

Striatal H3K27 Acetylation Linked to Glutamatergic Gene Dysregulation in Human Heroin Abusers Holds Promise as Therapeutic Target

Supplement 1

Supplemental Methods

Rodent heroin self-administration. Adult male Long-Evans rats were maintained on reversed 12 hr dark/light cycle and underwent jugular vein catheterization. They were subsequently food-restricted and trained to self-administer heroin via the jugular catheter. Animals were placed in an operant chamber (29.5cm x 32.5cm x 23.5cm) housed in sound-attenuating boxes (MED Associates Inc., St. Albans, VT) with two levers; depression of one (designated the active lever) resulted in the delivery of 30 μ g/kg heroin under a fixed-ratio 1 (FR1) schedule of reinforcement, whereas depression of the other (designated the inactive lever) had no programmed consequences. Each self-administration session was 3hrs. Following 7 FR1 sessions, animals underwent 4 additional FR5 sessions and were fed ad libitum for the remainder of the study. For the JQ1 experiments, only rats that differentiated between active and inactive levers and showed an escalation of correct responses under FR5 schedule were selected for study. Two guide cannulae (C317G-SPC, cut 4 mm below pedestal), one into each hemisphere, were inserted into the rostral part of the dorsal striatum (at a 10° angle from midline relative to bregma: AP+1.7mm, ML+3.5mm; DV-2.0mm; **Supplemental Figure S2**). After establishing a post-surgery baseline (average of two days), 2 μ l of 20 μ mol/l JQ1 was injected in awake animals 5 minutes before heroin self-administration testing on two consecutive days. To test for potential protracted effects of JQ1, animals underwent 3 additional heroin self-administration sessions 24 hours, 48 hours, and 96 hours after the last JQ1 delivery. To test JQ1's effect on drug-seeking behavior, the last heroin self-administration was followed by a 96 hours abstinent

period, then animals were injected with JQ1 and underwent a non-reinforced cue-induced drug-seeking reinstatement session. The reinstatement session was 1hr long. All testing was carried out using a counter-balanced experimental design and conducted at a similar time of the day.

Microarray. Messenger RNA (mRNA) microarray was previously conducted (1) on total RNA isolated from the NAc of a subset of heroin ($n = 22$; 19 male and 3 female subjects) and control ($n = 27$; 22 male and 5 female subjects) subjects (**Supplemental Tables S1 and S2** for demographic information). Expression data were collected using HG-U133A Affymetrix Chips (Affymetrix, Santa Clara, California) at the Purdue Pharma, L.P. (Cranbury, New Jersey). Raw data were normalized using the Robust Multichip Average from the Affymetrix Expression Console. To control for RNA quality, actin 3'/5' ratios of less than 3 and percent present calls of 50% or greater were used. To identify differentially expressed genes (DEGs), two-tailed t tests were performed with a multiple testing correction ($p < .05$). Hierarchical clustering was performed on log2 expression levels of DEGs with Euclidian distance and average linkage for constructing dendograms. For the weighted gene coexpression network analysis, Supplemental Figure S7 shows module correlations, Supplemental Table S6 shows significance levels, and Supplemental Table S7 shows module memberships.

NanoString. 20 μ m-thick ventral striatal sections were taken from 20 human heroin abusers and 16 matching controls, and submitted for NanoString analysis (NanoString, Seattle, WA, USA) in Ambion lysis buffer (Ambion, Austin, TX, USA). A custom codeset was designed for genes related to glutamatergic neurotransmission (*AKAP6*, *DLG1*, *DLG4*, *DLGAP2*, *DNM3*, *ERBB4*, *GLS*, *GRIA1*, *GRIA2*, *GRM3*, *GRM5*, *HOMER1*, *HOMER3*, *NRXN3*, *PICK1*), as well as a panel of chromatin remodeling enzymes (*AURKB*, *CHD9*, *HDAC5*, *JMJD1C*, *KAT5*, *KAT6B*, *NCOA1*, *NCOA3*, *SATB1*, *SETD2*, *SMYD2*, *SETD4*, *SETDB1*, *SUV39H1*, *SUV420H1*, *UBE2B*). Raw

counts for each gene were subjected to a technical normalization based on the counts for positive control probesets, followed by biological normalization using *GAPDH* as housekeeping gene. All normalization steps were carried out with the nSolver software (NanoString).

Real-time quantitative polymerase chain reaction (qPCR). mRNA was extracted from approximately 10 mg of pulverized putamen tissue using the RNAqueous Micro Kit (Ambion) and following the manufacturer's protocol. First-strand cDNA was synthesized using qScript cDNA SuperMix (Quanta Biosciences, Gaithersburg, MD, USA) and subjected to qPCR analysis using Taqman-based probes. Primers and probes against *GRIA1* (Hs00181348_m1), *GRM5* (Hs00168275_m1), *HOMER1* (Hs00188676_m1), *DLG1* (Hs00938204_m1), *DLG4* (Hs00176354_m1), *NCOA1* (Hs00186661_m1), *HDAC5* (Hs00608366_m1), *SUV39H1* (Hs00957892_m1) and *JMJD1C* (Hs00405469_m1) were obtained from Applied Biosystems (Life Technologies, Carlsbad, CA, USA). Eukaryotic 18S rRNA (Applied Biosystems, product # 4319413E) was included in each multiplex PCR as an internal control. Real-time PCR and subsequent analysis were performed with a Roche LightCycler 480 Real-Time PCR system (LightCycler 480 software; Roche, Basel, Switzerland). Quantification of target gene expression in all samples, performed in triplicate, was normalized to 18S rRNA by the equation $C_{T(\text{target})} - C_{T(18S)} = \Delta C_T$, where C_T is the threshold cycle number. Differences between control and heroin subjects, including individual variation, were calculated by the equation $\Delta C_{T(\text{individual subject})} - \Delta C_{T(\text{mean control})} = \Delta \Delta C_T$. Changes in target gene expression (*n*-fold) in each sample were calculated by $2^{-(\Delta \Delta C_T)}$ from which the means and standard errors of the mean (SEM) were derived.

Western blot. Approximately 15 mg of pulverized dorsal striatum (putamen) punches per subject were used to generate histone extracts using 100μl 0.2N HCl containing protease (cOmplete Mini, EDTA-free protease inhibitor cocktail, Roche) and phosphatase inhibitors (Halt phosphatase inhibitor cocktail, Thermo Scientific, Rockford, IL, USA) and 5mmol/L Na-butyrate.

The protein was diluted in Laemmli buffer, denatured (for 5 min at 95°C), subjected to electrophoresis, and transferred onto nitrocellulose membranes. The membranes were blocked in Odyssey blocking buffer (LI-COR, Lincoln, NE, USA) and incubated at 4°C overnight with primary antibodies. Rabbit polyclonal antibodies were used against acetyl-histone H3 (pan-AcH3, 1:5000, Millipore, Billerica, MA, USA), acetyl K9-histone H3 (H3K9ac, 1:500 Abcam, Cambridge, MA, USA), acetyl K14-histone H3 (H3K14ac, 1:2000, Active Motif, Carlsbad, CA, USA), acetyl K18-histone H3 (H3K18Ac, 1:6000, Abcam), acetyl K23-histone H3 (H3K23ac, 1:5000, Active Motif), acetyl K27-histone H3 (H3K27ac, 1:1000, Millipore), acetyl K36-histone H3 (H3K36ac, 1:5000, Millipore), acetyl K56-histone H3 (H3K56ac, 1:400, Millipore) trimethyl K9-histone H3 (H3K9me3, 1:1000, Abcam), trimethyl K4-histone H3 (H3K4me3, 1:2000, Millipore), trimethyl K27-histone H3 (H3K17me3, 1:3000, Millipore), and histone H4 (H4, 1:10000, Millipore). Mouse monoclonal antibodies were used against dimethyl K9-histone H3 (H3K9me2, 1:1000, Abcam), and histone H4 (H4, 1:10000, Abcam). Membranes were subsequently incubated with goat anti-rabbit or goat anti-mouse IRDye 680 or IRDye 800 secondary antibodies (LI-COR) at room temperature for 1h. Membranes were developed with the LI-COR infrared imaging system (LI-COR) and images quantified using average integrated density values. Total histone H4 levels were used to control for total protein content.

Chromatin immunoprecipitation (ChIP). ChIP was carried out as previously described (1). Briefly, 15 mg pulverized putamen tissue (human or rat) was fixed with 1% formaldehyde. Samples were sonicated with Bioruptor (Diagenode, Liege, Belgium) in buffer containing 50 mmol/L Hepes pH 7.9, 140 mmol/L NaCl, 1 mmol/L EDTA, 1% Triton X-100, 0.1% Na-deoxycholate, and 0.1% SDS. 25 µg chromatin (measured as DNA at an optical density of 260 nm with NanoDrop ND-1000 Spectrophotometer from Thermo Scientific) was immunoprecipitated with 4 µl anti-acetyl histone H3 antibody (Millipore) or 4 µg anti-acetyl

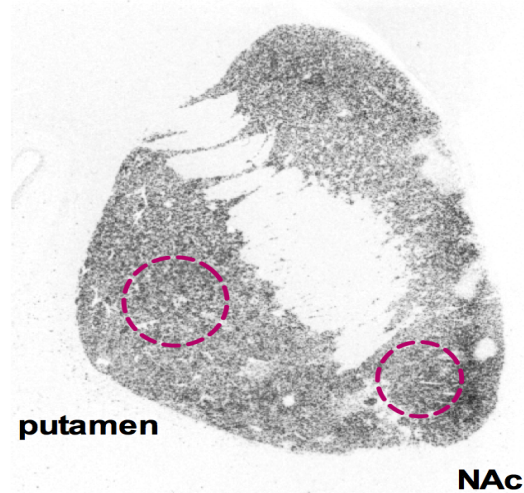
lysine-27 histone H3 antibody (Millipore) and nonspecific rabbit IgG (Santa Cruz Biotechnology, Santa Cruz, CA, USA). Immunocomplexes were collected with protein G Dynabeads (Invitrogen, Carlsbad, CA, USA), beads washed, bound fraction eluted, extracted with phenol-chloroform, ethanol-precipitated, and resuspended in Tris-EDTA buffer. ChIP material was analyzed by real-time PCR using SYBR green master mix (Roche) in a LightCycler 480 instrument (Roche) and the default SYBR green PCR program. PCR reactions were carried out in triplicates. Crossing point values from each PCR were obtained with the second derivative maximum method (Roche). The enrichment of a given target sequence precipitated by the antibody was determined as the difference between the amount of target sequence in the immunoprecipitated fraction and the amount of target sequence in the input DNA. Relative quantification and analysis of heroin effects were performed with a modified version of the $\Delta\Delta C_t$ method. The background immunoprecipitation of chromatin with nonspecific rabbit IgG was determined for both groups.

Fluorescence assisted cell sorting (FACS) of neuronal and non-neuronal nuclei. 50mg of frozen postmortem brain tissue was homogenized in cold lysis buffer (0.32M Sucrose, 5 mM CaCl_2 , 3 mM $\text{Mg}(\text{Ac})_2$, 0.1 mM, EDTA, 10mM Tris-HCl, pH8, 1 mM DTT, 0.1% Triton X-100) and filtered through a 40 μm cell strainer. The flow-through was underlaid with sucrose solution (1.8 M Sucrose, 3 mM $\text{Mg}(\text{Ac})_2$, 1 mM DTT, 10 mM Tris-HCl, pH8) and subjected to ultracentrifugation at 24,000 rpm for 1 hour at 4°C. Pellets were thoroughly resuspended in 500 μl DPBS and incubated in BSA (final concentration 0.1%) and anti-NeuN antibody (1:1000, Alexa488 conjugated, Millipore) under rotation for 1 hour, at 4°C, in the dark. Prior to FACS sorting, DAPI (Thermoscientific) was added to a final concentration of 1 $\mu\text{g}/\text{ml}$. DAPI positive neuronal (NeuN+) and non-neuronal (NeuN-) nuclei were sorted using a FACS Aria flow cytometer (BD Biosciences).

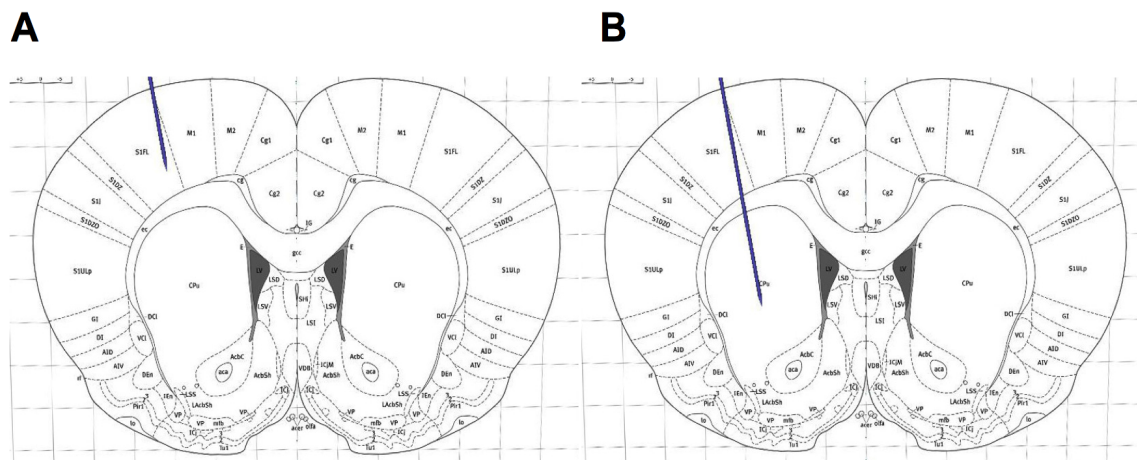
Generation of ATAC-seq libraries. ATAC-seq (assay for transposase accessible chromatin) reactions were performed using an established protocol (2) (Illumina Cat #FC-121-1030) and the resulting libraries amplified using the Nextera index kit (Illumina Cat #FC-121-1011). Optimal library amplification was determined by visualization with Bioanalyzer High Sensitivity DNA Chips (Agilent technologies Cat#5067-4626). Libraries were amplified for a total of 12–17 cycles and were quantified by Qubit HS DNA kit (Life technologies) and by quantitative PCR (KAPA Biosystems Cat#KK4873) prior to sequencing. Finally, ATACseq libraries were sequenced on Hi-Seq2500 (Illumina) obtaining 2x50 paired-end reads.

Statistical analysis. Statistical evaluation was carried out using JMP (SAS Institute, Cary, NC, USA). Data were tested for normality and normalized by natural log transformation, if not normally distributed. Univariate statistical analyses were used to study the effect of each independent demographic variable (e.g. age, gender, postmortem interval, brain pH, RIN, years of heroin use, former overdose) and toxicology data (e.g. blood and urine alcohol, morphine, 6-mono-acetyl-morphine, codeine levels) on mRNA expression or protein levels. Variables with a p value of less than 0.1 were included in the final multiple regression model. If there were no such variables, group differences were determined by one-way analysis of variance. Correlational analyses were carried out according to Pearson.

