Table 1 Class I and II genes

Mouse Accession Number	**Gene Symbol** Name	METH changes	VPA changes	Stopped by Co-Treatment	Changed in Multiple Brain Regions	CFG	Relevant biological role in brain	Hum post
Prefrontal Cortex								
▪ **Downregulated / Upregulated**								
L13171	**MEF2C** MADS box transcription enhancer factor 2	Fold 0.81/ 0.75 P value 0.0016/ 0.00061	Fold 1.23/ 2.46 P value 0.0003/ 0	Yes	**AMY** VPA III 0.76/ 0.44 P value 0.00005/ 0.000046	5q14.3	Yes	Post diffe cort
▪ **Upregulated**								
AI839758	**DARPP-32** dopamine- and cAMP- regulated phosphoprotein of 32 kilodaltons	Fold 1.62/ 1.74 P value 0.000001/ 0.000001	Fold 1.62/ 1.41 P value 0.000001/ 0.00047	Yes		17q12 **BP D17S1860 3.76 cM** (Segurado et al 2003)	Yes	Dec (Alb
M55181	**PENK** Preproenkephalin 2	Fold 1.62/ 2.14 P value 0.000059/ 0	Fold 1.74/ 1.62 P value 0.0000004/ 0.000001	Yes		8q12.1 **SZ** (Kaufmann et al 1998 – PENK cited in paper)	Yes	Elev Subs (Iad
D17584	**TAC1** Tachykinin 1 - substance P	Fold 1.52/ 1.74 P value 0.000019/ 0.000004	Fold 1.23/ 1.41 P value 0.0013/ 0.0012	Yes		7q21.3 **SZ D7S821 1.14 cM** (Yan et al 2000)	Yes	Rec orbi **MD** 200 Rec PFC 200
AI852526	**GPR88** G-protein coupled receptor 88	Fold 1.74/ 2.46 P value 0/ 0	Fold 1.62/ 1.86 P value 0.000005/ 0.000001	Yes		1p21.2	Yes	
Amygdala								
▪ **Upregulated**								
V00835	**MT1** Metallothionein 1	Fold 1.51/ 1.51 P value 0.000068/ 0.00012	Fold 1.51/ 1.51 P value 0.000003/ 0.000099			16q13	Yes	
AI849207	**GORASP2** Golgi reassembly stacking protein 2	Fold 1.41/ 1.32 P value 0.00065/ 0.00017	Fold 1.23/ 1.32 P value 0.0018/ 0.00050			2q31.1		
AB007136	**PSME1** Protease (prosome, macropain) 28 subunit, alpha	Fold 1.32/ 1.41 P value 0.0021/ 0.00057	Fold 1.41/ 1.62 P value 0.00096/ 0.000090			14q11.2		
AA921069	**EST**	Fold 1.41/ 1.62 P value 0.0015/ 0.000054	Fold 1.23/ 1.87 P value 0.000099/ 0.000011					
▪ **Downregulated**								
AW060974	**CDK5R1** Cyclin-dependent kinase 5, regulatory subunit (p35)	Fold 0.66/ 0.76 P value 0.0000001/ 0.0022	Fold 0.76/ 0.57 P value 0.00019/ 0.0000001		**CP** VPA III 1.62/ 2.83 p value 0.000043/ 0.0021	17q11.2	Yes	Dow of **o** (Fer
AI841038	**HIP14** huntingtin interacting protein 14	Fold 0.5/ 0.87 P value 0.000079/ 0.0014	Fold 0.66/ 0.10 P value 0.000008/ 0.000003			12q21.1	Yes	

