

## Supplemental Tables and Figures

**Supplementary Table S1.** Log2(fold change) (FC) and False Discovery Rat  $\times 10$ -adjusted P-value (FDR) of genes in the prefrontal cortex that presented at least one significant (FDR P-value  $< 0.05$ , and a  $|\log_2(\text{fold change})| > 1.2$ ) effect for the main effects and interactions (x) between morphine (M), maternal immune activation (A), and sex (S).

Symbol	A $\times$ M		A		M		A $\times$ S		M $\times$ S		S	
	FC	FDR	FC	FDR	FC	FDR	FC	FDR	FC	FDR	FC	FDR
ADGRE1			7.7	$1 \times 10^{-10}$					2.9	$1 \times 10^{-8}$		
ADGRG3							-1.8	$2 \times 10^{-3}$				
AMBN			1.8	$1 \times 10^{-10}$								
AQP1									-1.2	$1 \times 10^{-3}$		
ARG1	-1.6	$1 \times 10^{-10}$					2.2	$7 \times 10^{-5}$	2.5	$1 \times 10^{-10}$		
ATF3			1.3	$1 \times 10^{-10}$								
B2M			1.2	$1 \times 10^{-10}$								
BATF2			2.3	$1 \times 10^{-10}$								
BCL2L14			1.9	$1 \times 10^{-10}$								
BST2			1.6	$1 \times 10^{-10}$								
BTNL9			1.2	$1 \times 10^{-10}$								
C1H15orf48									1.5	$1 \times 10^{-3}$		
C2			2.5	$1 \times 10^{-10}$								
C4BPA-2			3.6	$1 \times 10^{-10}$	-3.1	$1 \times 10^{-10}$			-2.4	$1 \times 10^{-3}$		
C7	1.4	$1 \times 10^{-10}$										
CCL2			2.1	$1 \times 10^{-10}$	-1.4	$1 \times 10^{-10}$	1.6	$2 \times 10^{-3}$				
CCL4			1.7	$1 \times 10^{-10}$	-1.4	$1 \times 10^{-10}$						
CCL5			2.9	$1 \times 10^{-10}$								
CCL8			1.3	$1 \times 10^{-10}$								
CCR1									1.9	$1 \times 10^{-10}$		
CCR2			2.1	$1 \times 10^{-10}$								
CD163			3.0	$1 \times 10^{-10}$					2.1	$1 \times 10^{-10}$		
CD2			3.2	$1 \times 10^{-10}$								
CD274			1.4	$1 \times 10^{-10}$								
CD300LF			1.3	$1 \times 10^{-10}$								
CD3E			2.5	$1 \times 10^{-10}$								
CD3G			3.0	$1 \times 10^{-10}$								
CD48			1.7	$1 \times 10^{-10}$								
CD52			2.5	$1 \times 10^{-10}$			2.2	$3 \times 10^{-3}$				
CD5L			1.2	$1 \times 10^{-10}$					-2.3	$5 \times 10^{-6}$		
CD6			1.9	$1 \times 10^{-10}$								
CD74			2.6	$1 \times 10^{-10}$					-1.6	$1 \times 10^{-10}$		
CHI3L1									1.7	$7 \times 10^{-5}$		
CRABP1			-1.5	$1 \times 10^{-10}$								
CRABP2	1.9	$1 \times 10^{-10}$	-2.4	$1 \times 10^{-10}$	-1.9	$1 \times 10^{-10}$			-1.3	$5 \times 10^{-2}$		
CSF2RB									1.6	$4 \times 10^{-6}$		
CSF3R	-1.8	$1 \times 10^{-10}$			-1.2	$1 \times 10^{-10}$	1.7	$1 \times 10^{-2}$	2.4	$3 \times 10^{-9}$		
CTSS			1.4	$1 \times 10^{-10}$								

CTSW			2.3	$1 \times 10^{-10}$									
CXCL10			4.7	$1 \times 10^{-10}$			1.7	$4 \times 10^{-8}$					
CXCL11			4.9	$1 \times 10^{-10}$									
CXCL9			5.5	$1 \times 10^{-10}$					-2.2	$5 \times 10^{-6}$			
CYTIP			1.8	$1 \times 10^{-10}$									
DDX60			2.6	$1 \times 10^{-10}$					-1.4	$7 \times 10^{-8}$			
DHX58			2.0	$1 \times 10^{-10}$									
DNTT			1.4	$1 \times 10^{-10}$									
DSP	1.3	$1 \times 10^{-10}$	-1.5	$1 \times 10^{-10}$	-1.3	$1 \times 10^{-10}$							
EIF1AY							-5.0	$1 \times 10^{-10}$	6.8	$1 \times 10^{-10}$	-8.9	$1 \times 10^{-10}$	
EMILIN2									1.7	$5 \times 10^{-8}$			
EOMES			1.5	$1 \times 10^{-10}$									
EPSTI1			2.0	$1 \times 10^{-10}$									
ETV7			1.2	$1 \times 10^{-10}$									
F13A1							1.4	$1 \times 10^{-6}$	2.2	$1 \times 10^{-10}$			
FAM167B			2.0	$1 \times 10^{-10}$					1.5	$3 \times 10^{-2}$			
FAM26F			1.4	$1 \times 10^{-10}$									
FCGR2B			2.3	$1 \times 10^{-10}$									
FCN1			2.4	$1 \times 10^{-10}$	-1.6	$1 \times 10^{-10}$			3.4	$1 \times 10^{-10}$			
GBP1			3.0	$1 \times 10^{-10}$			1.6	$1 \times 10^{-10}$	-1.2	$1 \times 10^{-10}$			
GDPD1	-1.6	$1 \times 10^{-10}$	2.0	$1 \times 10^{-10}$									
GNLY			2.9	$1 \times 10^{-10}$	-1.2	$1 \times 10^{-10}$							
GPR84	-2.0	$1 \times 10^{-10}$	2.4	$1 \times 10^{-10}$	-1.8	$1 \times 10^{-10}$	2.4	$7 \times 10^{-6}$	3.2	$1 \times 10^{-10}$	-1.3	$2 \times 10^{-8}$	
GVIN1			2.2	$1 \times 10^{-10}$									
GZMA-2			4.5	$1 \times 10^{-10}$									
GZMB			4.3	$1 \times 10^{-10}$	-1.5	$2 \times 10^{-3}$							
HERC5			2.5	$1 \times 10^{-10}$									
HERC6			1.4	$1 \times 10^{-10}$									
IDO1					-2.1	$1 \times 10^{-10}$	2.0	$5 \times 10^{-3}$					
IER3									1.9	$2 \times 10^{-6}$			
IFI44			1.7	$1 \times 10^{-10}$									
IFI44L			1.6	$1 \times 10^{-10}$									
IFI6			2.0	$1 \times 10^{-10}$	-1.5	$1 \times 10^{-10}$							
IFIH1			1.6	$1 \times 10^{-10}$									
IFIT1			1.8	$1 \times 10^{-10}$									
IFIT3			1.7	$1 \times 10^{-10}$									
IFITM1			2.4	$1 \times 10^{-10}$									
IFITM3			1.4	$1 \times 10^{-10}$									
IL15RA			1.4	$1 \times 10^{-10}$									
IL2RB			2.3	$1 \times 10^{-10}$									
ISG12(A)			1.8	$1 \times 10^{-10}$	-1.3	$1 \times 10^{-10}$							
ISG15			1.4	$1 \times 10^{-10}$									
ISG20			3.6	$1 \times 10^{-10}$									
ITGB7			1.9	$1 \times 10^{-10}$									
JCHAIN			1.3	$1 \times 10^{-10}$									