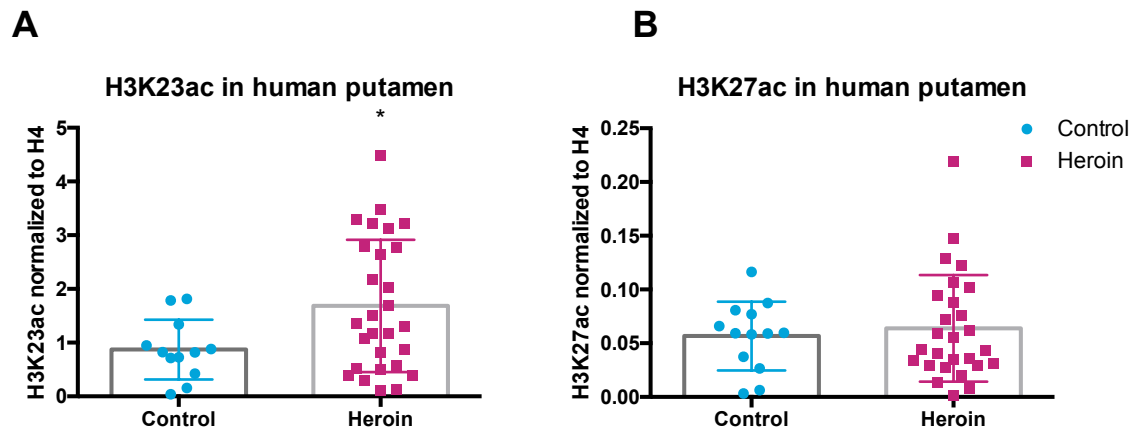
Supplemental Figures



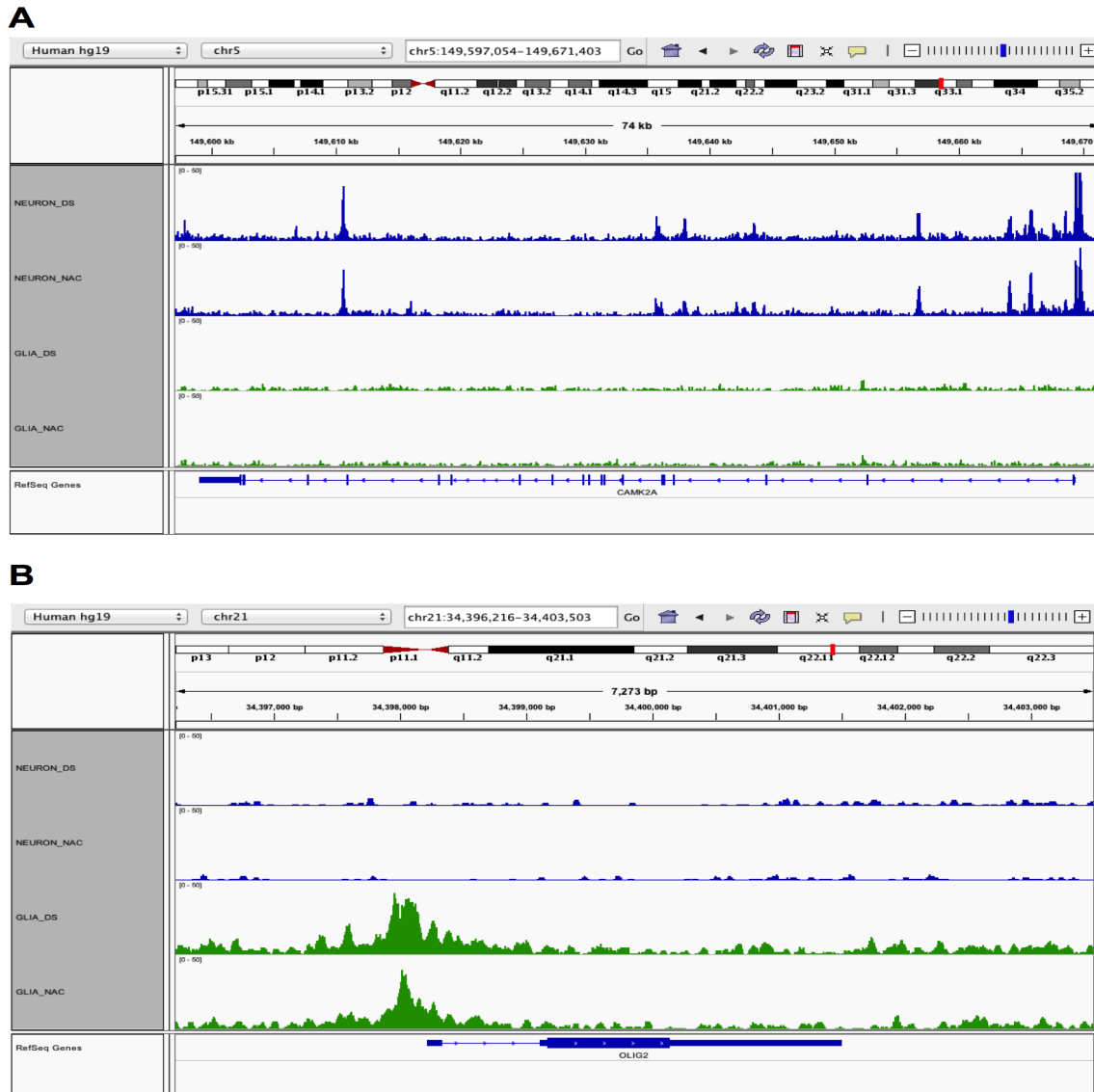
Supplemental Figure S1. Human striatum tissue was obtained from the ventral and dorsal striatum (putamen) at the level of the nucleus accumbens (NAc).



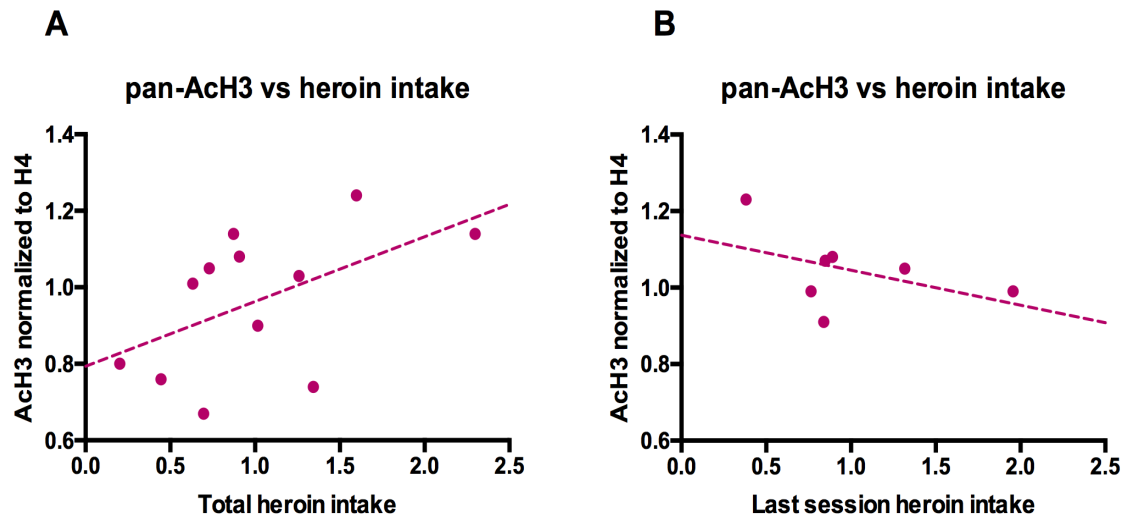
Supplemental Figure S2. Stereotaxic surgeries. (A) Guide cannulae were implanted at a 10° angle at AP+1.7mm, ML+3.5mm and DV+2mm from bregma. (B) For JQ1 injections, 28 gauge needles were lowered through the guide cannulae to AP+17mm, ML+3.5mm and DV+5.2mm from bregma. 2 μ l of 20 mM JQ1 was injected over 1 minute in both hemispheres.



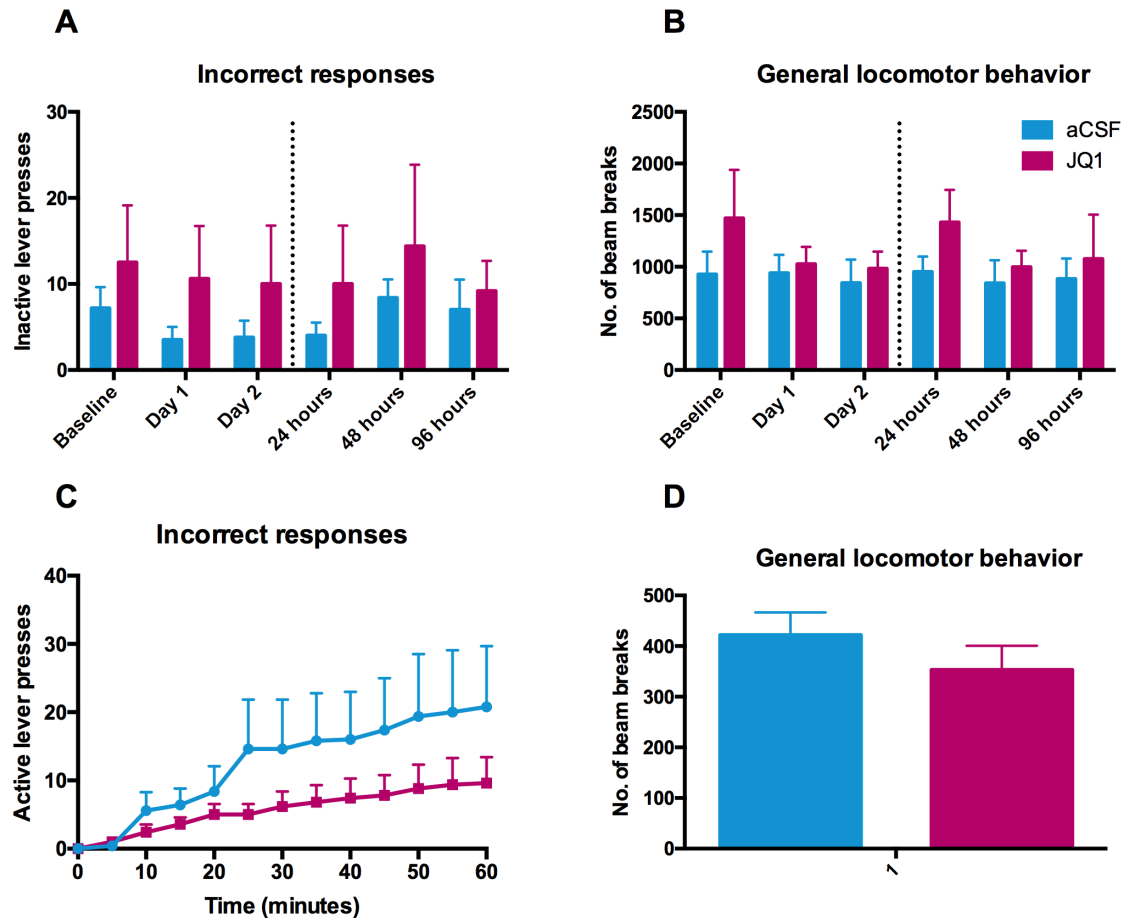
Supplemental Figure S3. Heroin-related acetylation impairments of specific histone H3 lysine residues in the post-mortem human brain. Western blot experiments showing (A) H3K23 acetylation, $n=12$ (controls) and $n=28$ (heroin users) and (B) H3K27 acetylation, $n=13$ (controls) and $n=27$ (heroin users) in the dorsal striatum. Data is represented as mean $\pm$ s.e.m. Independent Student's t -tests, $*P < 0.05$.



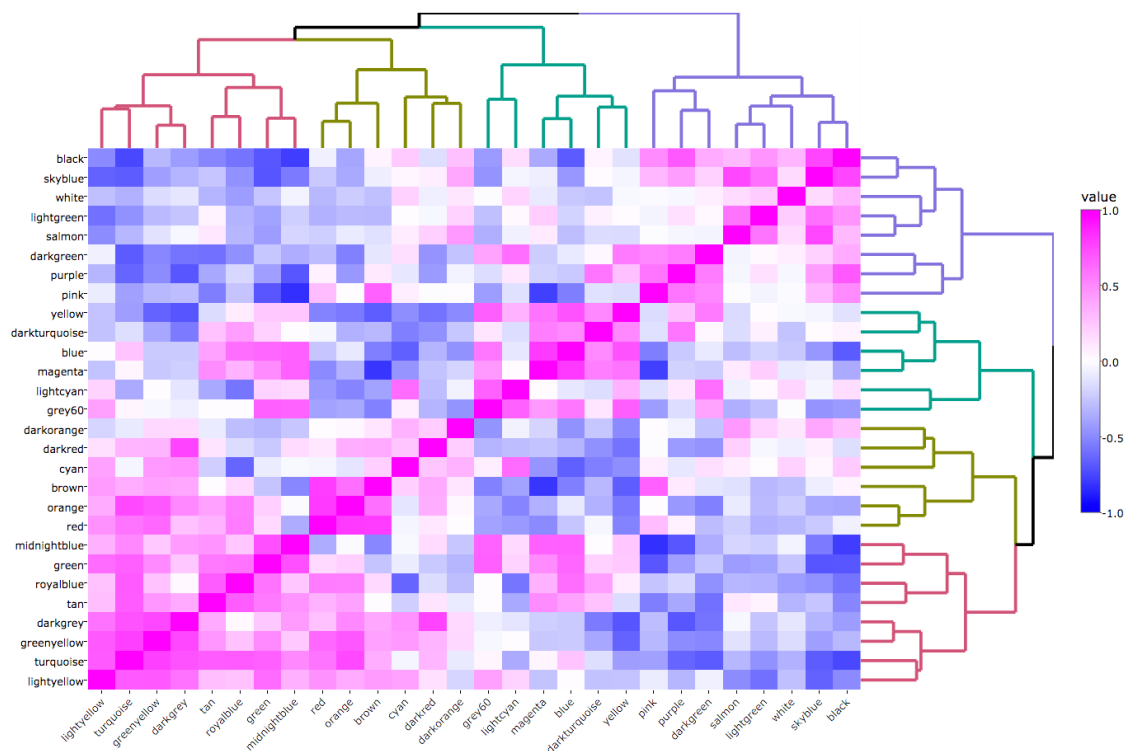
Supplemental Figure S4. Assay for transposase accessible chromatin (ATAC) coupled to fluorescence assisted cell sorting (FACS) reliably identifies open chromatin regions in a cell type-specific manner. (A) CAMK2A accessibility in neuronal (blue) and glial (green) tracks from human dorsal striatum (top panel) and nucleus accumbens (bottom panel) tissue. (B) OLIG2 accessibility in neuronal (blue) and glial (green) tracks from human dorsal striatum (top panel) and nucleus accumbens (bottom panel) tissue.



