

Table S2. Genes showing twofold changes in expression in both ethanol-treated and nicotine-treated animals compared with control animals grouped according to biological process

Biological process	Probe set ID	Gene symbol	Gene title	Molecular function term	Cellular component term
Protein modification/ ubiquitination					
Protein amino acid glycosylation metabolic process	Dr10492.2.A1_at	st8sia1	ST8 alpha-N-acetylneuraminide alpha-2,8-sialyltransferase 1	Alpha-N-acetylneuraminase alpha-2,8-sialyltransferase activity alpha-N-acetylneuraminase alpha-2,8-sialyltransferase activity sialyltransferase activity transferase activity transferase activity, transferring glycosyl groups	Integral to Golgi membrane
Protein complex assembly intracellular protein transport ER to Golgi vesicle-mediated transport vesicle-mediated transport notochord development	Dr14687.1.A1_at	LOC799705	Similar to coatomer protein complex subunit beta 2	Protein binding protein transporter activity	Nucleus endoplasmic reticulum Golgi-associated vesicle
	Dr8505.1.S1_at	ahsg	alpha-2-HS-glycoprotein	Cysteine protease inhibitor activity	
Protein complex assembly transport intracellular protein transport vesicle-mediated transport	Dr682.1.S1_a_at	ap2m1	adaptor-related protein complex 2, mu 1 subunit	Protein binding	Clathrin vesicle coat
Transcription/ translation					
Transcription transcription termination regulation of transcription, DNA-dependent transcription anti-termination	Dr1403.1.S1_at	mef2d	myocyte enhancer factor 2d	DNA binding transcription factor activity sequence-specific DNA binding	Nucleus
Regulation of transcription, DNA-dependent	Dr16418.1.A1_at	LOC793651	Hypothetical protein LOC793651	Transcription factor activity zinc ion binding sequence-specific DNA binding	Intracellular nucleus
Transcription transcription termination regulation of transcription, DNA-dependent transcription antitermination	Dr224.1.S1_at	tbx6	T-box gene 6	DNA binding transcription factor activity	Nucleus
Transcription RNA elongation regulation of transcription, DNA-dependent regulation of transcription	Dr25167.1.S1_at	elavl3	ELAV (embryonic lethal, abnormal vision, Drosophila)-like 3 (Hu antigen C	Nucleotide binding nucleic acid binding DNA binding RNA polymerase II transcription factor activity RNA binding DNA-directed RNA polymerase activity zinc ion binding transferase activity nucleotidyltransferase activity transcription regulator activity metal ion binding	Ribonucleoprotein complex
rRNA processing proteolysis secretory pathway	Dr25683.1.S1_at	ctsl1b LOC100001493 LOC100001565 LOC100001785 LOC563390	cathepsin L, 1 b similar to cathepsin L	Cysteine-type endopeptidase activity endopeptidase inhibitor activity peptidase activity cysteine-type peptidase activity hydrolase activity	Extracellular region