KLRD1			1.9	$1 \times 10^{-10}$																
KLRK1			3.6	$1 \times 10^{-10}$																
KMO			1.3	$1 \times 10^{-10}$																
KRT19	1.7	$1 \times 10^{-10}$	-1.7	$1 \times 10^{-10}$																
LCK			3.1	$1 \times 10^{-10}$	-1.6	$1 \times 10^{-10}$														
LGALS3BP			1.6	$1 \times 10^{-10}$																
LGALS9			1.8	$1 \times 10^{-10}$																
LOC100038329			4.7	$1 \times 10^{-10}$								3.1	$1 \times 10^{-10}$							
LOC100125542			5.2	$1 \times 10^{-10}$								1.9	$3 \times 10^{-8}$							
LOC100152327			4.6	$1 \times 10^{-10}$								2.2	$1 \times 10^{-10}$							
LOC100153139			2.9	$1 \times 10^{-10}$	-1.2	$4 \times 10^{-8}$														
LOC100154053	-1.2	$1 \times 10^{-10}$	1.8	$1 \times 10^{-10}$					1.8	$3 \times 10^{-2}$										
LOC100155195			2.5	$1 \times 10^{-10}$					1.2	$1 \times 10^{-4}$										
LOC100156073			1.5	$1 \times 10^{-10}$																
LOC100158069			1.9	$1 \times 10^{-10}$																
LOC100513601												-2.4	$1 \times 10^{-10}$							
LOC100514479																1.4	$3 \times 10^{-8}$			
LOC100514951			1.4	$1 \times 10^{-10}$																
LOC100516039			1.2	$1 \times 10^{-10}$																
LOC100516587																1.6	$1 \times 10^{-10}$			
LOC100519082			1.7	$1 \times 10^{-10}$	-1.3	$1 \times 10^{-10}$														
LOC100519098			1.5	$1 \times 10^{-10}$																
LOC100519314			1.5	$1 \times 10^{-10}$																
LOC100520491			1.3	$1 \times 10^{-10}$																
LOC100523310			1.6	$1 \times 10^{-10}$								-1.2	$4 \times 10^{-2}$							
LOC100524999			1.6	$1 \times 10^{-10}$								-1.3	$4 \times 10^{-3}$							
LOC100525452												1.7	$1 \times 10^{-3}$							
LOC100525692												-5.9	$1 \times 10^{-10}$							
LOC100526118									-1.7	$2 \times 10^{-3}$										
LOC100621559			3.0	$1 \times 10^{-10}$																
LOC100623670	-2.4	$2 \times 10^{-6}$	6.2	$1 \times 10^{-10}$								1.8	$1 \times 10^{-3}$							
LOC100624149											-4.5	$1 \times 10^{-10}$	7.4	$1 \times 10^{-10}$	-8.6	$1 \times 10^{-10}$				
LOC100624329															-3.2	$1 \times 10^{-10}$				
LOC100624590											-5.7	$1 \times 10^{-10}$	8.3	$1 \times 10^{-10}$	-9.1	$1 \times 10^{-10}$				
LOC100624648											3.6	$1 \times 10^{-10}$	-1.6	$1 \times 10^{-10}$	3.7	$1 \times 10^{-10}$				
LOC100624650											1.9	$2 \times 10^{-7}$								
LOC100625207											-5.8	$1 \times 10^{-10}$	7.6	$1 \times 10^{-10}$	-8.8	$1 \times 10^{-10}$				
LOC100626247			1.5	$1 \times 10^{-10}$																
LOC100737113												1.7	$1 \times 10^{-3}$							
LOC100737436	1.6	$1 \times 10^{-10}$	-1.6	$1 \times 10^{-10}$					-3.7	$1 \times 10^{-10}$	-3.9	$1 \times 10^{-10}$								
LOC100739325			2.1	$1 \times 10^{-10}$																
LOC102160313			2.5	$1 \times 10^{-10}$																
LOC102162336			1.6	$1 \times 10^{-10}$																
LOC102163798												-1.2	$5 \times 10^{-3}$							
LOC102164141	-1.3	$1 \times 10^{-10}$	1.6	$1 \times 10^{-10}$																

LOC106504234			3.5	$1 \times 10^{-10}$			2.1	$1 \times 10^{-2}$				
LOC106504372			3.9	$1 \times 10^{-10}$					-2.5	$1 \times 10^{-10}$		
LOC106504562	-1.2	$1 \times 10^{-10}$										
LOC106505355							2.3	$2 \times 10^{-3}$	1.9	$6 \times 10^{-4}$		
LOC110255229			-1.4	$1 \times 10^{-10}$								
LOC110255257							-6.5	$1 \times 10^{-10}$	6.8	$1 \times 10^{-10}$	-9.1	$1 \times 10^{-10}$
LOC110255320							-5.5	$1 \times 10^{-10}$	7.5	$1 \times 10^{-10}$	-8.4	$1 \times 10^{-10}$
LOC110255360			1.8	$1 \times 10^{-10}$								
LOC110255361			2.5	$1 \times 10^{-10}$								
LOC110255657	1.7	$1 \times 10^{-10}$					-2.1	$8 \times 10^{-6}$				
LOC110256043			5.1	$1 \times 10^{-10}$					-1.8	$8 \times 10^{-8}$		
LOC110256714			6.4	$1 \times 10^{-10}$					2.4	$3 \times 10^{-8}$		
LOC110256816							1.9	$3 \times 10^{-2}$				
LOC110257240			3.0	$1 \times 10^{-10}$								
LOC110257381	1.4	$1 \times 10^{-10}$										
LOC110257883							-4.5	$1 \times 10^{-7}$	6.9	$1 \times 10^{-10}$	-8.0	$1 \times 10^{-10}$
LOC110257894							-2.5	$1 \times 10^{-5}$	3.2	$1 \times 10^{-10}$	-5.1	$1 \times 10^{-10}$
LOC110257896							-3.0	$4 \times 10^{-4}$	4.2	$1 \times 10^{-10}$	-5.8	$1 \times 10^{-10}$
LOC110257905							-3.4	$1 \times 10^{-10}$	6.8	$1 \times 10^{-10}$	-8.2	$1 \times 10^{-10}$
LOC110257919			1.8	$1 \times 10^{-10}$								
LOC110258060											1.2	$1 \times 10^{-10}$
LOC110258195							-1.8	$2 \times 10^{-2}$				
LOC110258326			4.9	$1 \times 10^{-10}$			-2.4	$1 \times 10^{-10}$				
LOC110258673	-1.7	$5 \times 10^{-2}$	6.0	$1 \times 10^{-10}$					2.1	$8 \times 10^{-5}$		
LOC110258921			1.5	$1 \times 10^{-10}$								
LOC110259088			1.5	$1 \times 10^{-10}$								
LOC110259530			1.2	$1 \times 10^{-9}$								
LOC110259864									1.7	$4 \times 10^{-3}$		
LOC110259983			6.5	$1 \times 10^{-10}$					2.3	$4 \times 10^{-7}$		
LOC110260608			-1.7	$1 \times 10^{-10}$	1.4	$1 \times 10^{-10}$						
LOC110260829	1.6	$1 \times 10^{-10}$					-1.5	$1 \times 10^{-8}$				
LOC396781			5.4	$1 \times 10^{-10}$			-1.2	$3 \times 10^{-4}$	2.3	$1 \times 10^{-10}$		
LOX			-1.9	$1 \times 10^{-10}$								
LY86			2.4	$1 \times 10^{-10}$								
LY9			2.0	$1 \times 10^{-10}$								
LYZ	-1.8	$1 \times 10^{-10}$	3.0	$1 \times 10^{-10}$	-2.1	$1 \times 10^{-10}$			3.5	$1 \times 10^{-10}$		
MARCO			5.6	$1 \times 10^{-10}$								
MEFV									1.9	$3 \times 10^{-5}$		
MX2			2.9	$1 \times 10^{-10}$								
NLRC5			1.5	$1 \times 10^{-10}$								
NPSR1			-1.6	$1 \times 10^{-10}$					-3.6	$1 \times 10^{-10}$		
OAS1							1.3	$1 \times 10^{-3}$	-2.0	$1 \times 10^{-10}$		
OASL	-1.2	$7 \times 10^{-4}$	4.7	$1 \times 10^{-10}$					-1.3	$4 \times 10^{-2}$		
OLR1			1.7	$1 \times 10^{-10}$	-1.3	$1 \times 10^{-10}$						
PARP12			1.2	$1 \times 10^{-10}$								