Supplemental Figure S5. Rat heroin-self administration is associated with changes in histone H3 acetylation similar to that in human heroin users (A,B) Pearson correlations between pan-AcH3 and (A) total heroin intake at 24 hours after the last self-administration session, $r=0.52$, $p=0.0847$, $n=12$, and (B) last session heroin intake 1 hour after the last self-administration session, $r=-0.46$, $p=0.3013$, $n=7$.



Supplemental Figure S6. JQ1 treatment does not affect inactive lever pressing and general locomotor behavior. (A) Inactive lever presses and (B) beam breaks during 3 hours long heroin self-administration session in JQ1 (n=6) and aCSF (n=5) treated Long-Evans rats. Dashed line represents day of last JQ1 delivery. Bar graphs represent mean $\pm$ s.e.m. (c) Inactive lever presses and (d) beam breaks during a 1 hour non-reinforced cue-induced drug-seeking session in JQ1 (n=6) and aCSF (n=5) treated Long-Evans rats. Data is represented as mean $\pm$ s.e.m.



Supplemental Figure S7. WGCNA analysis. Heatmap plot showing Pearson's correlation of module eigengenes.

Supplemental Tables

Supplemental Table S1. Demographic information (group, gender, age), cause of death (determined by forensic pathologist) brain pH, blood ethanol levels at autopsy for the post-mortem human population. For each subject, the molecular assays performed are indicated separately.

ID	Group	Gender	Age	Cause of death	pH	Blood EtOH	WB, PCR, ChIP	Micro-array	Nanostring	ATAC-seq	RNA-seq
245	Control	f	15	sudden, natural (AMI)		0		x			
257	Control	m	46	sudden, natural (AMI)	6.84	0		x			
263	Control	m	39	sudden, natural (AMI)		4		x			
275	Control	m	46	sudden, natural (AMI)		0		x			
285	Control	m	44	sudden, natural (AMI)	6.92	0		x	x		
288	Control	m	49	sudden, natural (AMI)	6.59	0		x	x		
307	Control	m	43	sudden, natural (pulmonary embolism)	6.68	0	x	x	x		
317	Control	m	50	sudden, natural (AMI)	6.54	0	x		x		
332	Control	m	48	sudden, natural (AMI)	6.79	0	x	x	x		
338	Control	m	58	sudden, natural (pneumonia)	6.15	0		x	x		
342	Control	m	29	sudden, natural (AMI)	6.92	0	x		x		x
344	Control	m	25	food asphyxiation	6.76	0	x	x			x
351	Control	f	19	sudden, natural (AHF)	6.76	0		x			
352	Control	m	44	sudden, natural (AMI)	6.87	1.19		x	x		
365	Control	m	20	sudden, natural (AHF)	6.59	2.14		x			
372	Control	m	22	sudden, natural (AMI)	6.79	0	x		x		x
376	Control	m	30	sudden, natural (AMI)	6.33	0	x	x	x		

ID	Group	Gender	Age	Cause of death	pH	Blood EtOH	WB, PCR, ChIP	Micro-array	Nanostring	ATAC-seq	RNA-seq
387	Control	f	36	sudden, natural (AMI)	6.82	0	x	x	x		
395	Control	m	43	sudden, natural (pulmonary embolism)	6.40	0		x			
398	Control	m	15	sudden, natural (undetermined)	6.81	0		x	x		
405	Control	f	31	sudden, natural (AHF)	6.98	0	x	x	x		x
406	Control	m	19	electric shock	6.82	0	x	x			x
407	Control	f	27	sudden, natural (pneumonia)	6.75	1.26	x	x	x		
412	Control	m	23	electric shock	6.76	0	x	x	x		
416	Control	m	37	sudden, natural (AMI)	6.81	0	x	x	x		
427	Control	m	38	sudden, natural (pneumonia)	6.52	0		x			
430	Control	m	26	sudden, natural (pneumonia)	6.96	0		x		x	x
431	Control	m	25	electric shock	6.79	0				x	x
437	Control	m	20	sudden, natural (undetermined)	6.37	0		x			
440	Control	m	28	sudden, natural (AMI)	6.70	0		x		x	x
444	Control	m	24	sudden, natural (AHF)	6.75	0				x	x
446	Control	f	22	sudden, natural (AMI)		0				x	x
448	Control	m	31	electric shock	6.98	0				x	x
456	Control	m	20	sudden, natural (hypothermia)		0				x	x
457	Control	m	27	electric shock		0				x	
499	Control	f	27	sudden, natural (pulmonary embolism)	6.08	0				x	x
504	Control	m	22	sudden, natural (pneumonia)		0				x	x

ID	Group	Gender	Age	Cause of death	pH	Blood EtOH	WB, PCR, ChIP	Micro-array	Nanostring	ATAC-seq	RNA-seq
225	Heroin	m	39	heroin overdose	6.85	2			x		
255	Heroin	f	32	heroin overdose	6.48	0			x		
256	Heroin	m		heroin overdose				x			
302	Heroin	m	26	heroin overdose	6.48	0	x	x	x		
309	Heroin	m	25	heroin overdose	6.74	0	x		x		
310	Heroin	m	26	heroin overdose	6.57	0	x	x			
312	Heroin	m	21	heroin overdose	6.66	0		x			
316	Heroin	m	22	heroin overdose	6.75	0	x	x	x		
318	Heroin	m	28	heroin overdose	6.8	0	x	x	x		x
322	Heroin	m	25	heroin overdose	6.13	0	x				
325	Heroin	m	22	heroin overdose	6.2	0	x	x			x
328	Heroin	m	23	heroin overdose	6.56	0		x			
333	Heroin	m	23	heroin overdose	6.66	0	x	x	x		x
336	Heroin	m	25	heroin overdose	6.64	0	x				
339	Heroin	m	27	heroin overdose	6.66	0	x	x	x		
340	Heroin	m	46	heroin overdose	6.47	1.31	x				
341	Heroin	m	23	heroin overdose	6.41	0	x	x	x		x
343	Heroin	f	19	heroin overdose	6.71	0				x	x
345	Heroin	f	29	heroin overdose	6.61	0	x	x			
349	Heroin	f	24	heroin overdose	6.36	0	x				
354	Heroin	m	24	heroin overdose	6.55	0	x				
357	Heroin	m	25	heroin overdose	6.75	0	x	x			x

ID	Group	Gender	Age	Cause of death	pH	Blood EtOH	WB, PCR, ChIP	Micro-array	Nanostring	ATAC-seq	RNA-seq
361	Heroin	m	23	heroin overdose	6.69	0		x			
364	Heroin	m	25	heroin overdose	6.74	0	x		x		
366	Heroin	f	26	heroin overdose	6.75	1.12	x	x			
367	Heroin	m	31	heroin overdose	6.6	0	x	x	x		x
368	Heroin	m	20	heroin overdose	6.52	0	x		x		
370	Heroin	m	28	heroin overdose	6.85	1.39	x		x		
371	Heroin	f	21	heroin overdose	6.76	0		x		x	x
375	Heroin	m	25	heroin overdose	6.56	0	x		x		
377	Heroin	m	21	heroin overdose	6.82	0	x	x	x		
382	Heroin	m	24	heroin overdose	6.47	0.52			x		
383	Heroin	m	23	heroin overdose	6.68	0	x				
385	Heroin	f	25	heroin overdose	6.42	0	x				
388	Heroin	m	29	heroin overdose	6.79	0	x		x		
389	Heroin	m	27	heroin overdose	6.47	0	x		x		
397	Heroin	m	26	heroin overdose	6.5	0	x	x	x		
401	Heroin	m	26	heroin overdose	6.28	0	x	x	x		
408	Heroin	m	36	heroin overdose	6.38	0	x	x			
429	Heroin	m	30	heroin overdose	6.61	0.34		x			
439	Heroin	m	27	heroin overdose		0				x	x
468	Heroin	f	22	heroin overdose		0				x	x
477	Heroin	m	28	heroin overdose		2.9				x	x
481	Heroin	m	27	heroin overdose	6.22	2.54				x	x

ID	Group	Gender	Age	Cause of death	pH	Blood EtOH	WB, PCR, ChIP	Micro-array	Nanostring	ATAC-seq	RNA-seq
484	Heroin	m	28	heroin overdose	6.14	0				x	x
487	Heroin	m	26	heroin overdose		0				x	x
488	Heroin	m	26	heroin overdose	6.52	0				x	x
497	Heroin	m	27	heroin overdose	7.16	0				x	x

m: male, f: female, AMI: acute myocardial infarct, AHF: acute heart failure.

Supplemental Table S2. Summary demographic information for heroin and control groups.**A. Complete population**

	Control	Heroin
Number	n=37	n=48
Age	31.57 ± 1.86	26.19 ± 0.70
Race	Caucasian	Caucasian
Gender	m=30, f=7	m=40, f=8
PMI	< 24 hours	< 24 hours
brain pH	6.69 ± 0.04	6.58 ± 0.03
Ethanol toxicology	n=3	n=8
Blood ethanol	0.23 ± 0.13	0.13 ± 0.10

PMI: post-mortem interval, m: male, f: female

B. Microarray population

	Control	Heroin
Number	n=26	n=22
Age	33.42 ± 2.36	25.49 ± 0.84
Race	Caucasian	Caucasian
Gender	m=21, f=5	m=19, f=3
PMI	< 24 hours	< 24 hours
brain pH	6.69 ± 0.05	6.60 ± 0.04
Ethanol toxicology	n=4	n=2
Blood ethanol	0.33 ± 0.18	0.07 ± 0.05

PMI: post-mortem interval, m: male, f: female

C. Nanostring population

	Control	Heroin
Number	n=16	n=20
Age	36.63 ± 3	26.35 ± 0.96
Race	Caucasian	Caucasian
Gender	m=13, f=3	m=19, f=1
PMI	< 24 hours	< 24 hours
brain pH	6.74 ± 0.05	6.59 ± 0.04
Ethanol toxicology	n=2	n=2
Blood ethanol	0.15 ± 0.1	0.20 ± 0.04

PMI: post-mortem interval, m: male, f: female

D. ATAC-seq population

	Control	Heroin
Number	n=10	n=10
Age	25.2 ± 1.04	25.1 ± 0.12
Race	Caucasian	Caucasian
Gender	m=8, f=2	m=7, f=3
PMI	< 24 hours	< 24 hours
brain pH	6.71 ± 0.1	6.59 ± 0.36
Ethanol toxicology	n=0	n=2
Blood ethanol	0 ± 0	0.54 ± 0.36

PMI: post-mortem interval, m: male, f: female, ATAC: assay for transposase accessible chromatin

E. RNA-seq population

	Control	Heroin
Number	n=14	n=16
Age	25.07 ± 1.02	25.19 ± 0.07
Race	Caucasian	Caucasian
Gender	m=11, f=3	m=13, f=3
PMI	< 24 hours	< 24 hours
brain pH	6.78 ± 0.07	6.58 ± 0.26
Ethanol toxicology	n=0	n=2
Blood ethanol	0 ± 0	2 ± 0.23

PMI: post-mortem interval, m: male, f: female

F. Western blot/PCR/ChIP population

	Control	Heroin
Number	n=13	n=30
Age	32.3 ± 2.75	26.3 ± 0.89
Race	Caucasian	Caucasian
Gender	m=10, f=3	m=26, f=4
PMI	< 24 hours	< 24 hours
brain pH	6.75 ± 0.05	6.57 ± 0.03
Ethanol toxicology	n=1	n=3
Blood ethanol	0.097 ± 0.09	0.13 ± 0.07

PMI: post-mortem interval, m: male, f: female, ChIP: chromatin immunoprecipitation

Supplemental Table S3. Differentially expressed genes in the ventral striatum of post-mortem human heroin users vs matched controls. Gene symbol, Affymetrix HG-U133A Probeset ID, corrected p value, mean and standard deviations are shown.

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
39699	208657_s_at	0.0098204	76.97037037	40.5900406	47.60909091	37.27964987
39699	41220_at	0.00625494	1277.774074	536.9535258	812.8090909	565.548616
39701	214293_at	0.0128889	767.4814815	227.9126453	877.1681818	227.3715428
A2bp1	221217_s_at	0.00827879	2176.681481	841.7187919	2565.222727	607.8510696
AAGAB	202852_s_at	0.0133912	183.6592593	48.4191178	124.3681818	71.23290696
aak1	214956_at	0.00537049	229.8222222	60.05757067	311.4318182	98.70200648
AASDHPPT	202169_s_at	0.000718164	973.6296296	265.6558036	1409.595455	503.0061596
AATF	209165_at	0.00612689	300.9962963	84.51665508	236.2272727	70.71805981
Abcb9	214209_s_at	0.0196707	243.1481481	73.94385277	185.05	69.90739282
ABCF1	200045_at	0.0083311	592.0481481	98.97782724	487.0454545	101.0169421
Abi1	209028_s_at	0.0222653	321.0814815	70.84770251	413.0818182	142.4906835
ABI2	216113_at	0.00839789	22.22592593	20.76514448	50.09545455	30.72522583
Acaa1	214274_s_at	0.00765388	480.4666667	158.7324067	390.4545455	104.4826152
ACACA	214358_at	0.0105959	22.31851852	13.3348888	17.10454545	8.072261574
ACAN	205679_x_at	0.0100878	199.937037	53.67270577	177.9136364	36.37706362
ACAP1	205213_at	0.000410074	10.48518519	2.860702402	15.9	6.537875001
ACAP2	212476_at	0.0121774	176.3148148	56.85723487	239.6045455	67.59411412
ACBD3	202324_s_at	0.00524004	330.2592593	103.8120612	381.7136364	90.48643832
ACE2	219962_at	0.00588039	18.86666667	11.34894099	11.63181818	13.42536286
ACOT8	204212_at	0.000538501	303.5703704	56.6771207	245.8681818	40.88689843
ACSL3	201661_s_at	0.0254128	421.5518519	193.5693681	479.9363636	149.6552659
Acs14	202422_s_at	0.00700271	67.67777778	22.45861721	99.64545455	39.59804862
ACSS3	219616_at	0.0197582	103.0888889	39.43121892	92.51363636	39.2985556
Actc1	205132_at	0.0208932	106.7037037	31.65142458	143.0272727	53.7617423
ACTL8	214957_at	0.026493	18.46666667	8.108210464	15.83636364	5.901617652
ACTN2	203863_at	0.00163974	311.5185185	110.9611714	434.4454545	168.0426724
ACTR1A	200721_s_at	0.0158801	896.6259259	192.8927294	762.8136364	178.2622554
ACTR1A	200720_s_at	0.0239931	498.1444444	211.456099	369.2772727	105.520158
Actr2	200728_at	0.00681404	833.6555556	374.0571535	1277.345455	624.1760853
ACTR3B	218868_at	0.00545367	744.462963	215.6732485	864.6	195.9800087
ACY1	202740_at	0.0185989	143.5518519	40.18635791	120.7	46.70350247
ADAM10	202603_at	0.00320339	678.4037037	151.8828255	830.8454545	158.6053525
Adam21	207665_at	0.0171353	94.51111111	32.90782387	110.7909091	51.6354521
ADAM23	206046_at	0.00855038	386.9592593	80.03395077	455.5090909	97.89022963
ADAM23	213808_at	0.00936896	237.3222222	57.87511976	295.4954545	83.93784252
Adamts3	214913_at	0.000987591	154.2481481	54.71904021	230.4136364	95.4427093