		LOC564835 LOC564906 LOC564979 LOC567623 LOC569326 LOC798200				
DNA replication DNA repair	Dr6031.1.A1_at	poll	polymerase (DNA directed), lambda	DNA binding DNA-directed DNA polymerase activity beta DNA polymerase activity sequence-specific DNA binding	Intracellular	
Regulation of transcription, DNA-dependent	DrAffx.1.14.S1_at	cbfb	core-binding factor, beta subunit	DNA binding transcription coactivator activity transcription regulator activity protein heterodimerization activity	Nucleus core-binding factor complex	
Neurotransmission/ synaptic plasticity						
Protein amino acid phosphorylation cell adhesion multicellular organismal development nervous system development cell differentiation	Dr12598.1.S1_at	ncam2	neural cell adhesion molecule 2	Vascular endothelial growth factor receptor activity protein binding ATP binding	Membrane attack complex membrane	
Calcium ion transport homophilic cell adhesion	Dr21026.1.S1_at	pcdh10a	protocadherin 10a	Calcium channel activity calcium ion binding calcium channel inhibitor activity	Membrane	
Zinc ion transport Notch signaling pathway	Dr16536.1.A1_s_at	rnf146	ring finger protein 146	Protein binding zinc ion binding metal ion binding		
	Dr25300.1.A1_at	LOC556178	similar to neurocalcin			
	Dr4748.1.S1_at	LOC553977	granulin 1			
Transport cell cycle mitosis multicellular organismal development nervous system development cell differentiation cell division	Dr6616.1.S1_at	pafah1b1	platelet-activating factor acetylhydrolase, isoform lb, alpha subunit b		Cytoskeleton microtubule	
Synaptic plasticity/ structural						
	Dr12425.1.S1_at	zgc:92533	zgc:92533	Structural molecule activity	Intermediate filament	
	Dr12425.1.S1_x_at	zgc:92533	zgc:92533	Structural molecule activity	Intermediate filament	
	Dr12425.1.S1_at	zgc:92533	zgc:92533	Structural molecule activity	Intermediate filament	
	Dr12425.1.S1_x_at	zgc:92533	zgc:92533	Structural molecule activity	Intermediate filament	
	Dr1434.1.S1_at	krt5	keratin 5	Structural molecule activity	Intermediate filament	
Cell adhesion	Dr15229.1.A1_at	si:rp71-1h10.1	Si:rp71-1h10.1	Structural molecule activity	Actin cytoskeleton	
Cell adhesion central nervous system development positive regulation of axon extension	Dr8147.1.S1_at	cntn2	contactin 2	Protein binding	Membrane attack complex membrane	
Calcium-independent cell-cell adhesion	Dr8153.1.S5_a_at	cldng	claudin g	Structural molecule activity protein binding	Membrane attack complex	

identical protein binding
tight junction
tight junction
membrane
integral to
membrane

Dr20279.1.A1_at ncanl neurocan, like

Signal transduction

Dr22745.1.A1_at LOC100002604 Similar to phosphodiesterase 5A

Protein amino acid phosphorylation Dr7083.1.S1_at ptk2.1 protein tyrosine kinase 2.1 Protein kinase activity protein-tyrosine kinase activity ATP binding kinase activity Cytoskeleton

Signal transduction axon guidance DrAffx.1.4.S1_at tnr tenascin R (restrictin, janusin) Receptor binding

Cell cycle/ apoptosis

Regulation of progression through cell cycle transcription transcription termination regulation of transcription, DNA-dependent transcription antitermination Dr18139.1.S1_at tfdp1 transcription factor Dp-1, like DNA binding transcription factor activity Nucleus transcription factor complex

Steroid metabolism/transport

Dr20778.1.S1_at zgc:103456 zgc:103456. similar to peripheral benzodiazepine receptor Integral to membrane

Ion/protein transport

Transport Dr14053.1.A1_at synpr synaptoporin Transporter activity porin activity Synaptic vesicle membrane integral to membrane outer membrane

Anion transport Dr17310.1.S1_at zgc:56235 zgc:56235 Voltage-gated ion-selective channel activity Mitochondrial outer membrane

Calcium ion transport Dr19079.1.S1_at zgc:92169 zgc:92169 CalcineurinB Calcium channel activity calcium ion binding calcium channel inhibitor activity

Dr19445.1.S1_at LOC100004680 Similar to potassium channel TSK3

Dr3199.1.A1_at LOC556181 Similar to solute carrier family 1 (glial high affinity glutamate transporter), member 3

Metabolism

Electron transport	Dr12134.3.S1_x_at	zgc:77225	zgc:77225	NADH dehydrogenase activity NADH dehydrogenase (ubiquinone) activity	Mitochondrion
Nucleobase, nucleoside, nucleotide and nucleic acid metabolic process	Dr3216.1.A1_at	LOC791647 np	nucleoside phosphorylase hypothetical protein LOC791647	Purine-nucleoside phosphorylase activity transferase activity, transferring pentosyl groups	
Biosynthetic process	Dr17697.1.A1_at	LOC792234	hypothetical protein LOC792234	Catalytic activity uridine kinase activity ATP binding nucleotidyltransferase activity	
Protein complex assembly transport intracellular protein transport vesicle-mediated transport	Dr682.1.S1_a_at	ap2m1	adaptor-related protein complex 2, mu 1 subunit	Protein binding	Clathrin vesicle coat
Protein catabolic process	Dr6105.1.A1_at	LOC553461	hypothetical protein LOC553461	Protein binding	
Response to hypoxia heme biosynthetic process transport iron ion transport iron ion homeostasis response to stress oxygen transport	Dr636.1.S1_at	mb	myoglobin	Oxygen transporter activity binding iron ion binding oxygen binding heme binding metal ion binding	