PARP14			2.0	$1 \times 10^{-10}$								
PARP9			1.3	$1 \times 10^{-10}$								
PI15	1.2	$1 \times 10^{-10}$			-1.6	$1 \times 10^{-10}$			-1.4	$1 \times 10^{-2}$		
PILRA			1.6	$1 \times 10^{-10}$					1.6	$8 \times 10^{-3}$		
PLAC8			2.4	$1 \times 10^{-10}$			1.6	$3 \times 10^{-4}$	-1.4	$2 \times 10^{-5}$		
PNPLA4-2									-1.7	$1 \times 10^{-4}$		
POSTN							1.5	$3 \times 10^{-3}$				
PRF1			2.7	$1 \times 10^{-10}$								
PSMB8			1.6	$1 \times 10^{-10}$								
PSMB9			1.8	$1 \times 10^{-10}$								
PTPN7			1.5	$1 \times 10^{-10}$								
PTPRC			1.5	$1 \times 10^{-10}$								
PYURF	5.6	$1 \times 10^{-10}$	5.6	$1 \times 10^{-10}$	-5.4	$1 \times 10^{-10}$	8.2	$1 \times 10^{-10}$	-2.8	$1 \times 10^{-10}$	4.2	$1 \times 10^{-10}$
RHBDF2			1.6	$1 \times 10^{-10}$								
RSAD2			4.5	$1 \times 10^{-10}$			1.2	$4 \times 10^{-4}$				
RUNX3			1.9	$1 \times 10^{-10}$								
S100A4					-1.2	$1 \times 10^{-10}$						
SAA3	-2.7	$1 \times 10^{-7}$	6.2	$1 \times 10^{-10}$	-2.5	$5 \times 10^{-5}$			2.8	$1 \times 10^{-10}$		
SAMSN1			1.4	$1 \times 10^{-10}$								
SDS									1.8	$1 \times 10^{-6}$		
SELE			3.0	$1 \times 10^{-10}$	-1.5	$1 \times 10^{-10}$			2.9	$1 \times 10^{-10}$		
SELL									1.7	$5 \times 10^{-5}$		
SERPINE1			1.2	$1 \times 10^{-10}$					2.5	$1 \times 10^{-10}$		
SFRP5	1.3	$1 \times 10^{-10}$			-1.3	$1 \times 10^{-10}$			-1.4	$4 \times 10^{-2}$		
SIGLEC1			1.8	$1 \times 10^{-10}$								
SIGLEC14												
SLA-2			1.7	$1 \times 10^{-10}$								
SLA- <sup>3</sup>			1.3	$1 \times 10^{-10}$								
SLA- <sup>5</sup>	-1.3	$1 \times 10^{-10}$	1.7	$1 \times 10^{-10}$								
SLA-DMA			1.6	$1 \times 10^{-10}$								
SLA-DOA			3.4	$1 \times 10^{-10}$					-2.3	$4 \times 10^{-5}$		
SLA-DQA1			3.2	$1 \times 10^{-10}$	-1.2	$1 \times 10^{-10}$	1.3	$7 \times 10^{-4}$	-1.4	$6 \times 10^{-8}$		
SLA-DQB1			2.6	$1 \times 10^{-10}$					-1.5	$1 \times 10^{-10}$		
SLA-DRA			3.8	$1 \times 10^{-10}$	-1.3	$1 \times 10^{-10}$			-1.9	$1 \times 10^{-10}$		
SLA-DRB1			2.3	$1 \times 10^{-10}$			1.5	$3 \times 10^{-4}$	-1.2	$2 \times 10^{-4}$		
SLC13A4	1.3	$1 \times 10^{-10}$										
SLC5A5	1.8	$1 \times 10^{-10}$	-1.7	$1 \times 10^{-10}$					-1.5	$2 \times 10^{-3}$		
SOCS3			1.5	$1 \times 10^{-10}$					2.6	$1 \times 10^{-10}$		
SPN			1.3	$1 \times 10^{-10}$								
SRGN			1.3	$1 \times 10^{-10}$					1.5	$1 \times 10^{-10}$		
STX11			2.4	$1 \times 10^{-10}$								
TAP1			1.5	$1 \times 10^{-10}$								
TAP2			1.2	$1 \times 10^{-10}$								
TBX21			2.7	$1 \times 10^{-10}$	-1.4	$5 \times 10^{-6}$						
TGM1									1.7	$1 \times 10^{-3}$		

THBS1										
TIMP1					-1.3	$1 \times 10^{-10}$	1.2	$7 \times 10^{-4}$	1.5	$1 \times 10^{-10}$
TMEM156			1.2	$1 \times 10^{-10}$						
TNMD	1.4	$1 \times 10^{-10}$	-1.3	$1 \times 10^{-10}$	-1.6	$1 \times 10^{-10}$			-1.4	$2 \times 10^{-2}$
TTR									2.1	$2 \times 10^{-9}$
UBA7			1.3	$1 \times 10^{-10}$						
UBD			4.1	$1 \times 10^{-10}$			1.7	$1 \times 10^{-2}$		
UNC93B1				1.4	$1 \times 10^{-10}$					
USP18				2.0	$1 \times 10^{-10}$					
XAF1				1.7	$1 \times 10^{-10}$					
ZBP1				2.1	$1 \times 10^{-10}$					

**Supplemental Table S2.** Log2(fold change) of pairwise contrasts between treatment groups for genes in the cell adhesion molecules pathway.

Gene	MC vs SC <sup>1</sup>	MP vs MP	MC vs SP	MP vs SC	SP vs SC	MP vs SP
CD2	-0.01	2.29	-4.21	2.29	4.21	-1.92
CD22	0.49	0.29	-0.85	0.77	1.34	-0.56
CD274	0.24	0.54	-1.92	0.78	2.17	-1.39
CD4	0.03	-0.33	0.09	-0.30	-0.06	-0.23
CD40	-0.24	0.52	-1.07	0.28	0.83	-0.55
CD6	-0.39	1.42	-2.84	1.02	2.44	-1.42
CD80	0.38	-0.01	0.09	0.38	0.29	0.09
CD8A	0.10	0.35	-0.69	0.45	0.79	-0.34
CDH1	-1.86	0.16	-0.53	-1.70	-1.32	-0.38
CDH2	0.36	-0.14	0.02	0.22	0.34	-0.12
CLDN6	-1	0.33	-0.50	-0.67	-0.50	-0.17
CNTN1	0.33	-0.12	0.18	0.21	0.14	0.06
F11R	0.19	0.08	-0.15	0.27	0.34	-0.07
ICAM1	-0.26	0.47	-1.15	0.21	0.88	-0.67
ICAM2	-0.41	0.49	-1.14	0.07	0.73	-0.65
ICAM3	-0.49	0.34	-0.71	-0.15	0.22	-0.38
ITGA4	0.48	0.31	-1.09	0.79	1.57	-0.78
ITGA6	0.19	-0.21	0.13	-0.02	0.06	-0.08
ITGA8	0.34	-0.19	0.07	0.15	0.27	-0.11
ITGAL	0.01	0.20	-0.46	0.22	0.47	-0.26
ITGAM	-0.04	0.39	-0.42	0.35	0.38	-0.03
ITGB2	0.07	0.20	-0.61	0.27	0.68	-0.41
ITGB7	-0.14	1.41	-2.58	1.28	2.45	-1.17
ITGB8	0.55	-0.17	0.35	0.38	0.20	0.18
L1CAM	0.13	-0.07	-0.04	0.06	0.18	-0.12
MADCAM1	-0.44	0.57	-0.80	0.12	0.36	-0.23
NCAM2	0.35	-0.11	0.10	0.23	0.25	-0.01
NEGR1	0.29	-0.12	-0.01	0.17	0.29	-0.12
NFASC	0.49	-0.16	0.36	0.33	0.13	0.21
NLGN1	0.24	-0.11	0.10	0.13	0.14	-0.01
NRCAM	0.29	-0.14	0.12	0.15	0.17	-0.02
NRXN3	0.20	-0.08	-0.02	0.12	0.22	-0.10
NTNG1	0.17	-0.06	-0.15	0.11	0.31	-0.21
PTPRC	0.24	0.91	-1.93	1.15	2.17	-1.02