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ADAP1	90265_at	0.0265107	2037.403704	779.0969247	1477.477273	470.830569
ADCK2	221894_at	0.0193359	72.8	41.19792751	46.45454545	28.7802632
ADCY1	213245_at	0.00647316	342.5555556	164.6505725	431.4181818	202.4880164
Add1	208030_s_at	0.0119818	646.5444444	136.3450384	554.6727273	76.83158565
Add1	214736_s_at	0.00660595	1136.2	351.1515123	943.9681818	230.1652582
adh7	210505_at	0.00230021	94.84444444	27.0696869	73.29545455	30.35435918
Adm2	220538_at	0.0225742	111.5444444	50.67496221	146.5090909	49.97715582
ADRB2	206170_at	0.032755	115.2740741	35.04223378	95.08181818	37.69628801
Adrb3	217303_s_at	0.0092999	8.425925926	3.877210793	6.709090909	2.000216439
Adrm1	201281_at	0.0143724	558.2962963	168.0627595	432.4909091	136.7030285
AFTPH	217939_s_at	0.0226363	586.2925926	88.94354703	666.0409091	119.7455821
AGFG1	218091_at	0.0294635	319.462963	58.46384911	370.7045455	91.91578691
AGFG2	222362_at	0.0208884	167.1925926	52.04733737	127.5045455	49.62113103
AGGF1	218534_s_at	0.00362017	246.1962963	71.53226535	306.2818182	73.16418351
agl	203566_s_at	0.0232807	292.8666667	63.17982882	377.9454545	117.3932655
Agtr1	208016_s_at	0.0288473	43.81481481	19.81277179	34.78181818	28.93828633
agxt	206957_at	0.0283739	23.38148148	17.81693311	16.57272727	25.74015173
Ahi1	221569_at	0.00942664	584.9	264.6521287	630.8272727	204.8276841
Aif1	209901_x_at	0.0294497	81.65185185	95.99057394	31.54545455	12.44445668
AIFM1	216758_at	0.00100645	6.325925926	5.06599467	14.10454545	10.01895714
AlG1	216179_x_at	0.0282664	18.7037037	15.56903933	32.84545455	26.46927648
Aim1l	220289_s_at	0.02178	7.277777778	4.187557883	5.427272727	2.284144483
aip	201782_s_at	0.0179095	1143.340741	332.1915681	1013.286364	324.3592795
AJAP1	215790_at	0.0258743	13.86666667	13.84135387	8.109090909	4.108053541
Ak2	212174_at	0.00334254	183.3555556	43.13427455	147.7318182	35.9476125
Ak2	205996_s_at	0.0206205	68.48148148	27.81008446	51.41818182	21.91072006
AKAP11	203156_at	0.00802416	1784.325926	963.579209	2603.290909	1025.678004
AKAP5	207800_at	0.00834291	71.33703704	33.64175688	108.3045455	36.06439317
AKAP6	205359_at	0.030036	223.2592593	52.67517485	271.4590909	68.04787292
AKAP7	205771_s_at	0.0116225	193.6333333	55.17256843	242.4454545	46.28622882
Akap9	210962_s_at	0.00119377	269.7666667	98.92497546	364.8318182	101.4909632
AKR1A1	201900_s_at	0.0194148	598.7888889	182.6639545	462.9318182	106.2885309
alb	214837_at	0.00925396	19.68888889	10.96586779	33.16363636	15.60203117
ALDH1L1	205208_at	0.000438783	504.8	123.203562	363.2136364	161.389034
ALDH5A1	203608_at	0.0236067	698.9185185	194.116238	885.0954545	290.6107878
ALDOA	214687_x_at	0.0308059	8182.7	2548.366237	6642.095455	2301.879684
ALG13	205583_s_at	0.0096368	287.5037037	152.0832982	332.5818182	120.1728978
ALOX5AP	204174_at	0.00181516	161.2296296	95.47325366	109.8409091	34.8525692
Amh	206516_at	0.0301558	10.75555556	6.109534373	20.5	19.35402013
AMIGO2	222108_at	0.0191198	205.137037	54.36026651	262.8727273	80.34227483

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ANGEL2	217630_at	0.0037796	36.68518519	26.33908625	49.33636364	24.91730218
ANK3	206385_s_at	0.00844574	1257.337037	481.7824319	1512.431818	420.6970728
ANKRD10	218093_s_at	0.0115983	189.5111111	66.91465479	256.7363636	55.7515624
ANKRD26	205706_s_at	0.0122539	20.91111111	13.83105017	35.13181818	20.79451362
ANKRD28	213035_at	0.0149073	524.362963	151.3778338	614.7363636	156.7045736
Ano3	215241_at	0.0101579	4011.174074	1303.537752	5168.627273	1570.26974
ANP32A	201038_s_at	0.00568007	382.4777778	81.02069694	461.3545455	117.8044131
ANP32E	221505_at	0.00416273	685.7259259	171.0308915	931.8136364	236.3921929
ANXA1	201012_at	0.00625609	73.2	20.34421105	98.05454545	34.77530223
ANXA2	210427_x_at	0.00557745	384.5407407	91.82146665	325.8090909	82.6545704
ANXA9	211712_s_at	0.0013566	48.65555556	17.5445002	36.06363636	17.7431555
Aoah	205639_at	0.0309401	179.9666667	64.41060591	141.3727273	61.84853374
AP1AR	219023_at	0.0100726	141.8925926	48.62836246	208.9090909	91.54548653
AP1B1	205423_at	0.0181803	295.4777778	64.16953707	229.7590909	68.21797458
AP3M2	203410_at	0.0329233	892.237037	134.02282	940.5181818	189.741914
ap3s1	202442_at	2.40375E-05	1358.692593	212.255827	1813.590909	315.1389488
ap3s2	202399_s_at	0.00915175	888.9777778	132.6809398	780.9272727	144.4804656
APBA2	209870_s_at	0.0138837	413.6851852	106.8192424	347.0409091	91.28240147
APC	203525_s_at	0.0151348	345.5777778	114.3215786	492.0954545	166.0987987
APC	203527_s_at	0.00115616	76.28518519	57.38371321	146.7181818	68.08134236
APIP	218698_at	0.0113254	121.3148148	46.75797508	163.5090909	50.50107881
APOBEC3B	206632_s_at	0.00299078	30.87037037	16.0162133	21.8	11.38825627
Apol2	221653_x_at	0.00761506	91.6962963	66.54060924	56.20909091	32.75398789
Aprt	203219_s_at	0.0158415	140.8	37.60098198	103.75	51.61076623
Aprt	213892_s_at	0.0129539	278.0555556	77.1929866	211.0363636	59.56778888
aqp1	209047_at	0.00288949	618.2444444	316.1591704	441.4681818	318.1595128
AQP3	39249_at	0.0225456	43.97407407	31.23977485	31.52272727	17.95647998
ARFGAP2	211975_at	0.00410958	1028.074074	230.9647635	776.7272727	250.0656622
arglu1	218067_s_at	0.0226956	538.9444444	197.0533242	637.5363636	144.6950506
ARHGAP15	218870_at	0.0159411	35.64444444	22.33350938	19.48636364	18.1471576
arhgap26	215955_x_at	0.0165522	10.25925926	7.59191165	20.25454545	22.66534437
ARHGAP29	203910_at	0.0136757	164.8	39.58028841	224.7227273	87.17425861
ARHGEF12	201335_s_at	0.000949912	79.52592593	25.76611658	110.8272727	34.84560752
ARHGEF15	205507_at	0.0112811	137.5592593	47.27281915	116.4	46.73224644
ARHGEF9	203264_s_at	0.00835846	971.6185185	354.3302187	1193.381818	404.4248375
ARID4A	205062_x_at	0.00226732	166.8111111	59.13183662	263.9590909	97.5561165
arl5a	218150_at	0.00761818	572.0888889	143.2742591	683.6227273	133.128459
ARL6IP4	218216_x_at	0.00451299	1092.933333	236.0070664	851.9318182	241.9821646
armc8	203487_s_at	0.00220405	151.637037	42.93192418	179.5181818	24.20691826
armc8	203486_s_at	0.0198533	190.6592593	37.08254057	224.8954545	45.51160477

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ARPC1B	201954_at	0.0045194	230.5259259	83.35223034	167.15	55.70409705
ARPP19	221483_s_at	0.0334285	2182.218519	644.2223398	2696.327273	714.3672426
ARRB1	218832_x_at	0.0191867	29.3962963	18.28270476	21.62272727	15.3990393
Arvcf	217516_x_at	0.0306106	266.2444444	83.38694942	217.9454545	74.32303833
asap1	215435_at	0.0101077	64.77777778	16.85588994	85.72727273	22.82352967
Asap2	206414_s_at	0.000294277	449.3851852	88.85017079	576	144.6894968
ASB13	218862_at	0.0220581	334.8814815	76.057883	268.3818182	82.99643501
Asip	214498_at	0.0315331	43.52222222	34.26497801	27.44090909	22.59358651
asl	204608_at	0.0095052	163	35.87120122	126.3318182	41.68657871
ASMTL	209394_at	0.0193937	486.4185185	162.4417482	355.5363636	146.2834286
ASMTL	36553_at	0.0259557	904.1925926	325.9177066	678.9954545	216.1932149
ASPHD1	214993_at	0.0238751	237.937037	85.10101757	172.5909091	68.63673117
aspscr1	218908_at	0.00612327	179.0296296	68.33789812	119.4727273	55.31602869
Astn1	213197_at	0.000589914	588.7	229.3332241	820.0545455	251.4969217
ATAD2	218782_s_at	0.0279012	26.9037037	16.16543039	36.33636364	21.03209668
Atf2	212984_at	0.0240962	202.8407407	65.31350584	275.1772727	82.13026779
Atg12	213026_at	0.00570835	306.4444444	83.82656699	381.5045455	89.12584723
ATG4B	204903_x_at	0.00250364	354.4259259	62.06556454	278.9090909	73.28371422
ATM	212672_at	0.0119408	77.82962963	28.277428	121.6	54.9203059
ATMIN	201855_s_at	0.0284297	275.5518519	78.6596924	343.0454545	95.81364714
ATP10D	213238_at	0.0193044	90.01851852	25.20576914	118.1090909	38.80301791
ATP13A1	218052_s_at	0.0291956	301.6111111	52.21676958	261.2	49.05715811
ATP13A3	212297_at	0.016875	148.3074074	58.24140033	185.9772727	58.72058073
ATP2B1	209281_s_at	0.00412123	1873.833333	716.4445311	2934.122727	1554.842791
ATP2B1	212930_at	0.00377209	891.9111111	358.6014987	1305.095455	499.26094
Atp2b3	215911_x_at	0.0131194	21.88518519	12.25280827	34.25909091	16.26988627
ATP2C2	214798_at	0.0132659	84.92592593	36.66489195	100.1863636	33.00592004
Atp5d	213041_s_at	0.0120456	1512.866667	456.9721781	1069.786364	376.6600682
atp5l	208745_at	0.0287218	737.6814815	274.1351773	801.15	229.411522
ATP5SL	218038_at	0.0209351	100.2740741	68.69182905	66.45	32.21696906
ATP6AP2	201443_s_at	0.0162499	1895.3	454.5000135	2128.990909	651.1351604
ATP6V0E1	200096_s_at	0.00469009	474.0555556	188.4604413	393.7590909	101.5515288
ATP6V0E1	201172_x_at	0.0297406	985.8518519	336.0799428	889.7545455	259.2810347
ATP6V0E1	214150_x_at	0.0327756	1285.325926	345.6512244	1112.340909	365.5441158
ATP6V1C1	202873_at	0.0131093	84.05185185	35.03035355	114.6136364	31.5785083
ATP9A	216129_at	0.0033092	100.3740741	56.66140046	152.1818182	65.16740082
ATR	209903_s_at	0.0228993	312.2777778	89.71300537	354.0636364	88.59125263
ATRN1	213744_at	0.000929803	237.8814815	66.91143421	309.4454545	78.74617286
Atrx	208860_s_at	0.000611538	129.7037037	62.18999723	206.7636364	72.86992681
Atrx	208861_s_at	0.000108576	851.5740741	182.8958733	1147.727273	243.9179354

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ATXN1	203231_s_at	0.0058867	375.6518519	148.3508533	511.8363636	167.2630393
ATXN1	203232_s_at	0.00275788	778.137037	249.0361684	1080.986364	365.8092533
ATXN7	204516_at	0.0044524	106.337037	38.59443113	153.7045455	47.21331004
AURKB	209464_at	0.0135334	39.52592593	18.44829766	24.84545455	17.41618643
AVL9	212474_at	0.0113665	323.1481481	73.41961261	416.5	115.9581164
AZGP1	217014_s_at	0.00700729	102.1333333	38.58280805	146.7227273	62.23581064
Azi1	214742_at	0.00673079	76.84814815	37.78638715	43.31363636	21.78237154
AZIN1	212461_at	0.0304909	497.3111111	156.6378561	606.65	143.5014775
B3galt2	210121_at	0.0240599	37.98888889	17.85786475	47.05454545	14.75997572
B4galt5	221484_at	0.0245141	387.7814815	82.72352952	428.4409091	91.98145599
B4GALT6	206233_at	0.0217535	80.23333333	35.44710035	115.2409091	53.16152081
Bach2	221234_s_at	0.01295	106.7925926	31.82802256	136.5545455	33.18062727
Bad	1861_at	0.00533561	208.2518519	55.36136789	183.7590909	53.76105564
bag1	202387_at	0.0173618	1004.033333	297.7551614	726.3636364	281.2695615
BAMBI	203304_at	0.0250112	195.5592593	48.53414547	167.0318182	39.59798439
Basp1	202391_at	0.000221077	3192.311111	732.5212627	4016.431818	857.0831817
Bat2l2	211946_s_at	0.0114734	614.9740741	220.4530991	775	239.4706742
BAZ1A	217986_s_at	0.00503112	38.40740741	20.86881969	60.68181818	22.08329764
Bbs1	218471_s_at	0.00677573	446.4814815	86.13769405	571.2272727	170.9387615
BCAP31	200837_at	0.000388379	1447.025926	439.7327848	952.2545455	312.0836926
BCAT1	214390_s_at	0.0204726	20.02222222	11.27322674	15.73181818	7.205314597
BCL11A	219497_s_at	0.00527691	158.4925926	58.5683291	251.6772727	106.5867674
BCL11B	219528_s_at	0.000584346	567.0185185	173.9695907	827.2727273	230.8168851
BCL2	207004_at	0.0184761	84.47407407	39.56214773	61.82727273	24.74495007
BCL2L13	217955_at	0.00020339	212.4444444	60.53181194	172.1636364	44.08422183
Bcl2l2	209311_at	0.00329226	682.9185185	185.5338411	770.75	147.400164
Bcl7c	219072_at	0.0243902	270.2444444	89.9288622	206.6636364	102.8049774
BCLAF1	201084_s_at	0.00731043	951.0185185	358.0234673	1217.604545	299.5221186
BECN1	208946_s_at	0.0267819	443.6592593	146.2201482	498.4181818	148.7075386
BEST1	207671_s_at	0.00118619	98.84074074	48.51951439	65.51363636	29.89668393
BEX4	215440_s_at	0.0171207	834.2888889	356.0711471	1129.581818	442.7883958
BGLAP	206956_at	0.00880026	171.0555556	44.13831698	133.3590909	39.0549876
BGLAP	202337_at	0.02758	231.0296296	52.20550969	197.0954545	33.80837424
bin1	210202_s_at	0.0276929	648.4814815	257.9645131	463.9636364	193.1039507
BIRC5	202095_s_at	0.00618169	17.82962963	13.72490198	11.52272727	7.293240956
bloc1s1	202592_at	0.0330582	789.4814815	163.6114958	703.0772727	227.2270816
Bnc1	206581_at	0.00284651	43.01851852	26.42369329	57.04090909	25.63885925
BPTF	209271_at	0.00155921	201.6740741	77.22565632	297.2409091	90.43529473
BRF2	218955_at	0.00619441	449.937037	88.5458384	374.6409091	63.59073502
BRS3	207369_at	0.00785558	97.19259259	28.59421574	140.2318182	57.92058098

