>IL1R1</i>	Interleukin 1 receptor, type I	Rn.9758	\hat{e} -1.636	PM	TM receptor	GI, Inflam, CVD, Nutri, Neuro, Renal, Immun, Endo, Metab
Upregulated						
<i>IL1R2</i>	Interleukin 1 receptor, type II	Rn.10758	\hat{e} 7.976	PM	TM receptor	GI, Inflam, Immun, Endo, Metab
<i>IL1B</i>	Interleukin 1, beta	Rn.9869	\hat{e} 3.993	Extracellular	Cytokine	GI, Inflam, CVD, Nutri, Neuro, Psych, Immun, Endo, Metab
<i>LHCGR</i>	Luteinizing hormone/ choriogonadotropin receptor	Rn.11216	\hat{e} 2.418	PM	GPCR	CVD, Nutri, Endo
<i>NPY1R</i>	Neuropeptide Y receptor Y1	Rn.11642	\hat{e} 2.198	PM	GPCR	Nutri, Immun, CVD, Metab
Long Latency						
Downregulated						
<i>NOS2</i>	Nitric oxide synthase 2, inducible	Rn.10400	\hat{e} -3.932	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>NPY2R</i>	Neuropeptide Y receptor Y2	Rn.64505	\hat{e} -3.664	PM	GPCR	N/A*
<i>IL1B</i>	Interleukin 1, beta	Rn.9869	\hat{e} -3.199	Extracellular	Cytokine	GI, Inflam, CVD, Nutri, Neuro, Psych, Immun, Endo, Metab
<i>EDN1</i>	Endothelin 1	Rn.10918	\hat{e} -2.794	Extracellular	Cytokine	GI, Inflam, CVD, Neuro, Renal
<i>GRM5</i>	Glutamate receptor, metabotropic 5	Rn.29972	\hat{e} -2.727	PM	GPCR	Nutri, CVD, Metab, Neuro, Psych
<i>ICAM1</i>	Intercellular adhesion molecule 1	Rn.12	\hat{e} -2.571	PM	TM receptor	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>DRD1</i>	Dopamine receptor D1	Rn.24039	\hat{e} -2.321	PM	GPCR	Nutri, CVD, Metab, GI, Endo, Neuro, Renal, Psych
<i>TNF</i>	Tumor necrosis factor	Rn.2275	\hat{e} -2.089	Extracellular	Cytokine	Nutri, Inflam, Immun, CVD, Metab, GI, Endo, Neuro, Renal, Psych

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
<i>EGR1</i>	Early growth response 1	Rn.9096	ê-2.028	Nucleus	Transcription regulator	Inflam, Immun, CVD, GI, Neuro
<i>SOCS1</i>	Suppressor of cytokine signaling 1	Rn.82754	ê-1.815	Cytoplasm	Other	Inflam, Immun, CVD, Metab, GI, Endo, Renal
<i>KCNH8</i>	Potassium voltage-gated channel, subfamily H (eag-related), member 8	Rn.30029	ê-1.686	PM	Ion channel	N/A*
<i>BCL2L1</i>	BCL2-like 1	Rn.10323	ê-1.681	Cytoplasm	Other	Inflam, Immun, CVD, GI, Neuro
<i>OPRK1</i>	Opioid receptor, kappa 1	Rn.89571	ê-1.533	PM	GPCR	Nutri, Inflam, Immun, CVD, GI, Neuro, Psych
Upregulated						
<i>IL1R2</i>	Interleukin 1 receptor, type II	Rn.10758	é4.31	PM	TM receptor	GI, Inflam, Immun, Endo, Metab
<i>NPY1R</i>	Neuropeptide Y receptor Y1	Rn.11642	é1.745	PM	GPCR	Nutri, Immun, CVD, Metab
<i>UCP1</i>	Uncoupling protein 1 (mitochondrial, proton carrier)	Rn.10281	é1.615	Cytoplasm	Transporter	Metab
<i>LHCGR</i>	Luteinizing hormone/choriogonadotropin receptor	Rn.11216	é1.550	PM	GPCR	CVD, Nutri, Endo

Genes >1.5 fold differentially expressed vs. controls.