SDC1	-0.28	-0.01	-0.33	-0.28	0.06	-0.33
SELE	-0.84	2.26	-4.50	1.43	3.67	-2.24
SELL	0.05	0.17	-2.07	0.22	2.12	-1.90
SELP	-0.40	1.02	-1.48	0.62	1.08	-0.46
SELPLG	-0.04	0.27	-0.29	0.23	0.25	-0.02
SIGLEC1	-0.19	1.25	-2.45	1.05	2.26	-1.21
SPN	-0.29	1.02	-1.79	0.73	1.50	-0.77
TIGIT	-0.01	0.19	-0.67	0.18	0.66	-0.48
VCAN	0.44	-0.12	0.17	0.33	0.27	0.06

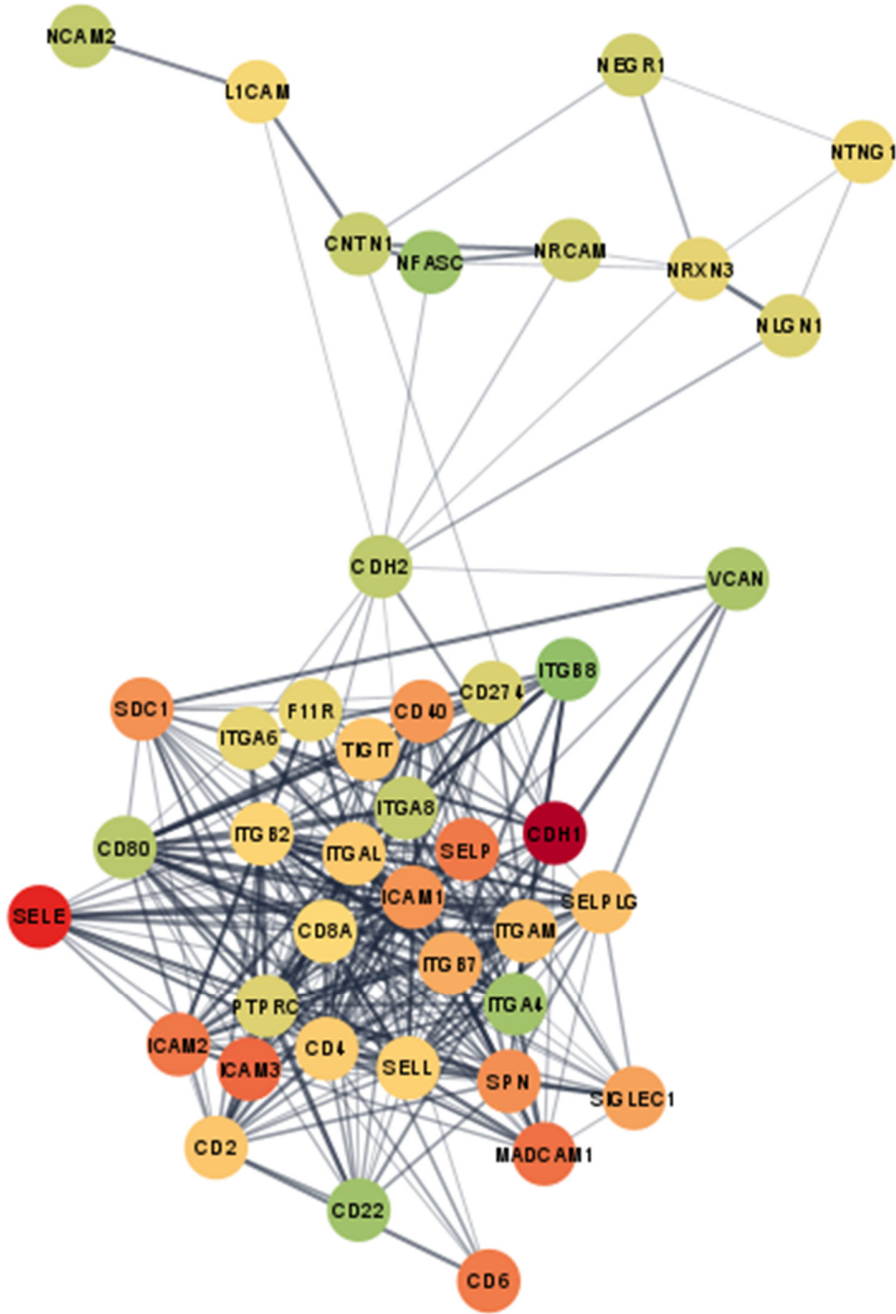
<sup>1</sup>MC = morphin × 10-treated Control group, SC = salin × 10-treated Control group, MP = morphin × 10-treated MIA-exposed group, SP = salin × 10-treated MIA-exposed group.

**Supplemental Table S3.** Log2(fold change) of pairwise contrasts between treatment groups for genes in the long-term depression pathway.

Gene	MC vs SC <sup>1</sup>	MP vs MP	MC vs SP	MP vs SC	SP vs SC	MP vs SP
BRAF	0.29	-0.08	0.11	0.21	0.19	0.02
CACNA1A	0.26	-0.06	0.06	0.20	0.20	-0.01
GNA13	0.21	-0.05	0.05	0.16	0.16	-0.01
GNAI1	0.28	-0.12	0.06	0.16	0.22	-0.05
GNAQ	0.42	-0.13	0.08	0.29	0.34	-0.05
GRIA1	0.15	-0.07	0.02	0.08	0.13	-0.05
GRIA2	0.46	-0.15	0.07	0.31	0.39	-0.08
GRIA3	0.14	-0.04	-0.01	0.10	0.15	-0.05
GRID2	0.30	-0.12	0.27	0.18	0.03	0.15
GRM1	0.45	-0.11	-0.06	0.33	0.51	-0.17
GUCY1A2	0.53	-0.22	0.14	0.31	0.39	-0.08
IGF1R	0.30	-0.03	0.05	0.27	0.25	0.02
ITPR1	0.26	-0.04	-0.01	0.22	0.27	-0.05
ITPR2	0.07	0.01	0.14	0.07	-0.07	0.14
ITPR3	0.19	-0.06	0.28	0.13	-0.08	0.22
KRAS	0.46	-0.19	0.11	0.27	0.35	-0.08
LYN	0.10	-0.03	-0.05	0.07	0.15	-0.08
MAP2K1	-0.06	0.05	-0.13	-0.02	0.06	-0.08
MAPK1	0.10	-0.05	-0.03	0.05	0.13	-0.08
PLA2G4A	0.05	0.10	-0.36	0.15	0.41	-0.26
PLA2G4B	0.16	0.07	0.07	0.23	0.10	0.13
PLA2G4E	0.21	-0.12	-0.02	0.08	0.22	-0.14
PLCB1	0.19	-0.07	0.02	0.12	0.17	-0.05
PLCB2	0.15	0.03	-0.20	0.17	0.34	-0.17
PPP1R17	0.08	-0.14	0.02	-0.06	0.06	-0.12
PRKCB	0.09	-0.06	-0.02	0.03	0.11	-0.08
PRKG1	0.30	-0.12	0.16	0.18	0.14	0.05
PRKG2	0.35	-0.01	0.32	0.33	0.02	0.31
RYR1	0.52	0.36	-0.04	0.87	0.56	0.32