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bsg	208677_s_at	0.0331665	484.4037037	367.9778656	367.9909091	218.339541
BSPRY	218792_s_at	0.0177795	501.4740741	216.5777505	359.8409091	68.13443056
Btaf1	209430_at	0.00551146	159.5888889	49.3782834	214.0363636	74.43838964
C10orf26	202808_at	0.00813047	845.0333333	286.0008593	689.3272727	198.9040093
C11orf24	218299_at	0.0241979	133.0962963	42.96037961	99.54545455	58.74409172
c11orf48	221637_s_at	0.00661766	320.9148148	75.77563391	243.3727273	71.14917382
c11orf51	204218_at	0.0130199	665.0259259	152.7002131	533.9681818	129.3298639
C11orf67	221599_at	0.000525529	202.7962963	78.51363665	148.5409091	54.25240534
c12orf11	221652_s_at	0.00955319	96.63703704	26.22233558	124.5545455	28.60277588
C12orf44	218214_at	0.00342569	413.2962963	92.11040817	302.7818182	73.70681713
c12orf51	211034_s_at	0.0143115	734.2222222	159.3186196	865.6727273	164.6803952
C14orf101	219757_s_at	0.0194429	230.5703704	61.16546169	289.2227273	76.99617141
C14orf139	219563_at	0.00500022	186.9555556	82.85234472	135.1545455	41.25663845
c14orf147	213508_at	0.000912207	342.8407407	86.18555233	413.6227273	74.072043
C14orf169	219526_at	0.02542	343.4925926	66.84530319	301.3909091	54.11894228
C14orf79	213512_at	0.0185621	123.6555556	26.10723939	93.05909091	35.80824139
c15orf29	218791_s_at	0.0281078	240.5444444	71.1994454	286.4772727	52.79585059
C16orf72	217682_at	0.0198536	70.80740741	31.82112175	57.05454545	23.37894305
C17orf101	53071_s_at	0.00140108	180.3407407	58.69780666	122.0227273	42.70479991
C17orf62	218130_at	0.00926469	212.9851852	79.58323028	154.7772727	35.31937188
C17orf90	221797_at	0.00187369	85.86296296	36.34621077	42.08636364	37.11733385
C19orf24	221587_s_at	0.00257555	231.4296296	72.92771877	168.1727273	52.05907982
C19orf36	214296_x_at	0.00220411	59.93333333	35.0122506	39.94545455	17.49363768
C19orf42	221988_at	0.0291746	274.6925926	56.92125415	300.0818182	74.55984261
C19orf60	51200_at	0.0331344	1254.707407	559.5680738	937.6954545	353.0816316
C19orf73	220151_at	0.0087221	46.45185185	28.49816958	35.57727273	23.22024839
C1orf103	220235_s_at	0.0281337	101.5407407	37.87775133	138.5772727	58.72832473
C1orf123	203197_s_at	0.0209398	333.9333333	72.74004293	282.8454545	80.40689219
c1orf144	212003_at	0.0114146	27.21111111	25.51300322	13.71818182	3.361354087
C1orf21	221272_s_at	0.000177305	170.9888889	50.25561073	228.4136364	38.99464304
C1orf63	209007_s_at	0.0150186	735.7148148	289.3989457	889.4772727	307.0847889
C1qa	218232_at	0.00751993	183.9333333	112.6269267	123.2545455	64.9461002
C1QB	202953_at	0.0118693	264.062963	174.0394499	158.2727273	76.87668036
C1r	212067_s_at	0.0066273	158.1444444	68.36432005	104.8136364	44.19607067
C20orf117	207711_at	0.00158624	120.9222222	53.04209746	80.93181818	29.647844
c20orf43	217737_x_at	0.0175586	551.7888889	136.1627853	465.6954545	130.8911634
C22orf9	217118_s_at	0.0213785	1504.703704	752.6185373	989.2454545	428.5919357
C2orf24	200070_at	0.00290731	407.7259259	99.93300676	305.4909091	82.61166128
C3	217767_at	0.0134353	586.0740741	397.4010855	303.7045455	191.166797
C3orf63	209285_s_at	0.0136555	242.962963	119.8963243	305.0954545	95.28044559

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c4orf23	220891_at	0.000469084	22.82962963	15.07235918	40.92272727	19.39636519
C4orf6	207241_at	0.0281776	33.99259259	23.04193378	24.70909091	16.13148088
c5orf42	219381_at	0.0276866	74.73333333	35.53310482	97.07272727	44.50301415
C6orf120	221786_at	0.0145427	254.7259259	75.55524007	295.9090909	53.28969264
C6orf120	221787_at	0.018916	111.0185185	36.53525207	147.0318182	40.59078463
C6orf162	213312_at	0.00649727	149.8185185	80.55444903	255.2772727	118.7519862
C6orf208	220904_at	0.0200321	68.77037037	49.45286656	81.49090909	25.18385554
c6orf211	218195_at	0.00789992	106.0296296	51.29591988	153.8318182	58.78880187
C6orf48	220755_s_at	0.0266329	903.6555556	204.0097741	1031.945455	255.2913904
C7orf49	220949_s_at	0.0116563	180.2851852	35.76537543	161.5272727	46.04836155
C8orf84	214725_at	0.00976615	17.36666667	14.57207551	12.96818182	8.303951232
C9orf78	218116_at	0.00525692	255.7592593	81.7614883	325.5909091	95.61344252
CA4	206208_at	0.00897037	87.72962963	27.42434088	59.77727273	35.41075881
cab39	217873_at	0.00555533	539.1037037	198.8509018	623.4318182	209.7860052
Cacna1d	210108_at	0.0179174	77.28518519	29.43860239	109.8227273	36.94201289
CACNA1G	211314_at	0.023876	7.244444444	4.469669867	5.290909091	1.885510943
CACNB1	210967_x_at	0.0119178	112.6444444	51.48191866	81.13181818	40.43505535
CACYBP	211761_s_at	0.0147856	1382.677778	339.1182938	1693.995455	424.912888
CALB1	205625_s_at	0.0197569	1764.948148	803.4484577	2351.213636	841.0123442
CALM3	211984_at	0.0128056	6565.425926	1642.405138	7975.986364	2144.486578
camk4	210349_at	0.013204	142.1925926	46.79556131	187.6454545	51.15052229
CAMSAP1	212710_at	0.000151359	453.2148148	83.12388671	561.8772727	98.85524257
CAMSAP1	212711_at	0.00172382	344.8777778	81.24148397	428.8636364	103.6889926
camsap11i	212765_at	0.000341215	1499.962963	290.8216466	1993.422727	469.8836988
camsap11i	217196_s_at	0.0150688	222.062963	77.04060442	276.9090909	109.2001261
CAMTA1	213268_at	0.000428021	632.8851852	205.5554047	855.3045455	263.2998535
Canx	200068_s_at	0.0122401	2168.555556	305.5716778	2466.659091	431.8118987
CAPRIN2	218456_at	0.0176216	594.6074074	194.5214699	731.3454545	177.4371592
Casc3	207842_s_at	0.0025155	556.4777778	104.4983781	456.8136364	112.3632303
casp10	210708_x_at	0.0130554	82.40740741	30.49683371	115.8	59.65587825
Cbr3	205379_at	0.00674431	370.9	130.399065	271.1636364	107.8287423
ccdc101	48117_at	0.0276796	192.6518519	47.43617875	165.4363636	70.98001426
CCDC28A	209479_at	0.00535081	526.3	144.9004911	666.0681818	214.0564442
Ccdc47	217814_at	0.0313124	409.0592593	146.6571571	506.9727273	146.4910015
CCDC85B	204610_s_at	0.0208359	2708.633333	917.6267986	1744.381818	1003.522228
CCDC90B	218288_s_at	0.0129516	477.0407407	141.4968748	557.4045455	129.2542879
Ccl27	207955_at	0.0307038	36.15925926	20.88649286	25.45	20.46094421
CCND3	201700_at	0.00341562	753.6259259	145.666425	633.6590909	109.0682078
CCNF	204826_at	0.0104375	95.86666667	47.90720196	62.36818182	36.45072847
ccno	210021_s_at	0.0236863	309.2925926	75.14202412	250.8318182	87.13419528

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CCNT2	213743_at	0.0155604	137.7962963	53.89737743	165.9090909	47.85814265
CCR5	206991_s_at	0.0226545	53.57777778	44.56756611	32.74545455	16.26912727
CCRL2	211434_s_at	0.0104154	45.54444444	28.25578679	28.5	15.70040946
CCT2	201947_s_at	0.0223158	1063.4	257.9663559	1181.2	262.0044838
CD2BP2	202257_s_at	0.00493193	239.2	62.27305257	153.0818182	85.96337889
CD300A	217072_at	0.0305683	28.54444444	18.66026905	18.48181818	11.4084612
CD302	203799_at	0.0153714	104.3259259	35.95877546	144.5909091	45.02649917
CD40	35150_at	0.0221499	325.3962963	65.86943076	296.9045455	84.83407602
CD47	213055_at	0.0277624	204.462963	91.47103849	324.4227273	175.0018964
Cd53	203416_at	0.0308855	312.5407407	96.02406853	267.3636364	75.15115274
Cd55	201926_s_at	0.0197871	75.98148148	52.17598945	46.00909091	30.05659597
CD58	216942_s_at	0.0131889	29.52592593	23.89611479	17.74090909	15.68923377
Cd6	208602_x_at	0.0251122	17.88518519	8.642146444	15.85454545	6.186908396
CD63	200663_at	0.0027743	2111.744444	457.4110728	1674.459091	444.8527361
CD81	200675_at	0.00112672	2828.514815	592.2170884	2504.740909	528.0457778
Cd8a	205758_at	0.0330249	217.7518519	74.18045757	288.5909091	81.3824066
Cdc123	201725_at	0.0321556	559.0740741	122.4908963	625.85	140.6294244
CDC16	209659_s_at	0.028426	554.6407407	111.6967745	630.8363636	116.4968651
CDC37L1	219343_at	0.022472	135	29.66262865	157.1409091	43.01944919
Cdc40	203376_at	0.0198276	609.1962963	179.9910008	766.7454545	183.7192883
Cdc42ep2	209850_s_at	0.00698405	148.5925926	82.36325696	81.76818182	61.95562457
CDC42EP3	209288_s_at	0.0223403	68.18148148	20.1712102	88.20909091	22.2321498
CDC7	204510_at	0.00414524	165.1925926	42.75327181	215.3454545	54.42180697
CDH11	207173_x_at	0.0161202	409.6222222	156.8933355	549.5545455	177.7201243
Cdh12	207149_at	0.00107432	116.2037037	40.57541394	164.4681818	45.17033778
CDH13	204726_at	0.0322162	27.2037037	16.51932392	16.65	11.32522469
Cdh15	206328_at	0.032816	11.21481481	7.598466632	16.61363636	19.42063938
CDH8	210518_at	0.0325232	300.3222222	78.09266356	327.1318182	55.12756105
Cdh9	207729_at	0.0251329	69.58148148	20.27319255	88.98636364	35.2244003
Cdk1	210559_s_at	0.0137982	32.61111111	20.96194965	26.28181818	21.26169452
CDK13	207318_s_at	0.00101006	305.3037037	82.00572908	432.3409091	125.336407
Cdk17	221918_at	0.0168531	1317.511111	475.5486462	1785.495455	734.2324457
CDKN2A	207039_at	0.0132818	50.38518519	28.53616738	35.34545455	16.91558108
CDKN3	209714_s_at	0.00367168	106.0925926	23.62780184	132.7772727	44.13283986
CDO1	204154_at	0.00508682	519.7666667	229.2330457	720.5045455	272.2494138
CEACAM7	211848_s_at	0.011682	9.137037037	6.450828697	6.868181818	2.499216327
CELF2	202156_s_at	0.00790149	370.5888889	188.7388129	575.7772727	184.2583691
CELF2	202157_s_at	0.00449247	1671.396296	704.2852102	2499.304545	827.7051502
CELF2	214405_at	0.00361492	49.43333333	32.03794625	100.2363636	60.65440388
CEND1	219591_at	0.00923391	801.4037037	212.0917027	647.2681818	151.5446198