Other

	Dr10524.1.S1_at	zgc:85694	zgc:85694	Nucleotide binding nucleic acid binding	
	Dr11083.1.S1_at	itm2b	integral membrane protein 2B		
	Dr11120.1.A1_at	wu:fc18e04	wu:fc18e04		
	Dr11372.1.A1_at	LOC565404	Similar to RNA binding motif protein 10 like (57.9 kD) (4N366)	Nucleic acid binding zinc ion binding	Intracellular
	Dr11640.1.S1_at		Transcribed locus		
	Dr11818.1.A1_at	LOC557995	Similar to ring-IBR- ring domain containing protein Dorfin		
Electron transport	Dr12134.3.S1_x_at	zgc:77225	zgc:77225	NADH dehydrogenase activity NADH dehydrogenase (ubiquinone) activity	Mitochondrion
	Dr12215.1.A1_at		Transcribed locus		
	Dr12703.1.A1_at	LOC798401	Hypothetical protein LOC798401		
	Dr12816.1.A1_at		Transcribed locus		
	Dr12849.2.A1_a				
	Dr12857.1.A1_at	skia	nuclear oncoprotein skia	DNA binding	Nucleus
	Dr13121.1.A1_x_at	LOC792809	Hypothetical protein LOC792809		
	Dr13121.2.A1_at	LOC795574	Hypothetical protein LOC795574		
	Dr13121.2.A1_x_at	LOC795574	Hypothetical protein LOC795574		
	Dr13557.2.S1_at	zgc:73265	zgc:73265		

	Dr13756.1.S1_at		Transcribed locus		
	Dr13817.1.A1_at	coro2b	coronin, actin binding protein, 2B		
	Dr13833.1.S1_at	LOC572069	Hypothetical LOC572069		
	Dr14343.1.A1_at		Transcribed locus		
	Dr14555.1.S1_at	ivns1abp	influenza virus NS1A binding protein a	Protein binding	Nucleus
Protein complex assembly intracellular protein transport ER to Golgi vesicle-mediated transport vesicle-mediated transport notochord development	Dr14687.1.A1_at	LOC799705	Similar to coatomer protein complex subunit beta 2	Protein binding protein transporter activity	Nucleus endoplasmic reticulum Golgi-associated vesicle
	Dr14868.1.S1_at	zgc:103699	zgc:103699	Protein binding	
	Dr14930.1.A1_at		Transcribed locus		
	Dr15174.1.A1_at	LOC563993	Similar to MGC80777 protein		
	Dr12482.2.A1_x_at		Transcribed locus		
	Dr11818.1.A1_at	LOC557995	Similar to ring-IBR-ring domain containing protein Dorfin		
	Dr12857.1.A1_at	skia	nuclear oncoprotein skia	DNA binding	Nucleus
	Dr15366.1.S1_at	LOC795907	Similar to leucine-rich alpha-2-glycoprotein		
	Dr11372.1.A1_at	LOC565404	Similar to RNA binding motif protein 10 like (57.9 kD) (4N366)	Nucleic acid binding zinc ion binding	Intracellular
	Dr15366.1.S1_at	LOC795907	Similar to leucine-rich alpha-2-glycoprotein		
	Dr16049.1.S1_at		Transcribed locus		
	Dr16158.1.A1_at		Transcribed locus		
	Dr16231.1.A1_at		Transcribed locus		
	Dr16344.1.A1_at		Transcribed locus		
	Dr16385.1.A1_at	si:ch211-284a13.1	si:ch211-284a13.1		
	Dr16470.1.A1_at		Transcribed locus		
	Dr17764.1.A1_at		Transcribed locus		
	Dr1782.1.A1_at	wu:fc52a02	wu:fc52a02		
	Dr18215.1.A1_at	LOC796766	Similar to novel lectin C-type domain containing protein		
	Dr18513.2.S1_a_at	sccpdhb	saccharopine dehydrogenase b		
	Dr18540.2.S1_a_at		Transcribed locus, weakly similar to XP_001344635.1 hypothetical protein [Danio rerio]		
	Dr18540.3.A1_at	LOC799545	Hypothetical protein LOC799545		