AW048171	**CLSTN1** calsyntenin 1	Fold 0.66/ 0.81 P value 0/ 0.000059	Fold 0.81/ 0.66 P value 0.000079/ 0.000005			1p36.22	Yes	
AI836322	**DLC2** dynein light chain 2	Fold 0.61/ 0.46 P value 0.000023/ 0.000001	Fold 0.65/ 0.57 P value 0.000001/ 0.000023			17q23.2		
Caudate Putamen								
▪ **Upregulated**								
U89352	**LYPLA1** Lysophospholipase I	Fold 1.41/ 1.62 p value 0.001/ 0.00044	Fold 1.41/ 1.52 p value 0.0012/ 0.000069	Yes		8q11.23	Yes	Abn al. 1 (Ros
D37792	**SYT1** Synaptotagmin 1	Fold 1.23/ 8 p value 0.0028/ 0	Fold 1.41/ 8 p value 0.000006/ 0		VPA D/D, I/I **AMY, VT** VPA IV 0.76/ 0.16, 1.23/ 1.41 P value 0.000001/ 0.000001, 0.00057/ 0.00044	12q21.2	Yes	Incr (Sok
U19582	**CLDN11** Claudin 11 - Oligodendrocyte specific protein	Fold 1.32/ 1.41 p value 0.00031/ 0.000008	Fold 1.41/ 1.41 p value 0.000027/ 0.0019			3q26.2 **BP** **D3S1565** **6.51 cM** (Cichon et al. 2001)	Yes	Dow PFC (Tka
U81317	**MOBP** myelin-associated oligodendrocytic basic protein	Fold 1.41/ 3.73 p value 0/ 0	Fold 1.52/ 3.73 p value 0.000004/ 0		**VT** VPA IV 1.32/ 1.32 p value 0.00090/ 0.0011	3p22.2 **SZ** **D3S3521** **0.04 cM** (Lewis et al 2003)	Yes	
AI747899	**PITPNB** phosphotidylinositol transfer protein, beta	Fold 1.41/ 8.57 p value 0.000043/ 0.000002	Fold 1.62/ 8 p value 0.000059/ 0			22q12.1 **SZ** **D22S424** **7.62 cM** (Lewis et al 2003)	Yes	
Y13361	**RAB7** Member RAS oncogene family	Fold 1.23/ 5.66 p value 0.0021/ 0.000001	Fold 1.32/ 5.66 p value 0.00012/ 0.000001		**AMY** VPA IV 0.81/ 0.38 0.000007/ 0.000001	3q21.3	Yes	
AF011379	**ADAM10** A disintegrin and metalloproteinase domain	Fold 1.32/ 6.50 p value 0.00025/ 0.000074	Fold 1.87/ 8 p value 0.000054/ 0.000099			15q21.3	Yes	Incr al. 2
AI837838	**TMEFF1** transmembrane protein	Fold 1.52/ 1.41 p value 0.000092/ 0.00090	Fold 1.52/ 2 p value 0.00023/ 0.0017			9q31.1 **BP** **D9S938** **3.26 cM** (Liu et al. 2003)	Yes	
AB025011	**RNF138** ring finger protein 138	Fold 1.23/ 1.52 p value 0.0028/ 0.00022	Fold 1.23/ 2.14 p value 0.00061/ 0.000015			18q12.1 **SZ, BP** **D18S1145** **7.34 cM** (Maziade et al. 2001)		
U21855	**CNOT7** CCR4-NOT transcription complex, subunit 7	Fold 1.32/ 2.64 p value 0.00033/ 0.000007	Fold 1.62/ 3.48 p value 0.00012/ 0.000003			8p22 **BP** **D8S1790** **3.69 cM** (Segurado et al		