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CENPC1	204739_at	0.00495314	65.55185185	23.63955893	85.82727273	19.73725464
CEP170	207719_x_at	0.00783428	582.8777778	132.5396032	732.55	174.5015452
Cep68	212677_s_at	0.0165303	508.037037	137.82432	539.3954545	101.9517135
CEP76	52285_f_at	0.0307523	37.92222222	14.46856894	48.67727273	22.1812433
CFH	213800_at	0.0253538	39.81111111	29.94569872	23.44090909	16.5877654
CHAF1A	203975_s_at	0.00103658	90.56296296	42.14596566	50.76818182	26.50479537
chat	221197_s_at	0.0234125	44.08888889	20.92115847	38.06363636	27.08395317
CHCHD3	217972_at	0.0322109	283.8851852	49.94103218	324.5136364	59.24605911
CHD1	204258_at	0.00340645	84.99259259	40.30560112	150.6954545	68.85782092
CHD9	212616_at	0.000321711	269.3518519	103.655956	472.1681818	180.5165878
CHL1	204591_at	0.0118573	587.8814815	203.7315523	795.8590909	275.8811194
CHMP1B	218177_at	0.0305521	167.4703704	81.6521789	136.7590909	57.80468476
CHMP2A	202121_s_at	0.00403976	1143.87037	207.5094174	836.9136364	282.148332
CHMP4A	218571_s_at	0.0178954	840.1518519	289.9113145	593.9272727	191.1003705
CHMP6	218743_at	0.0210188	197.4555556	45.24360842	155.3363636	48.65666445
Chn2	213385_at	0.0221647	493.0296296	146.4184068	599.8909091	189.2833223
CHORDC1	218566_s_at	0.00573407	201.9259259	85.71778647	286.1863636	87.90733918
CHRD	211248_s_at	0.00991167	103	39.43936924	81.17727273	46.55714289
CHRM3	214596_at	0.0240509	147.4074074	119.351607	196.3409091	112.5886726
CHRNA6	207568_at	0.00450729	119.7407407	41.70717757	143.5681818	55.30061901
CHRNA9	221107_at	0.00615913	85.97407407	36.49150157	115.7954545	56.11520868
Chrb4	207516_at	0.0309191	33.38148148	18.24451524	21.05909091	19.4485563
CIAPIN1	208968_s_at	0.0245953	487.2962963	124.1237022	412.0363636	73.4115376
CIB1	201953_at	0.000667348	419.3	79.74697486	354.4772727	101.859478
CINP	217598_at	0.00871995	67.6037037	27.75669679	46.35909091	28.46295268
Cirbp	200811_at	0.00691398	1760.762963	510.0851604	1455.622727	349.1984031
Ciz1	211358_s_at	0.00616193	173.5444444	44.8641825	135.7272727	42.910862
Ckap2	218252_at	0.0226637	177.4222222	47.99943376	233.9863636	80.27783478
CKB	200884_at	0.0115203	5215.8	1076.764488	4019.609091	1054.028231
ckmt2	205295_at	0.0148102	131.4777778	31.60858371	111.9818182	21.24074334
CLCA2	206166_s_at	0.0163929	50.68888889	22.25439167	42.00909091	35.07227787
Clcn3	201733_at	0.00735751	215.6074074	98.05216008	288.8045455	115.6923444
Clcn3	201734_at	0.00185912	1004.292593	276.8798711	1399.068182	405.4753875
Clcn3	201735_s_at	0.0276323	347.237037	107.1679672	422.3772727	124.1342704
CLCN7	38069_at	0.00415731	497.5666667	155.5779671	416.6863636	62.57600556
CLDN5	204482_at	0.0110054	577.4296296	242.4794215	413.4545455	237.1992607
CLEC5A	219890_at	0.0182993	63.62592593	26.95696845	56.90909091	31.53046764
CLIC1	208659_at	0.00350071	198.0592593	67.36602236	132.5	56.91978483
clint1	201769_at	0.0042545	298.1148148	81.38560024	415.95	138.6178053
clu	208791_at	0.0166753	6950.288889	2190.52863	6267.890909	2442.857094

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clu	208792_s_at	0.00278639	6507.522222	1465.645808	5412.027273	1852.823151
cndp2	217752_s_at	0.0285243	1516.362963	345.0616379	1181.522727	378.8517714
CNOT4	203291_at	0.00415125	230.9296296	58.98273421	284.0590909	52.65766945
cnot8	202162_s_at	0.023614	81.84074074	43.951409	67.65909091	35.94364185
CNTNAP2	219301_s_at	0.00242499	277.9703704	136.423393	330.4772727	128.1226307
CNTNAP2	219302_s_at	0.00659163	48.76296296	15.86379885	61.95	24.63904663
Cobll1	203642_s_at	0.0171337	79.74074074	33.13718872	115.8090909	69.54175799
Cobll1	211032_at	0.00934245	6.781481481	10.04604924	3.354545455	4.433823167
COG2	203073_at	0.0123443	344.8333333	70.84897263	307.1363636	82.68790172
Cog4	212189_s_at	0.0024709	293.2037037	82.92975935	218.3909091	68.4115829
COL1A1	217430_x_at	0.00239059	188.6555556	64.32104174	140.4681818	44.07861361
COL6A1	212091_s_at	0.00773355	17.20740741	7.942772521	12.98636364	6.934131968
COL6A1	212938_at	0.0154192	51.28888889	24.64352518	42.76363636	43.09266367
COL6A1	212939_at	0.00523132	10.06296296	5.659787176	7.622727273	2.228801048
Col6a3	201438_at	0.0224092	20.3037037	13.70725472	10.82727273	5.985711703
Commd3	218048_at	0.0270139	749.9925926	317.5337667	588	135.286289
COMMMD4	206441_s_at	0.000492255	184.4592593	52.33568616	123.5818182	69.33180151
COMMMD4	209132_s_at	0.0119644	255.0555556	60.72711556	187.4818182	62.99389718
COMT	213981_at	0.00974655	78.6962963	20.93380559	59.52727273	25.13195996
copA	214337_at	0.0109424	20.30740741	17.65942603	17.23181818	9.277540025
COPG2IT1	213486_at	0.020686	834.1814815	422.5273665	1144.718182	441.9597974
Cops6	201405_s_at	0.0118693	1262.877778	345.7266921	1036.936364	235.1817181
COQ3	221227_x_at	0.00633625	239.0037037	41.80522126	258.2590909	32.11412179
Coro1a	209083_at	0.0142618	243.9148148	99.27826745	175.0954545	73.22425748
COX4I1	200086_s_at	0.00291187	4979.314815	911.1425058	3773.763636	981.3293974
COX4I1	202698_x_at	0.0137224	8512.981481	1462.942645	6723.245455	1814.918893
Cps1	217564_s_at	0.0153135	31.55925926	22.54754394	21.56818182	19.90231828
CREB1	204314_s_at	0.0292732	80.84444444	26.04505465	96.81818182	26.6863196
creb3	209432_s_at	0.00340287	791.2888889	265.8211217	610.4090909	152.2678621
Crebzf	202979_s_at	0.000647846	40.62962963	12.81005659	59	18.95184373
Crem	209967_s_at	0.0183847	194.5740741	80.74654835	284.6454545	128.6447775
crh	205630_at	0.0318601	168.2407407	79.01463477	223.1	109.9356955
CRHR1	214619_at	0.0218602	99.46666667	36.43881067	78.97727273	33.53866187
CRISP2	210262_at	0.000348697	15.51111111	12.96881862	27.44545455	20.64820359
crk	202225_at	0.0282138	203.362963	62.76536985	253.7727273	66.23469945
Crocc	216419_at	0.0108525	58.24814815	31.42567997	47.25909091	30.24493124
CROCCL2	219139_s_at	0.0300732	44.7	26.77911069	63.47272727	35.30777847
CRYBA2	220136_s_at	0.00222998	7.766666667	5.720543277	3.859090909	1.348247219
csnk1a1	208866_at	0.00548661	85.62592593	27.28695931	110.2090909	24.0533318
Csnk1g3	220768_s_at	0.00792403	145.6814815	35.93259755	192.5	63.84654967

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
cspg4	214297_at	0.0222258	74.88888889	63.1009529	45.7	33.46164827
CSRNP3	220462_at	0.000485314	565.3074074	178.367945	768.4727273	203.4341971
CSRP1	200621_at	0.0115499	2898.544444	1265.110694	2293.318182	1080.282882
cstA	204971_at	0.0309136	39.31111111	30.22932012	31.29545455	15.88291917
CTAG1B	217339_x_at	0.00242374	21.82222222	18.08629599	13.51363636	7.448444737
Ctbp1	213980_s_at	0.00120032	1422.888889	457.6670408	1077.636364	307.128288
Ctdsp1	217844_at	0.0114472	357.9703704	99.37735702	288.8454545	102.1483036
Ctnna2	205373_at	0.000872418	493.037037	145.9123476	624.7090909	165.9222908
CTNBL1	221021_s_at	0.00972852	245.7259259	43.65611767	205.1818182	30.27629336
ctps2	219080_s_at	0.0330733	62.43333333	27.62167488	54.22727273	23.93031912
CUEDC2	218097_s_at	0.0215896	1489.025926	370.3637532	1216.813636	285.9543442
CUL4B	202214_s_at	0.00598407	481	148.340816	664.6954545	228.8104029
CUL5	203531_at	0.0113953	567.2481481	168.3920663	683.3909091	171.0561671
CXorf1	206711_at	0.00320971	156.5222222	62.97238304	209.1090909	53.40660659
CYB561	217200_x_at	0.0224056	500.9074074	78.77295966	456.8954545	100.6122187
CYB561D2	209665_at	0.0234692	241.2074074	49.66840759	186.5636364	65.44957743
CYB5R1	202263_at	0.0216668	545.9777778	137.6170029	469.5636364	94.62376398
CYBB	203922_s_at	0.0133038	98.39259259	34.70470957	87.44090909	35.34008461
CYCS	208905_at	0.0182437	2991.485185	833.6032513	3378.431818	775.8767289
CYFIP2	220999_s_at	0.007586	607.1111111	194.3445955	767.1636364	225.7618774
CYLD	213295_at	0.000180164	552.3333333	160.1866844	756.2136364	172.3949267
CYLD	39582_at	0.000137557	277.9296296	76.6117425	376.6272727	89.88178576
CYP1B1	202436_s_at	0.00605441	195.6740741	76.58083006	241.3818182	71.40106466
cyp20a1	219565_at	0.0203232	3.492592593	1.214313965	4.972727273	2.382112272
cyp2j2	205073_at	0.0255498	191.8666667	78.11200538	168.2681818	60.73667901
cyr61	201289_at	0.0223627	125.2185185	72.2990586	186.9681818	78.90582323
Cyth3	206523_at	0.0152714	9.544444444	11.08111121	5.895454545	2.746162218
Dach1	205471_s_at	0.0170013	229.5111111	72.63745237	289.1363636	105.9534064
DAPK1	203139_at	0.0251031	814.5666667	208.433522	928.2045455	217.7226206
DAPK2	206324_s_at	0.0255508	59.32962963	34.73664453	39.98636364	31.63386214
DAXX	216038_x_at	0.00579885	122.7444444	45.92483268	95.84545455	36.28475644
dcaf11	201886_at	0.00739632	438.2740741	104.2767715	336.7590909	93.03010603
DCAF6	217908_s_at	0.00944723	263.0703704	63.45770739	293.3136364	70.91459179
DCLK1	205399_at	0.00450278	1751.048148	694.8817217	1999.027273	600.5437696
DCLK1	215303_at	0.000259968	330.4407407	121.113044	479.0772727	189.4774266
dcp2	212919_at	0.00302426	320.2666667	80.54461258	419.5909091	91.40505826
dct	216512_s_at	0.0275573	64.54814815	29.62303379	88.77727273	38.93285957
Dctn5	209232_s_at	0.0213724	274.4962963	79.92151189	201.5045455	70.03562683
dcun1d4	212855_at	0.00414563	133.4259259	45.3706665	189.5636364	65.21146222
dcun1d4	212851_at	0.0222436	149.2481481	38.98863119	181.4863636	41.42955347

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DCX	204850_s_at	0.00417904	283.8777778	151.1781764	352.75	97.55621944
DCX	204851_s_at	0.000535947	135.2740741	59.47982588	204.8454545	72.20195702
DCXR	217973_at	0.0205112	1014.255556	394.1864361	790.5136364	346.0840227
DDHD2	212690_at	0.00112408	765.5777778	189.7512305	956.2409091	266.5604258
DDOST	208675_s_at	0.000933848	730.5666667	256.4379712	571.8181818	137.4967035
DDOST	208674_x_at	0.030759	546.3444444	141.8354717	453.6272727	75.47715632
ddt	202929_s_at	0.0218053	272.1703704	98.34015071	214.1727273	79.00531737
ddx10	204977_at	0.0154772	316.5444444	51.20865562	365.1227273	48.20565993
DDX18	208896_at	0.0160477	108.4592593	39.92224423	151.8545455	46.60946897
DDX3X	201211_s_at	0.0132246	44.5	28.88588956	29.80909091	22.58326201
ddx56	217754_at	0.0251116	362.1148148	74.24183821	315.6727273	64.98169106
dedD	215158_s_at	0.0218535	362.9259259	111.2268389	309.8636364	68.63140018
DEFA1	205033_s_at	0.0170927	90.43703704	35.19665793	82.15454545	36.72908186
dennd1a	219763_at	0.00452222	87.61111111	39.21056896	75.00909091	40.81226367
DENND2A	53991_at	0.0120325	189.5703704	80.45654735	146.6090909	35.82875819
DENND5B	215058_at	0.00884385	43.9037037	18.97325003	64.81818182	31.14604059
Dgcr14	204383_at	0.0137431	165.5407407	39.67882849	145.0909091	36.09991306
Dgcr14	216145_at	0.0213303	18.28518519	12.60737585	41.15454545	35.82225601
DGKI	206806_at	0.0132298	167.7740741	60.69101183	235.3681818	86.59569651
dhodh	213632_at	0.0183378	85.21481481	37.96538609	75.51363636	31.19786768
dhps	207831_x_at	0.0266291	382.9074074	184.7353199	268.1636364	112.7423255
Dhrs4	218021_at	0.00613482	242.6666667	50.69998483	203.1636364	43.8054633
dhrs9	219799_s_at	0.0119369	212.1185185	75.98432549	166.0409091	68.93139902
DHX8	203334_at	0.0254719	29.05925926	23.38647307	15.65454545	5.851473341
DIAPH2	205726_at	0.000160629	475.6814815	145.2197778	673.3454545	141.8377266
DICER1	212888_at	0.0254795	344.4666667	95.59832635	451.9727273	133.2726785
Dimt1l	217106_x_at	0.0190926	393.2814815	79.49027535	510.1363636	164.9459523
Dimt1l	210801_at	0.027608	30.95925926	11.765571	33.18181818	11.33492859
DIRAS2	219619_at	0.0234353	550.2185185	230.7467594	639.3727273	232.7333548
DKFZP586K1520	217220_at	0.00875638	21.86296296	14.42012878	32.91363636	16.1205369
dlaT	213149_at	0.00869479	225.0111111	60.60744644	257.4227273	70.09155191
DLEU2L	216870_x_at	0.00326565	82.92222222	28.48102382	126.6	48.9037344
DLG1	202515_at	0.0149317	1497.533333	339.3344685	1718.390909	316.3590033
DLGAP2	210227_at	0.00260781	454.6814815	146.9539568	609.1272727	160.6297938
DLGAP2	216916_s_at	0.00179491	13.94814815	4.070755966	18.14090909	6.284497865
Dlx2	215685_s_at	0.00867228	103.0148148	33.79980318	79.76818182	26.4138922
dmd	203881_s_at	0.00754232	207.0037037	56.45638535	289.7818182	105.7903346
Dmp1	217067_s_at	0.0299297	19.58888889	16.14690571	14.89545455	14.23049968
Dmtf1	203301_s_at	0.00253554	316.1074074	68.67527786	390.5909091	79.52337128
DMXL2	212820_at	0.000347694	480.4074074	130.712088	620.5681818	138.1358351