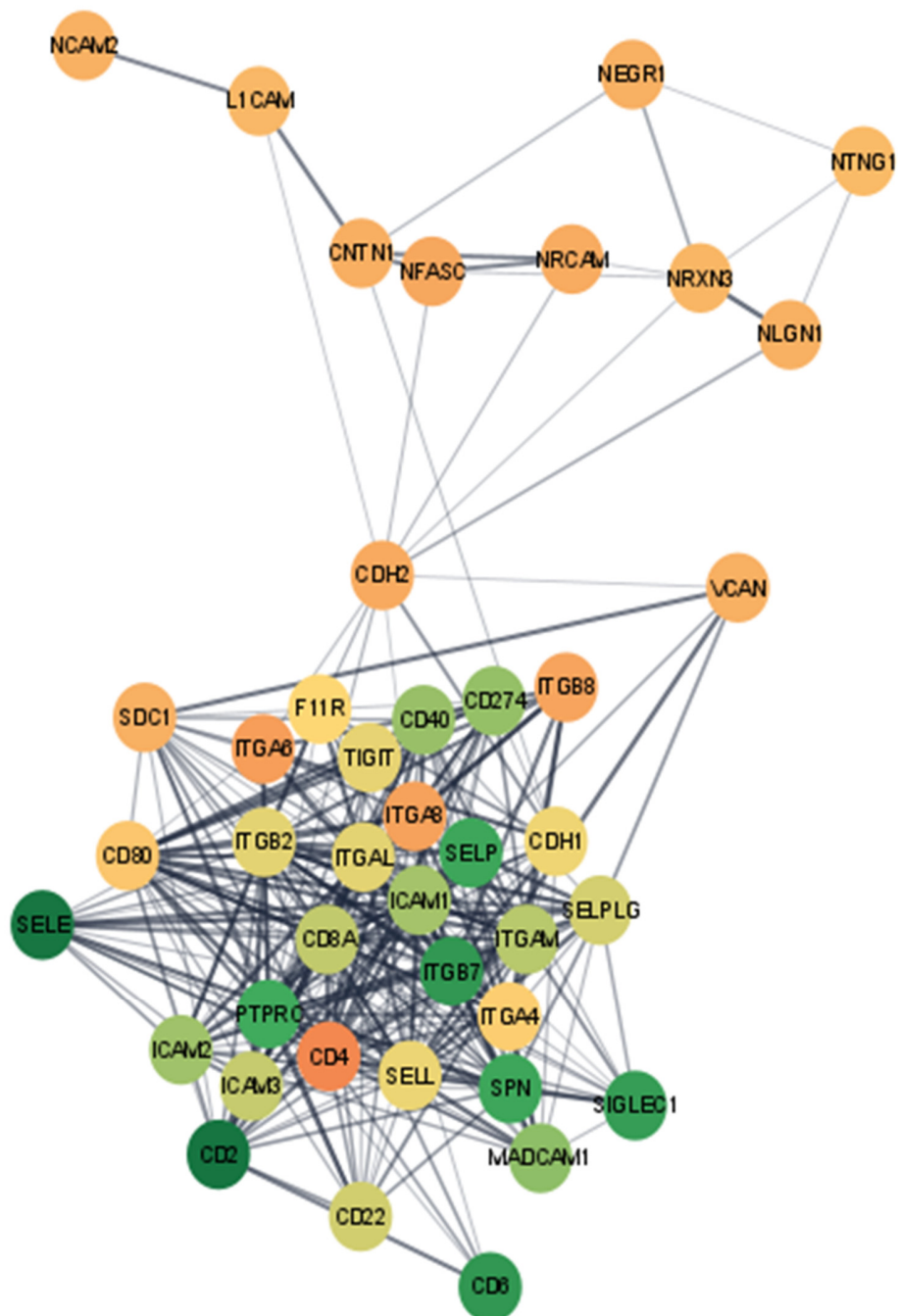
<sup>1</sup>MC = morphin × 10-treated Control group, SC = salin × 10-treated Control group, MP = morphin × 10-treated MIA-exposed group, SP = salin × 10-treated MIA-exposed group.