CVD, cardiovascular disease; Endo, endocrine system disorders; GI, gastrointestinal disease; GPCR, G-protein coupled receptor signaling; Immun, immunological disease; Inflam, inflammatory disease; Metab, metabolic disease; Neuro, neurological disease; Nutri, nutritional disease; PM, plasma membrane; Psych, psychological disorders; Renal, renal and urological disease; TM, transmembrane; *N/A, no disease association was provided by IPA.

Table S2. Stress-induced changes in gene expression in the dorsal raphe relative to control

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
Short Latency						
Downregulated						
<i>COL1A1</i>	Collagen, type I, alpha 1	Rn.2953	ê -7.234	Extracellular	Other	GI, Inflam, CVD, Neuro
<i>CYP19A1</i>	Cytochrome P450, family 19, subfamily A, polypeptide 1	Rn.21402	ê -4.319	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>IL1R2</i>	Interleukin 1 receptor, type II	Rn.10758	ê -3.766	PM	TM receptor	GI, Inflam, Immun, Endo, Metab
<i>TACR1</i>	Tachykinin receptor 1	Rn.89609	ê -3.423	PM	GPCR	GI, Inflam, Nutri, Psych
<i>AKT1</i>	V-akt murine thymoma viral oncogene homolog 1	Rn.11422	ê -3.231	Cytoplasm	Kinase	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>EDN1</i>	Endothelin 1	Rn.10918	ê -2.783	Extracellular	Cytokine	GI, Inflam, CVD, Neuro, Renal
<i>NPY2R</i>	Neuropeptide Y receptor Y2	Rn.64505	ê -2.616	PM	GPCR	N/A*
<i>IL1R1</i>	Interleukin 1 receptor, type I	Rn.9758	ê -2.412	PM	TM receptor	GI, Inflam, CVD, Nutri, Neuro, Renal, Immun, Endo, Metab
<i>LHCGR</i>	Luteinizing hormone/choriogonadotropin receptor	Rn.11216	ê -2.310	PM	GPCR	CVD, Nutri, Endo
<i>CCNE1</i>	Cyclin E1	Rn.15455	ê -2.284	Nucleus	Transcription regulator	CVD
<i>GALR2</i>	Galanin receptor 2	Rn.9789	ê -2.142	PM	GPCR	GI
<i>GRM1</i>	Glutamate receptor, metabotropic 1	Rn.87787	ê -2.123	PM	GPCR	GI, Neuro, Psych
<i>S1PR2</i>	Sphingosine-1-phosphate receptor 2	Rn.2491	ê -2.104	PM	GPCR	Neuro, Immun
<i>ADORA2A</i>	Adenosine A2a receptor	Rn.11180	ê -2.027	PM	GPCR	GI, Inflam, CVD, Nutri, Neuro, Renal, Immun
<i>JUN</i>	Jun proto-oncogene	Rn.93714	ê -1.975	Nucleus	Transcription regulator	GI, Inflam, CVD, Neuro, Psych, Renal, Immun, Endo, Metab