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Dnajb14	219237_s_at	0.00410038	278.3037037	84.72711618	399.3545455	151.1367458
dnajc12	218976_at	0.000209824	804.8148148	142.0135386	987.7045455	201.4433619
DNAJC13	212467_at	0.00867015	121.8037037	46.11235844	152.8409091	42.67371957
DNAJC17	219861_at	0.0268246	74.33703704	20.71408195	54.2	23.49569363
DNAJC8	205545_x_at	0.00914947	569.037037	93.68043531	501.7954545	70.07114396
dnajc9	213088_s_at	0.0264428	261.0888889	72.54140639	314.5863636	57.41227093
DNM3	209839_at	0.00136204	710.3	237.6885211	1027.745455	382.5702546
Dok1	216835_s_at	0.0206372	125.6592593	46.54648842	110.0545455	37.24755955
Dok4	209691_s_at	0.02796	59.61111111	25.16078043	46.71363636	30.17118296
dopey1	213271_s_at	0.00213821	398.6925926	80.94393086	517.4363636	120.6668556
DPH5	222360_at	0.0228205	91.91481481	27.585332	111.9863636	28.73755292
dpm3	219373_at	0.0133535	374.1074074	125.2251355	271.1318182	117.4152354
DPP4	211478_s_at	0.0326563	12.33703704	13.55618361	24.17727273	20.31197001
Dpp6	207789_s_at	0.0157817	672.1296296	161.1946191	751.4090909	211.739559
Dpp8	220939_s_at	0.0121261	263.4259259	74.57067681	324.2818182	77.1784243
DPY19L1	215433_at	0.0268262	36.84814815	15.96998074	52.24090909	24.21118709
DPY19L2P2	215143_at	0.00623286	342.0851852	101.6818254	423.4818182	141.1379387
DPYS	206065_s_at	0.0310846	40.31481481	22.46329833	60.69545455	25.30182522
DST	204455_at	0.0102862	22.41851852	21.21440072	33.42272727	20.40377957
DSTYK	211515_s_at	0.0260074	100.0555556	31.64388789	129.1363636	49.33530124
DTNB	214253_s_at	0.00436252	184.1259259	50.15948099	135.7954545	47.87066382
DUX1	208176_at	0.00612909	17.94074074	9.801148255	14.4	6.100273218
DYNC2H1	219469_at	0.0198221	124.4037037	44.67621533	158.2454545	38.40002142
DYNC2LI1	203762_s_at	0.0109485	124.8666667	48.33697422	157.6681818	29.569247
DYNLT3	203303_at	0.00219189	1371.018519	386.3192373	1707.913636	431.5752898
dyrk2	202971_s_at	0.00603668	32.92962963	19.61543377	59.42727273	37.78504594
Dyrk4	212954_at	0.0216518	247.162963	56.53725217	190.5954545	72.20002953
DZIP1	204556_s_at	0.0149864	237.2259259	61.08722385	305.9045455	76.6617585
DZIP1	204557_s_at	0.000397671	140.4259259	52.5816405	227.3272727	72.29983983
DZIP3	207231_at	0.00912662	101.1037037	53.92706957	155.4772727	67.84355205
E2F3	203692_s_at	0.0087639	140.7333333	47.42778316	174.1090909	62.03753019
E4F1	218524_at	0.0285037	151.7666667	49.44393873	116.8409091	44.85284574
Echs1	201135_at	0.0234513	1864.159259	338.009256	1440.677273	415.1562035
Ecsit	218225_at	0.0147098	494.4296296	152.8105836	344.7409091	137.1355175
eda	206217_at	0.00427247	164.3592593	50.09150288	136.1818182	40.26706839
EDNRA	204463_s_at	0.00637917	17.94814815	13.75640747	36.34090909	27.84555464
EEF1A1	213614_x_at	0.019564	13009.12593	2577.413309	11626.14545	2616.396777
EEF1D	203113_s_at	0.00302121	1661.174074	525.05518	1117.140909	430.5480712
EEF1D	214394_x_at	0.00748064	2842.581481	1561.203968	1787.845455	849.5056824
EFEMP2	206580_s_at	0.000659537	453.4407407	145.911167	348.45	81.50538253

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EFEMP2	209356_x_at	0.00760661	201.937037	40.26716689	177.5	54.00534365
EFR3A	212149_at	0.00262335	402.9777778	80.32616363	525.0909091	117.5439286
EFR3A	212150_at	0.00103081	298.6148148	83.74746703	381.6227273	100.3343882
Egr1	201693_s_at	0.0212444	181.262963	64.79154235	258.5590909	146.1781974
EHBP1	212653_s_at	0.00132959	556.3555556	192.0173897	741.25	202.1905248
EHD1	209037_s_at	0.0145814	43.71851852	22.17703311	30.26363636	20.35484137
Ehd2	221870_at	0.00934328	36.85925926	20.11633969	28.21818182	19.36903853
EIF1AX	201017_at	0.00910618	172.0925926	97.78613999	294.0863636	185.3343113
EIF2AK2	213294_at	0.000288753	358.7296296	102.73167	528.0909091	132.2995947
EIF3B	203462_x_at	0.00909066	922.2037037	195.6532814	709.1772727	192.4695818
EIF3B	211501_s_at	0.00929453	280.2518519	54.03182374	218.0272727	66.43850133
Eif3e	208697_s_at	0.00212201	1359.233333	330.194763	1681.677273	417.4736877
Eif3f	200023_s_at	0.0298279	1568.366667	546.9504217	1288.577273	297.5904727
eif3g	208887_at	0.00686957	814.7	280.0454963	580.3409091	177.4840963
EIF3J	208985_s_at	0.0196975	347.9555556	94.75048339	411.8727273	73.13137677
EIF3K	210501_x_at	0.00754329	1980.422222	603.4051282	1500.463636	373.3456149
EIF3K	212716_s_at	0.00226817	2000.440741	456.011498	1470.772727	350.7147439
EIF3K	221494_x_at	0.00565705	2077.462963	472.8894448	1609.622727	339.2080636
EIF4E2	209393_s_at	0.0085636	100.8037037	37.22602978	78.46363636	34.39415157
Eif4ebp2	208770_s_at	0.00145664	242.2481481	54.63098142	190.8454545	39.87646074
Eif4g1	208625_s_at	0.0163341	346.7851852	83.99747571	319.8954545	69.40822291
eIF6	210213_s_at	0.00875552	498.1925926	168.2824776	376.3681818	84.51294849
ELAVL3	206338_at	0.0138038	96.61111111	92.50999253	60.93181818	41.78728887
elf3	201510_at	0.0192834	42.9	29.06036158	57.62272727	32.29220652
ELOVL4	219532_at	0.000655297	256.2037037	88.28832784	306.2954545	92.87821251
ELTD1	219134_at	0.00453092	43.81111111	23.88854462	28.72272727	12.1099696
emd	209477_at	0.0303914	244.0444444	50.00087948	215.9136364	59.85249564
EMG1	209233_at	0.0049765	319.9703704	99.28109207	247.2772727	77.4246788
EML1	204797_s_at	0.00505682	339.3666667	73.61241012	383.7727273	75.07328598
Enc1	201340_s_at	0.0234613	1108.222222	350.5681853	1366.095455	484.9265791
ENG	201809_s_at	0.00668957	184.2444444	47.52215947	136.8136364	50.19975617
ENO3	204483_at	0.0108298	57.05925926	27.18676515	38.95454545	19.8471475
entpd4	204076_at	0.00293187	454.1777778	171.8540108	582.8818182	240.1080246
EPHA4	206114_at	0.00723632	325.4259259	105.695148	400.7772727	128.4256944
EPM2AIP1	202909_at	0.00709135	423.9518519	124.4766965	533.0363636	126.9186186
EPS15	217886_at	0.0258423	592	196.4175869	657.7681818	142.3690522
EPS15L2	207750_at	0.0169562	4.837037037	8.230251335	1.818181818	0.928201725
EPX	214627_at	0.0326953	89.53333333	63.05731825	128.7590909	76.97113658
ErbB4	214053_at	0.00128884	764.862963	233.065077	1041.3	338.9480463
ERC2	213938_at	0.00295353	254.0259259	73.21731927	356.6772727	116.4739617

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Erc1	203719_at	0.0294221	393.4666667	153.8637334	274.7590909	90.88621174
ergic2	218135_at	0.0119027	156.5777778	55.15260182	213.1272727	74.9126487
ERP29	201216_at	0.00478144	837.6037037	226.155594	608.75	210.396566
ESPL1	204817_at	0.0144137	79.22592593	45.49203305	55.78636364	36.75123964
Esr1	211235_s_at	0.0266146	24.67777778	18.8959567	36.52272727	22.12664698
etf1	201573_s_at	0.017433	328.5814815	78.11305435	278.4272727	31.81440497
etf1	201574_at	0.0100477	529.8148148	125.3502653	584.0909091	116.6775814
etv1	221911_at	0.00291689	247.4518519	80.91065048	331.6727273	102.4763442
ETV6	205585_at	0.0317399	28.86666667	12.27602416	36.26363636	14.67617264
Evi2a	204774_at	0.0154904	921.637037	571.5519535	525.5363636	300.4724178
EXOC3	212630_at	0.0046795	323.6518519	125.4665735	178.0818182	118.5120152
Exosc4	218695_at	0.0146836	283.6740741	141.8114826	169.75	109.004752
Exosc4	58696_at	0.00401899	520.8740741	170.3735502	380.8863636	107.7551426
Exosc4	91684_g_at	0.00364589	193.4925926	76.15539238	150.7727273	43.14778791
EXPH5	213929_at	0.0128687	53.57037037	20.25103634	74.18636364	38.65949394
EXTL1	206329_at	0.0076416	72.11851852	27.137301	46.83181818	25.31802269
EZH1	211310_at	0.0165112	10.83333333	8.672680359	20.71363636	18.14988641
EZH1	32259_at	0.0250566	632.3111111	148.7603114	530.0590909	129.9248342
EZR	217230_at	0.0253632	10.2962963	3.648127178	9.363636364	3.405114564
F13A1	203305_at	0.0219525	152.8555556	30.76544432	132.5772727	53.52409277
FAF1	218080_x_at	0.0216413	263.9666667	55.51414234	233.2272727	32.96659466
FAH	202862_at	0.0191857	154.1148148	38.06081878	133.4636364	47.52745117
Fahd2a	218504_at	0.00240421	344.1518519	96.27436503	285.7590909	66.30361377
Fam105a	214947_at	0.0263884	43.11111111	25.69753555	67.95	49.19661961
fam107a	207547_s_at	0.00589963	1994.866667	701.66607	1754.7	633.8392638
fam107a	209074_s_at	0.0201538	3593.622222	1095.497013	3075.845455	1068.533205
FAM120A	200774_at	0.0181777	414.2740741	183.3823089	565.0227273	189.1067069
FAM13B	218518_at	0.0186659	518.3407407	171.264845	619.4681818	225.1980512
FAM153B	214945_at	0.0130756	350.1407407	219.8357871	494.6727273	214.8922503
FAM169A	213954_at	0.0100069	198.2962963	63.43811934	287.4045455	121.6001663
fam171a1	212771_at	0.0271603	2077.044444	444.5020527	2311.018182	495.6533126
Fam175b	212835_at	0.0310072	107.3	32.72852202	130.0454545	34.60961506
Fam175b	212837_at	0.0236696	283.5814815	88.40525148	322.2	63.89548013
FAM179B	213304_at	0.00608161	448.4814815	150.2270744	599.6545455	181.3407756
fam188a	218297_at	0.00307495	143.3851852	71.73237497	266.55	165.7024377
fam18b	218446_s_at	0.00300709	92.2037037	29.9468437	134.2363636	47.73171598
FAM3A	38043_at	0.0242565	304.0407407	91.06270984	224.6909091	77.91446414
FAM3C	201889_at	0.00811247	550.7	215.2742991	766.7136364	279.8984311
FAM46C	220306_at	0.00973611	42.9037037	29.43795929	26.53181818	10.91994184
Fam50a	203262_s_at	0.0290633	516.937037	192.2779982	375.4318182	146.310467

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FAM65B	209829_at	0.00449419	213.6888889	89.00550257	327.4636364	100.3291181
FAM8A1	203420_at	0.00130835	614.4481481	169.087816	814.1545455	181.1323056
FARP1	201910_at	0.00386942	245.5111111	78.48165064	189.5318182	81.25057296
farsa	202159_at	0.00663783	473.0296296	153.2609836	338.6636364	109.2166503
FASTK	202676_x_at	0.0141332	276.4111111	99.49436526	174.3909091	102.4436008
FASTKD2	205976_at	0.0308079	40.79259259	16.76039117	50.74090909	23.15596517
FBL	211623_s_at	0.00421735	957.1777778	229.0671758	728.1090909	156.2867783
Fbn1	202766_s_at	0.0164261	97.78518519	34.75956652	132.8954545	49.07601953
Fbxl15	218938_at	0.0133249	576.5259259	191.2382075	406.6409091	137.3611772
Fbxl2	214436_at	0.00351436	411.9481481	63.27382112	492.6590909	89.42112065
fbxo11	222119_s_at	0.00497762	274.8925926	72.41651918	349.2090909	92.1459035
Fbxo28	202271_at	0.0231605	423.037037	78.56870168	458.7227273	64.08307058
Fbxo5	218875_s_at	0.0302891	24.3037037	12.55282627	31.13181818	9.517672103
Fbxw11	209455_at	0.00695191	755.1222222	225.1963064	895.6136364	242.1863023
FBXW2	209630_s_at	0.00990606	160.9185185	57.13036399	200.3181818	52.21734465
FEN1	204768_s_at	0.0169795	118.337037	23.95184509	98.43181818	26.88232534
fgf12	214589_at	0.0328656	49.44074074	27.85341105	69.85	37.51113803
FGF17	221376_at	0.0153604	44.83703704	24.24117838	59.82272727	26.8158967
FGFR2	208225_at	0.00717526	7.025925926	5.788157179	4.990909091	2.400180368
FIBP	202041_s_at	0.00449846	931.0444444	267.2403101	701.6090909	172.6779549
FIS1	218034_at	0.0268972	1848.159259	599.1713266	1393.795455	508.7450812
fkbp4	200894_s_at	0.0244804	166.737037	80.94186018	128.0954545	58.62696826
FKBP5	204560_at	0.00891496	5.281481481	4.504018465	4.059090909	1.446394233
FKBPL	219187_at	0.0176012	112.6222222	38.83927763	73.52272727	34.22818293
FKTN	205283_at	0.0104667	183	47.35609781	228.6727273	54.35855548
FLOT2	201350_at	0.0214147	648.4333333	160.0987412	564.6863636	136.847142
FLRT2	204359_at	0.00228885	588.0222222	150.22941	885.8272727	316.4497044
Flrt3	219250_s_at	0.00186647	168.4481481	57.32339682	223.2045455	68.93246161
FMR1	203689_s_at	0.0209624	213.9481481	73.1284874	281.6272727	77.0622765
FN3KRP	218210_at	0.0241293	501.4740741	92.97637662	440.6	88.11995072
FNBP4	212232_at	0.0125505	187.6555556	66.97713923	256.4227273	77.19329438
FNDC3A	202304_at	0.0198576	320.8888889	123.8847148	460.5818182	185.9926871
FNDC3B	218618_s_at	0.00399871	109.8296296	28.19960195	145.1863636	29.97764716
FOLH1	217487_x_at	0.0213181	191.0962963	81.4674474	134.8272727	60.54290239
FOLR2	204829_s_at	0.0159409	130.4814815	51.83868497	98.60454545	49.56821636
foxg1	206018_at	0.00656791	1346.174074	329.7486591	1633.204545	338.2430212
FOXP3	221333_at	0.0262893	15.08148148	12.43874335	10.60909091	7.716396216
FPGS	202945_at	0.0293079	214.9333333	54.46833237	172.8636364	60.60735886
Frmpd4	215052_at	0.0046885	135.7925926	57.24031612	177.5636364	58.09182834
fts1	213937_s_at	0.0323011	159.3074074	43.21742816	136.5954545	26.10089357