	Dr18540.3.A1_x_at	LOC799545	Hypothetical protein LOC799545	
	Dr18603.1.A1_at	LOC794701	Hypothetical protein LOC794701	
	Dr18643.1.A1_at		Transcribed locus	
	Dr18793.1.A1_at	LOC1000056 20	Hypothetical protein LOC100005620	
	Dr19364.1.S1_at	wu:fb96d05	wu:fb96d05	
	Dr19468.1.A1_at	zgc:66100	zgc:66100	
	Dr19567.1.S1_at	LOC791936 zgc:73377	zgc:73377 Hypothetical protein LOC791936	
	Dr19928.1.A1_at	LOC555906	Hypothetical LOC555906	
	Dr20778.1.S1_at	zgc:103456	zgc:103456	Integral to membrane
	Dr22059.2.A1_at	LOC559629	Hypothetical LOC559629	
	Dr22276.1.S1_at			
	Dr22471.1.A1_at	wu:fe38h02	wu:fe38h02	
Immune response antigen processing and presentation	Dr23469.1.S1_s_at	a2 zgc:113912 zgc:92049	MHC class II integral membrane protein alpha chain 2 zgc:92049 zgc:113912	Membrane
Immune response antigen processing and presentation	Dr23469.1.S1_x_at	zgc:92049	zgc:92049	Membrane
	Dr23514.1.A1_at	wu:fa94e11	wu:fa94e11	
	Dr24135.1.A1_at	zgc:110084	zgc:110084	Nucleotide binding nucleic acid binding
	Dr24664.1.S1_at		Transcribed locus	
	Dr25559.1.S1_at	sb:cb166	sb:cb166	
	Dr25630.1.S1_at			
Nucleobase, nucleoside, nucleotide and nucleic acid metabolic process	Dr3216.1.A1_at	LOC791647 np	nucleoside phosphorylase hypothetical protein LOC791647	Purine-nucleoside phosphorylase activity transferase activity, transferring pentosyl groups
	Dr3664.2.A1_at	LOC792181	Hypothetical protein LOC792181	
	Dr4033.1.A1_at	wu:fb72g11	wu:fb72g11	
	Dr4213.1.S1_at	zgc:111986	zgc:111986	
	Dr4310.1.S1_at		Transcribed locus, weakly similar to NP_001032317.1 protein LOC568735 [Danio rerio]	
	Dr4543.1.S1_at	LOC572703	Similar to fibulin-4	
	Dr4615.1.S1_a_at	wu:fc70h04	wu:fc70h04	
	Dr4878.1.S1_at	LOC558130	Hypothetical LOC558130	
	Dr4996.1.A1_at	wu:fb92f01	wu:fb92f01	
	Dr52.1.A1_at			
	Dr5663.1.S1_at		Transcribed locus, strongly similar to XP_706968.1	

				hypothetical protein XP_701876 isoform 2 [Danio rerio]		
	Dr5685.1.S1_at					
	Dr5687.1.A1_at			Transcribed locus		
DNA metabolic process DNA topological change	Dr5696.1.S1_at	prc1	Protein regulator of cytokinesis 1	DNA binding DNA topoisomerase (ATP- hydrolyzing) activity ATP binding		Chromosome
DNA replication DNA repair	Dr6031.1.A1_at	poll	Polymerase (DNA directed), lambda	DNA binding DNA-directed DNA polymerase activity beta DNA polymerase activity sequence-specific DNA binding		Intracellular
	Dr6287.1.A1_at	wu:fd57b02	wu:fd57b02			
	Dr6844.1.A1_at	LOC559772	Hypothetical LOC559772			
	Dr75.1.A1_at	LOC1000051 44	Similar to fucokinase			
	Dr796.1.S1_at	sb:cb492	sb:cb492			
	Dr796.1.S1_x_at	sb:cb492	sb:cb492			
	Dr839.2.S1_a_at					
	Dr9263.1.A1_at	wu:fk68g08	wu:fk68g08			
	Dr9343.2.S1_at	LOC798138 zgc:153878	zgc:153878 hypothetical protein LOC798138	Binding		
	Dr9699.2.A1_at	LOC561612	Hypothetical LOC561612			

Gene names and roles are as assigned on the Affymetrix web site (<http://www.affymetrix.com/analysis/index.affx>).