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
<i>GRM7</i>	Glutamate receptor, metabotropic 7	Rn.10409	ê-1.929	PM	GPCR	GI, Neuro, Psych
<i>AGTR2</i>	Angiotensin II receptor, type 2	Rn.162367	ê-1.873	PM	GPCR	GI, CVD, Nutri, Neuro, Renal
<i>NOS2</i>	Nitric oxide synthase 2, inducible	Rn.10400	ê-1.802	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>CASR</i>	Calcium-sensing receptor	Rn.10019	ê-1.755	PM	GPCR	GI, Inflam, CVD, Neuro, Renal, Endo
<i>ADRB1</i>	Adrenoceptor beta 1	Rn.87064	ê-1.724	PM	GPCR	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>GRM2</i>	Glutamate receptor, metabotropic 2	Rn.9681	ê-1.715	PM	GPCR	Neuro, Psych
<i>CTGF</i>	Connective tissue growth factor	Rn.17145	ê-1.702	Extracellular	Growth factor	GI, CVD, Neuro, Psych, Renal, Metab
<i>S1PR1</i>	Sphingosine-1-phosphate receptor 1	Rn.109455	ê-1.696	PM	GPCR	GI, Inflam, Neuro, Immun
<i>LPAR1</i>	Lysophosphatidic acid receptor 1	Rn.11200	ê-1.680	PM	GPCR	GI, Neuro
<i>ICAM1</i>	Intercellular adhesion molecule 1	Rn.12	ê-1.631	PM	TM receptor	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>OPRK1</i>	Opioid receptor, kappa 1	Rn.89571	ê-1.623	PM	GPCR	GI, Inflam, CVD, Neuro, Psych, Renal, Immun
<i>PTGS2</i>	Prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)	Rn.44369	ê-1.585	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>ELK4</i>	ELK4, ETS-domain protein (SRF accessory protein 1)	Rn.204345	ê-1.575	Nucleus	Transcription regulator	GI
<i>AGT</i>	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)	Rn.6319	ê-1.527	Extracellular	Growth factor	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
<i>DRD2</i>	Dopamine receptor D2	Rn.87299	ê-1.500	PM	GPCR	N/A*
Upregulated						
<i>PTGDR</i>	Prostaglandin D2 receptor (DP)	Rn.220703	ê2.707	PM	GPCR	GI, Inflam, CVD, Neuro
<i>IL1B</i>	Interleukin 1, beta	Rn.9869	ê1.932	Extracellular	Cytokine	GI, Inflam, CVD, Nutri, Neuro, Psych, Immun, Endo, Metab
Long Latency						
Downregulated						
<i>NOS2</i>	Nitric oxide synthase 2, inducible	Rn.10400	ê-6.868	Cytoplasm	Enzyme	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>DRD2</i>	Dopamine receptor D2	Rn.87299	ê-2.914	PM	GPCR	N/A*
<i>AGT</i>	Angiotensinogen (serpin peptidase inhibitor, clade A, member 8)	Rn.6319	ê-2.826	Extracellular	Growth factor	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
<i>AGTR2</i>	Angiotensin II receptor, type 2	Rn.162367	ê-2.490	PM	GPCR	GI, CVD, Nutri, Neuro, Renal
<i>IL1B</i>	Interleukin 1, beta	Rn.9869	ê-2.475	Extracellular	Cytokine	GI, Inflam, CVD, Nutri, Neuro, Psych, Immun, Endo, Metab
<i>GRM7</i>	Glutamate receptor, metabotropic 7	Rn.10409	ê-2.392	PM	GPCR	GI, Neuro, Psych
<i>OPRD1</i>	Opioid receptor, delta 1	Rn.10310	ê-1.952	PM	GPCR	GI, Inflam, CVD, Nutri, Neuro, Psych, Immun
<i>S1PR1</i>	Sphingosine-1-phosphate receptor 1	Rn.109455	ê-1.662	PM	GPCR	GI, Inflam, Neuro, Immun
<i>LHCGR</i>	Luteinizing hormone/choriogonadotropin receptor	Rn.11216	ê-1.524	PM	GPCR	CVD, Nutri, Endo

Symbol	Entrez Gene Name	UniGene	Fold Change	Location	Type(s)	Disease Involvement
<i>Upregulated</i>						
PTGDR	Prostaglandin D2 receptor (DP)	Rn.220703	€4.392	PM	GPCR	GI, Inflam, CVD, Neuro
IL1R2	Interleukin 1 receptor, type II	Rn.10758	€2.767	PM	TM receptor	GI, Inflam, Immun, Endo, Metab
ADRB2	Adrenoceptor beta 2, surface	Rn.10206	€1.987	PM	GPCR	GI, Inflam, CVD, Nutri, Neuro, Psych, Renal, Immun, Endo, Metab
CASR	Calcium-sensing receptor	Rn.10019	€1.793	PM	GPCR	GI, Inflam, CVD, Neuro, Renal, Endo

Genes >1.5 fold differentially expressed vs. controls.

CVD, cardiovascular disease; Endo, endocrine system disorders; GI, gastrointestinal disease; GPCR, G-protein coupled receptor signaling; Immun, immunological disease; Inflam, inflammatory disease; Metab, metabolic disease; Neuro, neurological disease; Nutri, nutritional disease; PM, plasma membrane; Psych, psychological disorders; Renal, renal and urological disease; TM, transmembrane; *N/A, no disease association was provided by IPA.