CM vs CS

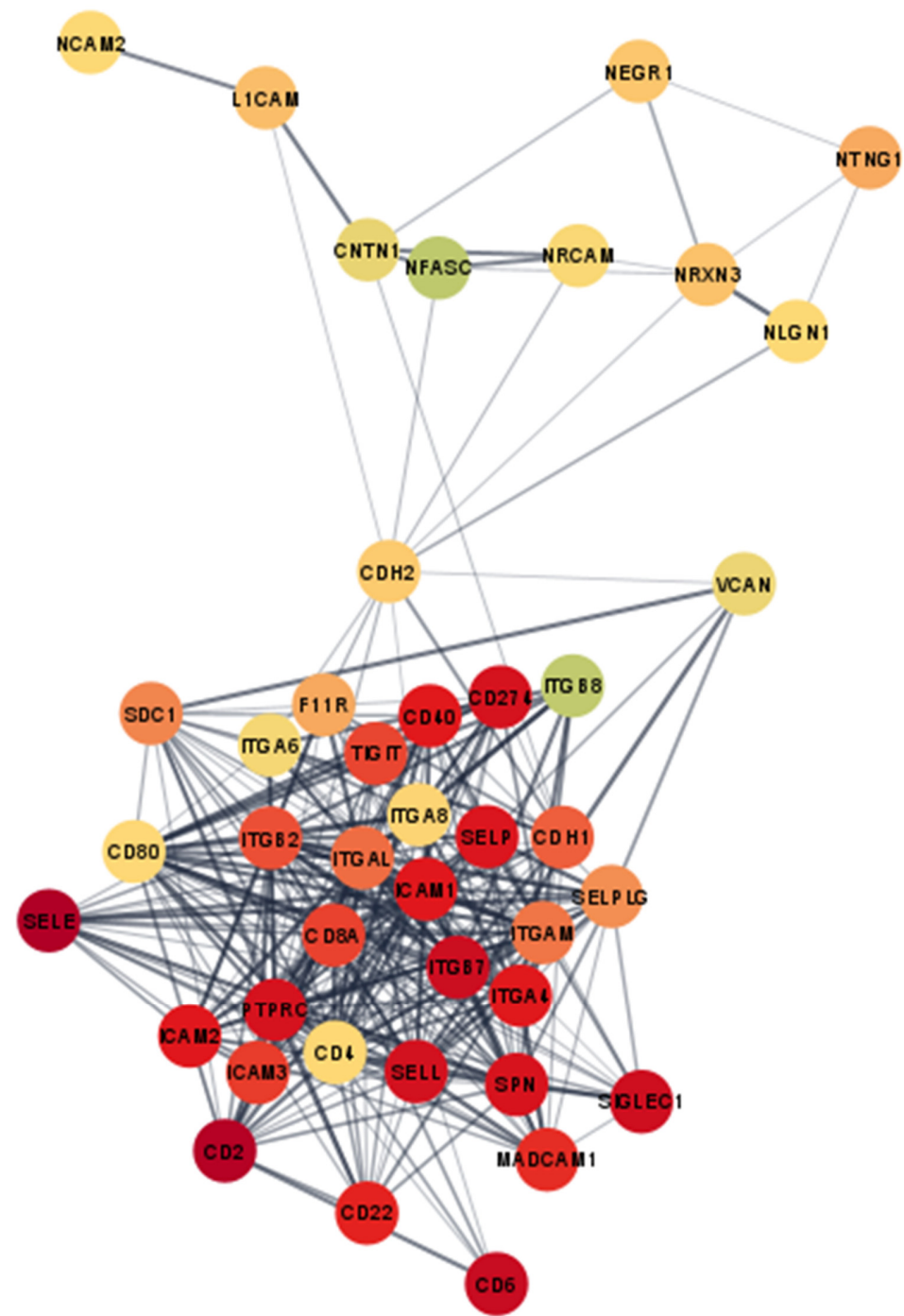




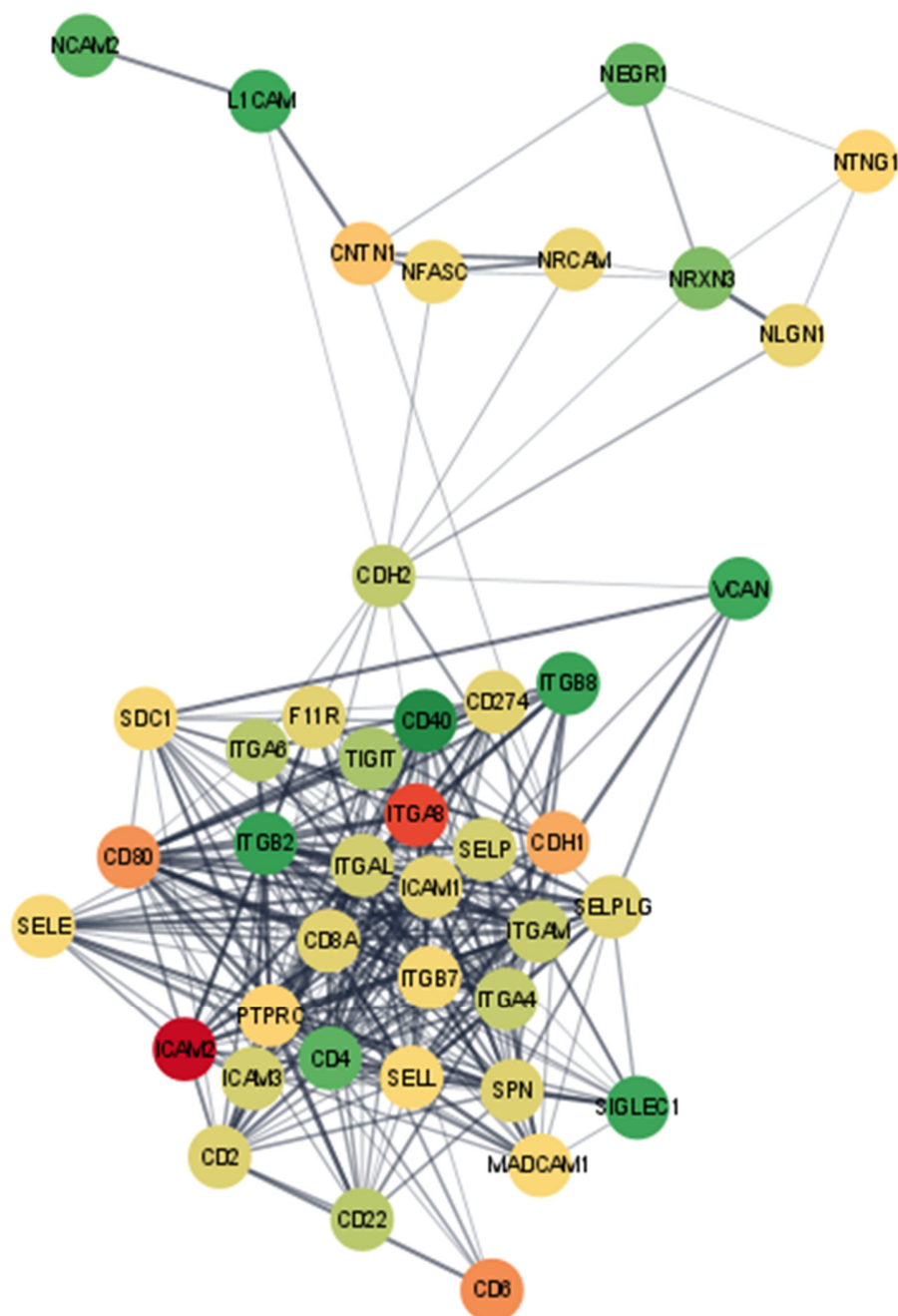
## PM vs CM



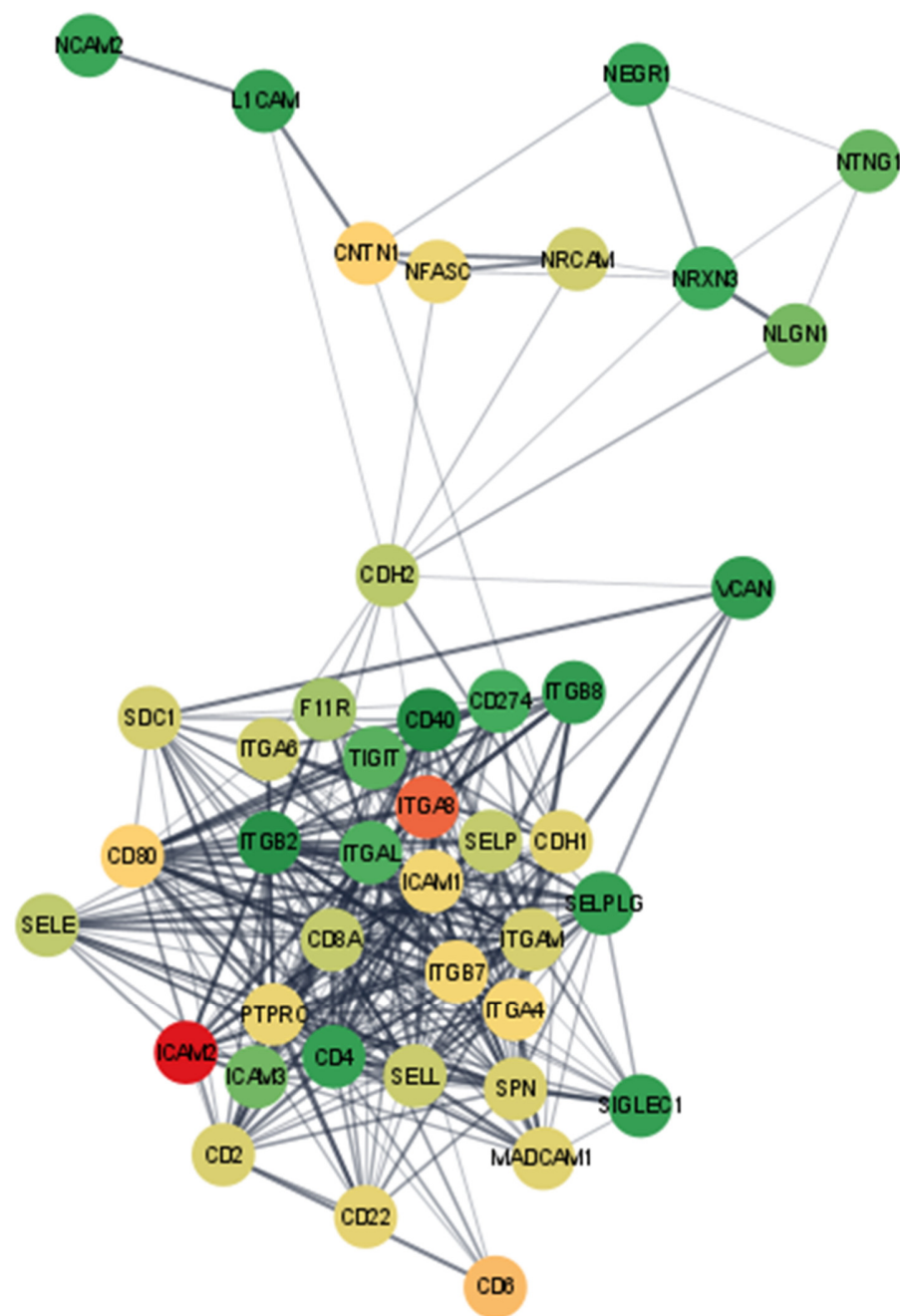
CM vs PS



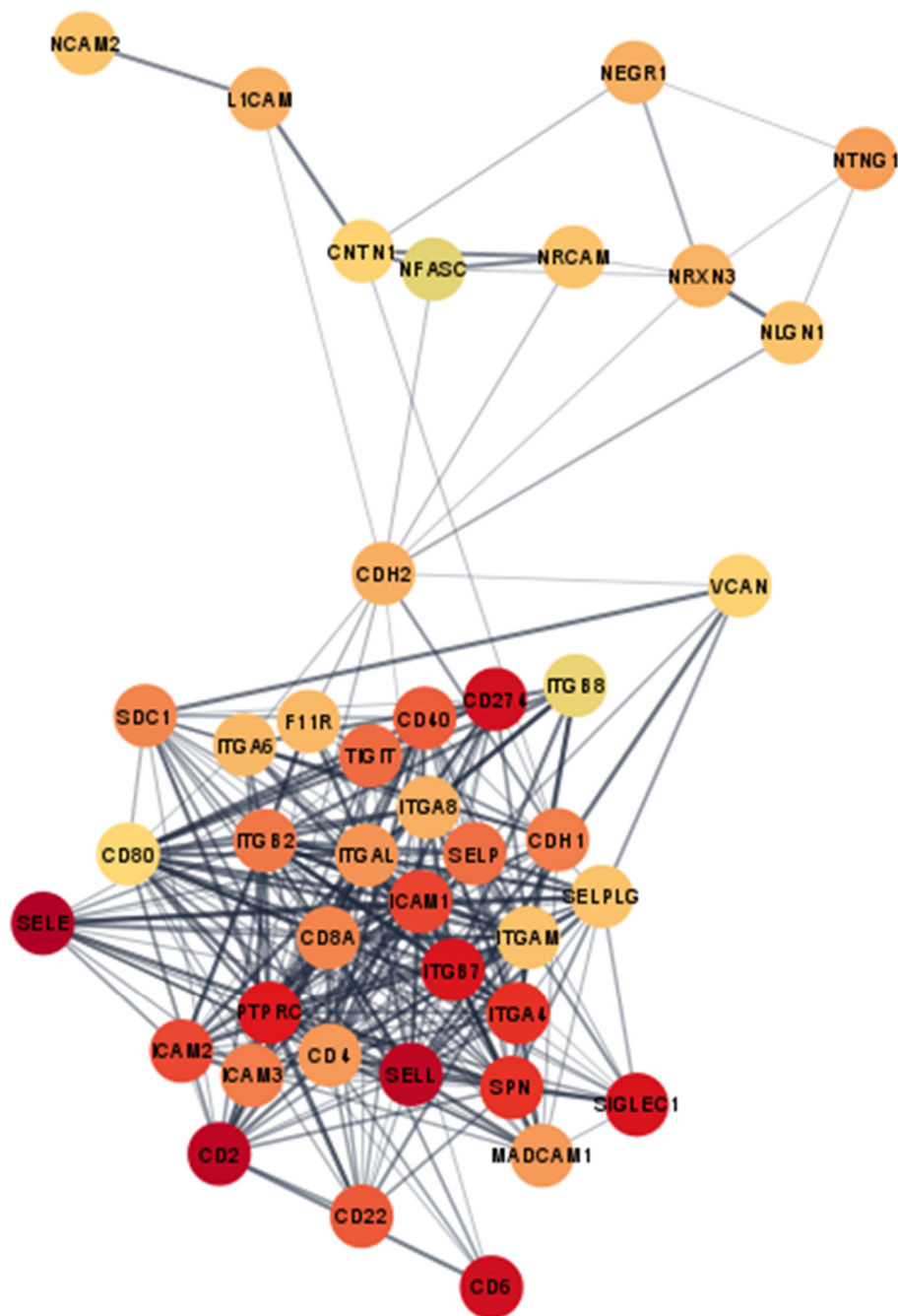
## PM vs CS



PS vs CS



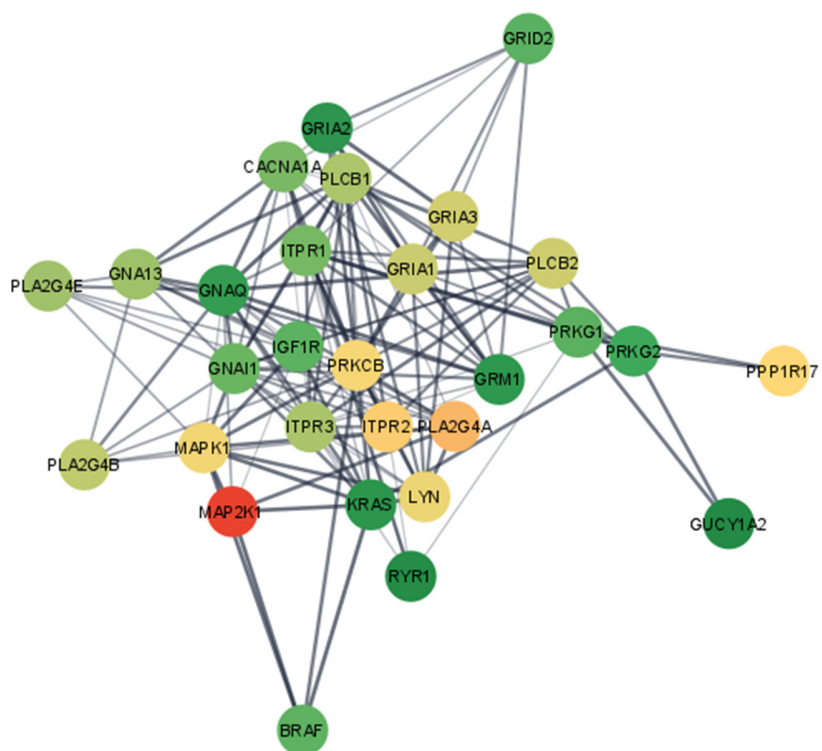
PM vs PS



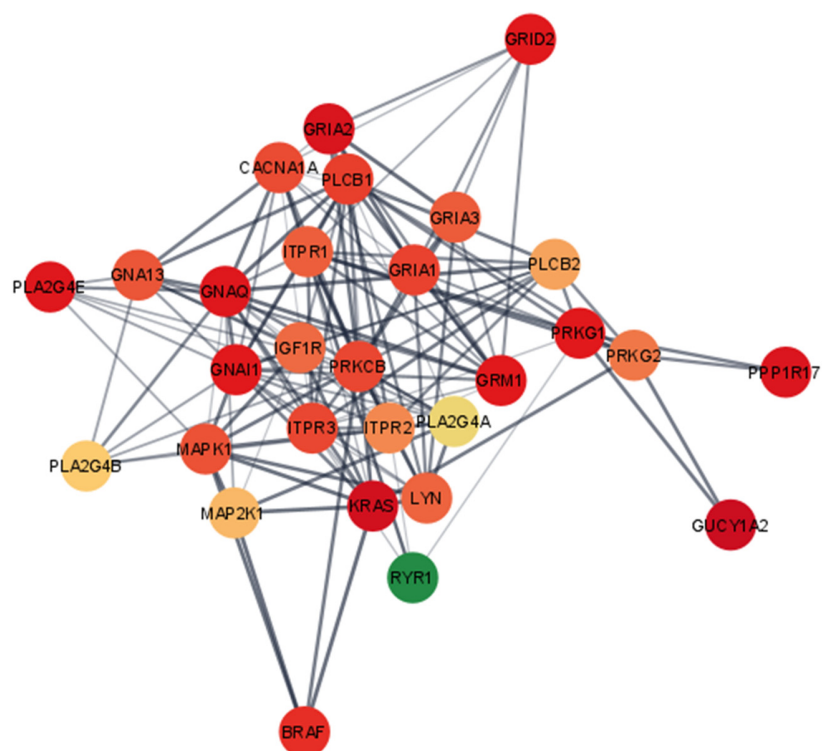
**Supplemental Figure S1.** Complete gene networks for the cellular adhesion molecules pathway. Nodes = genes; edges = STRING database connections; node color = differential expression between groups characterized by opioid (M=morphine or S=saline) followed by MIA exposure (C=control or P=viral MIA) from red (under-expressed in first vs second group, to yellow, and green (over-expressed in first versus second group. Networks: MC vs SC = morphin × 10-treated Control vs salin × 10-treated Control; MP vs MC = morphin × 10-treated MIA vs morphin × 10-treated Control; MC vs SP = morphin × 10-treated Control vs salin × 10-treated MIA; MP vs SC = morphin × 10-treated MIA vs salin × 10-treated Control; SP vs SC = salin × 10-treated MIA vs salin × 10-treated Control; and MP vs SP = morphin × 10-treated MIA vs salin × 10-treated MIA.