						2003)		
AW227650	**SSR3** signal sequence receptor, gamma	Fold 1.32/ 11.3 p value 0.00021/ 0	Fold 1.87/ 13 p value 0.000034/ 0			3q25.31 **BP** **D3S1279** **3.86 cM** (Badenhop et al. 2002)		
U48896	**UGT8** UDP-glucuronosyltransferase 8	Fold 1.32/ 9.19 p value 0.0025/ 0.000005	Fold 1.41/ 9.19 p value 0.00065/ 0.000018			4q26	Yes	
D10627	**EST** zinc finger transcription factor-like	Fold 1.52/ 1.87 p value 0.000012/ 0.00019	Fold 1.41/ 2.14 p value 0.00079/ 0.00005					
▪ **Downregulated**								
U49251	**TBR1** T-box brain gene 1	Fold 0.5/ 0.44 p value 0.000007/ 0.000014	Fold 0.5/ 0.38 p value 0.000018/ 0.000027		**NA** VPA IV 0.35/ 0.81 p value 0.000001/ 0.00033	2q24.2 **SZ** **D2S2275** **7.08 cM** (Lewis et al 2003)	Yes	Incr et al
X59520	**CCK** Cholecystokinin	Fold 0.38/ 0.5 p value 0/ 0.000001	Fold 0.62/ 0.5 p value 0/ 0		**NA** METH IV 0.76/ 0.47 p value 0.00025/ 0	3p22-p21.3 **SZ** **D3S3521** **1.96 cM** (Lewis et al 2003)	Yes	Dec (We (Bac
AI843866	**CAMKK2** calcium/calmodulin-dependent protein kinase kinase 2, beta	Fold 0.66/ 0.87 p value 0.0014/ 0.0010	Fold 0.81/ 0.71 p value 0.000031/ 0.00033	Yes		12q24.31 **BP** **D12S1639** **8 cM** (Ewald et al. 2002)	Yes	
AI848661	**BTBD3** BTB (POZ) domain containing 3	Fold 0.76/ 0.57 p value 0.00010/ 0.000025	Fold 0.81/ 0.62 p value 0.00049/ 0.000023		**AMY, PFC** VPA III, IV 0.66/ 0.31, 1.32/ 1.52 p value 0.00060/ 0.000008, 0.0016/ 0.000054	20p12.2 **BP** **D20S162** **5.24 cM** (Willour et al. 2003)		
AW045893	**NCALD** neurocalcin delta	Fold 0.76/ 0.54 p value 0.00012/ 0	Fold 0.76/ 0.47 p value 0.000011/ 0			8q22.3	Yes	
AW122328	**NPTX1** neuronal pentraxin 1	Fold 0.66/ 0.5 p value 0.000002/ 0.000001	Fold 0.66/ 0.57 p value 0.000008/ 0.000015			17q25.3	Yes	
AI853550	**EST**	Fold 0.16/ 0.47 p value 0.000009/ 0.000059	Fold 0.19/ 0.47 p value 0.000011/ 0.00004					
AI844183	**EST**	Fold 0.76/ 0.76 p value 0.0020/ 0.000004	Fold 0.76/ 0.81 p value 0.00038/ 0.00019					
Nucleus Accumbens								
▪ **Upregulated**								
AW120565	**GAT3** (SLC6A11) neurotransmitter transporter, GABA	Fold 1.74/ 1.51 P value 0.000003/ 0.000002	Fold 1.41/ 1.31 P value 0.00053/ 0.000085	Yes		3p25.3	Yes	
		Fold 1.86/ 1.74	Fold 1.74/ 1.74					

AI837110	**PRMT1** HMT1 hnRNP methyltransferase-like 2	P value 0.000007/ 0.000002	P value 0.000029/ 0.00057		19q13.33	Yes	
AW046758	**ROXAN** ubiquitous tetratricopeptide containing protein	Fold 1.86/ 1.31 P value 0.000015/ 0.000003	Fold 1.74/ 1.23 P value 0.000005/ 0.000059		22q13 **BP** **D22S685** **9.66 cM** (Liang et al 2003) **SZ** **D22S424** **8.60 cM** (Lewis et al 2003)		

Ventral Tegmentum

- **Downregulated**

AI848384	**GLUL** glutamate-ammonia ligase (glutamine synthase)	Fold 0.61/ 0.65 P value 0.0000001/ 0	Fold 0.61/ 0.61 P value 0.0000001/ 0	**PFC** METH III 0.71/ 0.81 p value 0.000013/ 0.00095	1q25.3 **SZ** **D1S202** **3.39 cM** (Lewis et al 2003)	Yes	Alsc Dec (Rob
AI836414	**SRRM2** serine/arginine repetitive matrix 2	Fold 0.70/ 0.75 P value 0.000037/ 0.000003	Fold 0.65/ 0.75 P value 0.0000001/ 0.000003	**CP** VPA IV 0.81/ 0.66 0.0012/ 0.000003	16p13.3 **BP** **D16S510** **1.6 cM** (Ewald 2002)		
U70132	**PITX2** paired-like homeodomain transcription factor 2	Fold 0.53/ 0.37 P value 0.000002/ 0.0000001	Fold 0.5/ 0.65 P value 0.0000001/ 0.000005		4q25	Yes	
AV325375	**MEG3** maternally expressed gene 3	Fold 0.65/ 0.87 P value 0.000006/ 0.00084	Fold 0.57/ 0.81 P value 0.000029/ 0.000014		14q32 **BP** maternal imprinting **D14S65** **7.58 cM** (Cichon et al. 2002)		