## CM vs CS

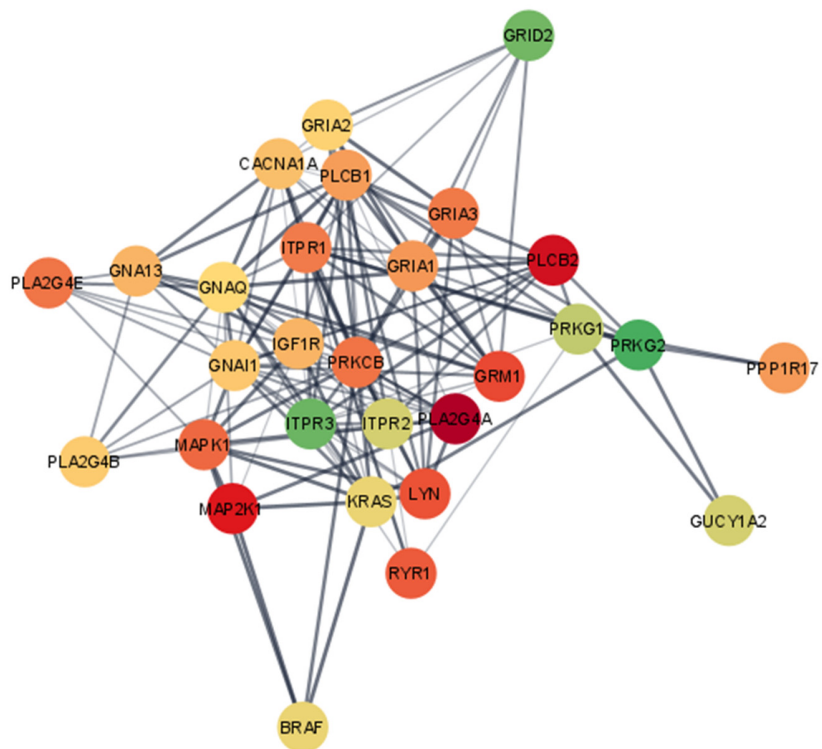




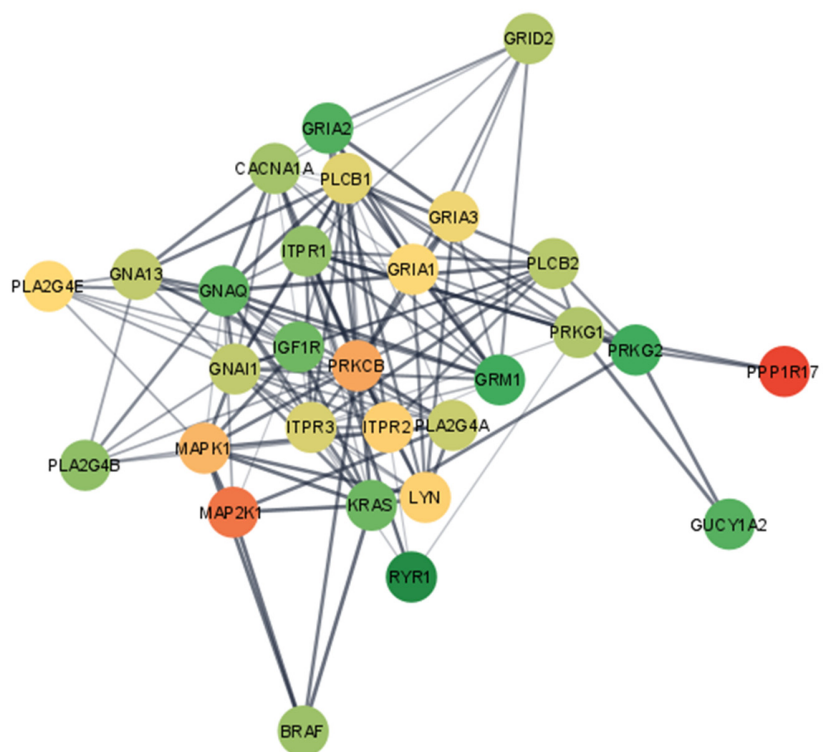
**PM vs CM**



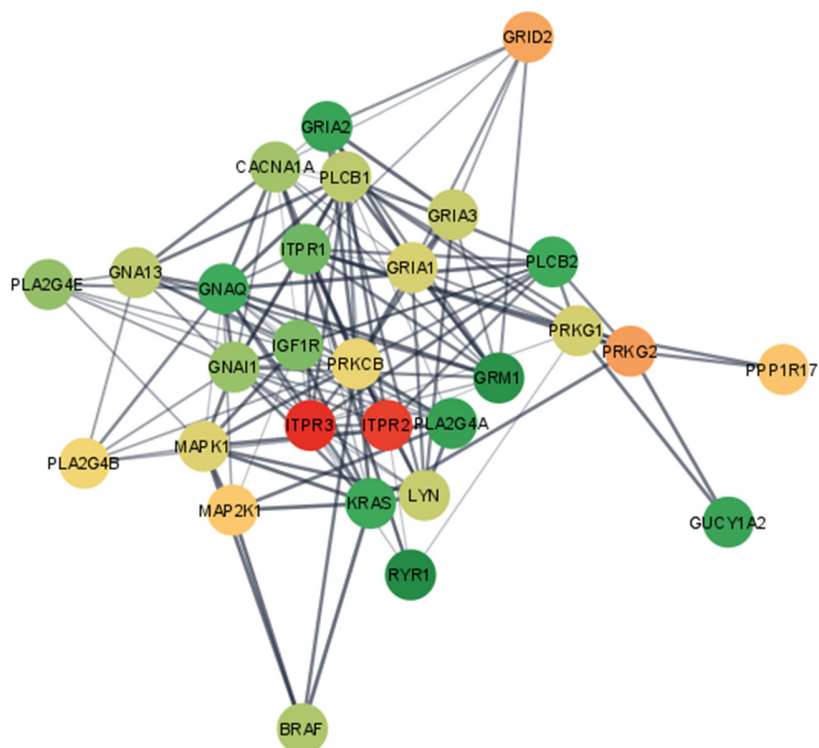
**CM vs PS**



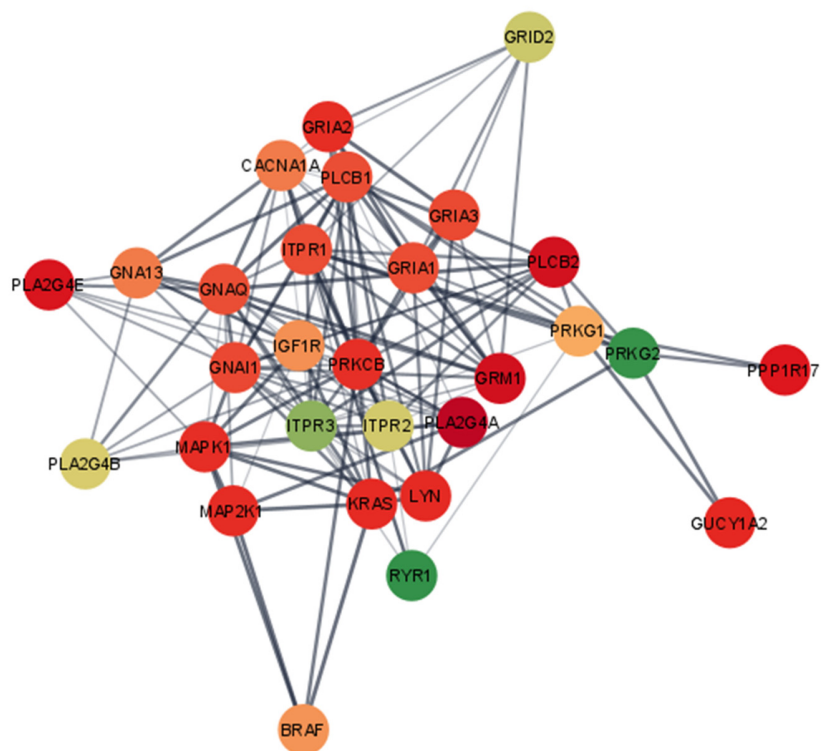
PM vs CS



PS vs CS



# PM vs PS



**Supplemental Figure S2.** Complete gene networks for the long-term depression pathway. Nodes = genes; edges = STRING database connections; node color = differential expression between groups characterized by opioid (M=morphine or



S=saline) followed by MIA exposure (C=control or P=viral MIA) from red (under-expressed in first vs second group, to yellow, and green (over-expressed in first versus second group. Networks: MC vs SC = morphin × 10-treated Control vs salin × 10-treated Control; MP vs MC = morphin × 10-treated MIA vs morphin × 10-treated Control; MC vs SP = morphin × 10-treated Control vs salin × 10-treated MIA; MP vs SC = morphin × 10-treated MIA vs salin × 10-treated Control; SP vs SC = salin × 10-treated MIA vs salin × 10-treated Control; and MP vs SP = morphin × 10-treated MIA vs salin × 10-treated MIA.