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FUBP1	212847_at	0.00105625	123.2814815	42.33178509	174.8090909	41.91708265
fus	200959_at	0.0052072	833.9666667	172.3392116	688.7	167.4928797
FUT4	209893_s_at	0.0119054	33.64814815	17.61907555	24.45909091	22.17782374
FUT6	210398_x_at	0.0212524	3.962962963	2.091953108	3.381818182	1.306626468
fut9	207696_at	0.0177933	4.481481481	4.486821475	12.85909091	11.71298259
fut9	214046_at	0.0041967	748.5518519	280.9466831	1062.927273	281.7116783
FXYD5	218084_x_at	0.00211653	258.1555556	73.62599005	222.6727273	77.44280336
FZD7	203706_s_at	0.00469514	123.6222222	34.40709155	180.5954545	84.2814247
G6pc3	44654_at	0.0217418	611.2185185	158.5212823	517.2	141.1779492
GAA	202812_at	0.0142527	347.7185185	83.41817288	288.7454545	69.1794542
GABARAPL1	211457_at	0.00888353	43.75555556	27.90314751	62.18636364	39.36490213
Gabbr2	209990_s_at	0.00249864	310.1259259	80.50679184	391.3681818	86.03893021
Gabra2	207014_at	0.000627091	680.8333333	323.0403964	1133.459091	512.4050023
GABRA4	208463_at	0.021021	296.6259259	103.9962854	370.5318182	71.23807427
GABRB1	207010_at	0.0176662	2574.340741	1196.623135	3518.677273	733.4017394
Gad1	205278_at	0.00221925	2835.492593	613.5768511	3351.445455	1060.592985
gal3st4	219815_at	0.0107936	196.0407407	51.96020118	164.4090909	83.10605908
GALC	204417_at	0.0144828	376.4962963	90.2503334	443.3909091	80.00918941
GALNT1	201724_s_at	0.00334571	190.2333333	71.14336014	223.6818182	57.59117522
GALNT10	207357_s_at	0.0318228	70.37037037	44.81308887	49.7	24.03497452
Galnt7	218313_s_at	0.0091284	145.3222222	47.17330025	184.6318182	55.33908794
GALR1	220821_at	0.0286052	12.93703704	14.15010596	7.386363636	8.044181302
Gamt	205354_at	0.000159712	252.4407407	82.18527034	177.5772727	53.16704074
Gas2	205848_at	0.0125069	50.72592593	21.52001917	65.99090909	23.2539379
GATA3	209603_at	0.0308835	11.3037037	9.449724517	20.35	21.63026429
GBA	210589_s_at	0.00952336	429.1666667	186.0868201	256.7363636	127.5619608
gcat	205164_at	0.00500687	122.1259259	71.07497446	54.10454545	34.40090637
GCC2	202832_at	0.000124452	606.2888889	145.3026691	803.0454545	134.8680051
gcdH	203500_at	0.00281397	249.8666667	59.55697337	196.5818182	83.01201081
gcdH	208369_s_at	0.00509274	238.9444444	56.53841671	198.7045455	50.99949092
GCH1	204224_s_at	0.00339458	132.4592593	45.7567251	188.6954545	53.48556082
GDF1	206397_x_at	0.0121789	3239.111111	1553.920841	2176.018182	1108.941723
GDI1	201864_at	0.0093167	6545.237037	2005.216722	5135.540909	1889.992316
GDI2	200009_at	0.0264151	1751.885185	494.5504833	1453.977273	309.9033243
GFAP	203540_at	0.00349542	5976.17037	2636.191613	4014.195455	1862.719416
GFM1	220903_at	0.00479821	16.54074074	11.6789508	29.38636364	17.38045688
GFPT1	202722_s_at	0.00794445	118.0481481	29.54499008	139.9863636	35.95165134
Ggct	215380_s_at	0.0206484	450.5814815	165.485219	507.9818182	140.6409702
GGNBP2	218079_s_at	0.0208108	548.5962963	170.0819994	682.8863636	151.7741659
GGT5	205582_s_at	0.0280582	67.52962963	37.70120193	45.19090909	26.32246748

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GHR	205498_at	0.0127568	51.21111111	18.83442702	69.15454545	20.10952694
GIMAP5	218805_at	0.00337524	200.8592593	69.03954975	152.7363636	43.0540142
GIMAP5	64064_at	0.000501391	298.5074074	70.90142087	251.7772727	76.99774846
GIMAP6	219777_at	0.0115532	58.88148148	26.20242263	41.69090909	23.2202069
GIPC1	207525_s_at	0.017336	555.1925926	136.6009768	453.0272727	151.0874587
GIT1	218030_at	0.032881	417.2851852	165.2709493	340.7590909	131.7192673
GIT2	209876_at	0.0028877	28.61481481	31.99599378	78.06818182	58.03008568
GK3P	217167_x_at	0.00840891	17.22222222	11.15607228	32.47727273	20.07737252
Glb1	201576_s_at	0.0138995	289.7666667	86.18179801	259.3727273	38.59746083
GLB1L2	213713_s_at	0.0139944	206.6111111	72.81805743	166.25	39.23415361
GLRB	205280_at	0.0321947	339.7740741	120.5282112	421.1	163.6348636
glrx3	207506_at	0.0104842	84.52222222	33.99842002	67.24090909	25.93650964
GLS	203159_at	0.00265337	1492.885185	447.4839307	1842.818182	442.3200809
GLS	203157_s_at	0.0236182	260.6814815	130.0900192	355.55	139.4312862
GLT8D2	221447_s_at	0.0193948	107.7259259	31.13708638	123.2227273	24.5884009
gm2a	35820_at	0.0260851	194.7	83.02576523	130.9136364	73.35386052
gmfb	202544_at	0.00703704	1291.311111	287.2368954	1583.936364	365.9732836
gmpr	204187_at	0.00416322	165.8888889	81.21433339	122.5	49.06162306
GNAO1	204762_s_at	0.0137807	1091.655556	295.5865204	1411.909091	501.2483596
GOLGA6L5	213212_x_at	0.0119061	97.46296296	34.50770425	135.8772727	50.22007692
GOLGA8A	208798_x_at	0.00211953	445.6111111	226.4980002	677.4454545	268.0214361
GOSR2	210009_s_at	0.0272651	91.8	45.32367356	61.56363636	31.42620298
GPFR	222227_at	0.00526218	21.89259259	13.10824538	35.37727273	18.96791606
GPHN	215578_at	0.01361	44.57407407	24.02613309	65.46818182	21.51790808
Gpld1	215554_at	0.0119185	22.65185185	15.33320606	38.75	17.45562401
GPR135	211659_at	0.0284498	12.98148148	9.654494252	9.540909091	5.21304765
GPR161	206972_s_at	0.0312942	11.76296296	13.21462326	22.25	19.75157016
GPR161	214104_at	0.0278322	94.01481481	54.49361786	80.58181818	44.42373493
GPR172A	222155_s_at	0.0267674	56.05555556	34.85288128	35.14545455	32.19103287
GPR32	221469_at	0.000210545	39.12962963	23.46960088	65.49090909	41.26623097
GPR44	206361_at	0.00636689	131.0111111	44.78645342	96.93636364	24.51109652
GPR88	220313_at	0.019194	2165.559259	1161.468295	2746.504545	1172.884193
GPRASP1	204793_at	0.00206305	1427.088889	342.7734252	1703.663636	343.5487677
Gprc5a	203108_at	0.027323	10.1037037	3.775577539	13.45	7.508772647
GPS1	217782_s_at	0.00326112	304.262963	101.6761834	238.9045455	56.74334429
GPX1	200736_s_at	0.000737143	1135.981481	440.7706678	785.8590909	258.6469641
GPX4	201106_at	0.014395	3233.688889	1194.703523	2623.027273	718.1097729
Grb14	206204_at	0.0316425	38.01111111	20.14895174	32.85	15.62070512
grem2	220794_at	0.0269003	150.237037	53.08230292	177.6090909	49.80238959
GRIA1	209793_at	0.0159211	475.462963	121.8759494	568.4681818	171.8538454

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GRIA2	205358_at	0.000990271	2855.959259	1135.297169	4014.290909	1071.269333
GRM3	205814_at	0.0129243	1286.711111	429.3276222	1487.495455	371.292428
Grm5	214217_at	0.000219711	418.5740741	146.6915959	670.9727273	246.8708071
grn	211284_s_at	0.0119632	152.1851852	40.56364139	112.2272727	46.6151537
GRPEL1	212432_at	0.0160403	231.662963	59.31869694	187.4863636	61.25002076
Grsf1	221917_s_at	0.0310719	89.62962963	20.50628074	106.0363636	31.83067621
GSDMB	219233_s_at	0.0281452	76.78148148	58.65218887	113.9590909	46.10685993
GSTM5	205752_s_at	0.0131218	513.8148148	250.251968	423.5636364	172.9668687
GSTO1	201470_at	0.00897318	3017.677778	849.0169679	2229.081818	560.5820272
GSTP1	200824_at	0.0163644	675.3592593	157.4980446	579.0545455	145.4657339
GTF2F1	202355_s_at	0.0297691	347.1592593	64.95807085	273.8454545	88.94638689
gtf2h2	215470_at	0.00626298	40.84074074	26.72842421	54.86363636	21.29013958
GTF3C1	202320_at	0.0204332	537.8407407	151.2685265	461.4681818	103.9080609
GTPBP1	205274_at	0.0315531	17.05925926	9.154496972	14.27272727	7.72264338
GUK1	200075_s_at	0.0191364	1651.57037	465.3758364	1406.318182	387.2253468
GYG1	211275_s_at	0.00354765	1038.9	242.6478582	805.4045455	142.5499694
GYPB	216833_x_at	0.0028565	91.04074074	35.46016464	77.80909091	24.88380443
GYPB	216398_at	0.0270289	127.9888889	39.04628746	171.1636364	83.09550183
H2afx	205436_s_at	0.0248925	690.0074074	147.8270245	593.6954545	116.3641758
H2AFY	220375_s_at	0.0183627	180.4	58.97047501	202.5681818	69.11108647
h3f3a	209069_s_at	0.02523	1815.8	597.2497757	1566.236364	467.0539456
H3f3b	211997_x_at	0.0186929	3480.848148	1220.016587	2975.840909	808.8116066
HADHA	208630_at	0.00605163	431.3259259	93.21266253	342.5636364	99.46269722
hbd	206834_at	0.0283952	98.26666667	60.99435661	82.55	41.46670207
HBG1	204848_x_at	0.0197624	75.47037037	100.1155518	56.70909091	83.44184122
HDAC5	202455_at	0.00291869	363.9814815	84.16721926	301.0045455	62.87764746
HDGFRP3	209524_at	0.00333559	473.2259259	94.10016591	619.6863636	170.7648182
HDGFRP3	209526_s_at	0.0100144	267.937037	108.512506	404.7818182	200.9089219
HEATR6	65493_at	0.0220293	139.9481481	45.17081572	115.3863636	24.34643409
helz	203674_at	0.0275552	278.6296296	72.5336835	337.65	76.56288265
hemK1	218620_s_at	0.00778203	46.41851852	36.08610469	17.84545455	16.3471485
HERC1	218306_s_at	0.00361079	489.7666667	125.8405034	615.7	171.7740515
HERC2	217902_s_at	0.00244171	371.3185185	85.86702616	436.4727273	86.29856911
HERPUD1	217168_s_at	0.0189813	669.6666667	214.1755732	539.1727273	146.8349517
hes1	203394_s_at	0.0259964	84.9962963	21.64971987	123.0727273	58.23111737
hexA	201765_s_at	0.00500222	339.0148148	105.4169951	237.1227273	97.91658711
HFE	211863_x_at	0.011744	119.7333333	34.87866882	97.53181818	41.57750521
HFE	206086_x_at	0.0277876	107.8444444	41.04264511	95.42727273	45.34461885
hgd	214307_at	0.00273177	29.35925926	16.35364601	49.53181818	27.93547644
HIRIP3	204504_s_at	0.0203012	242.037037	67.16510168	184.4045455	65.60035915

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
HIST2H2AA3	214290_s_at	0.0184996	232.1296296	74.36182755	179.8363636	66.21718627
hivep2	212641_at	0.0287601	324.4703704	130.8503544	376.0590909	122.8481395
HLA-A	213932_x_at	0.00326315	3722.62963	1044.313932	2909.404545	961.9141321
HLA-B	209140_x_at	0.00570526	1818.503704	789.7906064	1344.236364	412.2331801
HLA-B	216526_x_at	0.00187327	2597.985185	883.7499123	1909.459091	629.9224666
HLA-B	208729_x_at	0.0282133	585.0555556	328.4003108	456.1636364	144.6752901
hla-drb1	204670_x_at	0.0251224	549.8148148	234.4456386	459.5818182	155.455811
HLA-DRB3	221491_x_at	0.0224369	47.52962963	18.7035335	55.50909091	21.95111255
HLA-DRB4	208306_x_at	0.0101052	527.5259259	292.5040468	389.6636364	128.0666216
HLA-DRB4	209312_x_at	0.0102727	497.6592593	232.9229408	367.4590909	108.31935
HLA-DRB6	217362_x_at	0.0223799	204.5666667	54.10280812	180.9727273	86.00671171
HLA-E	200904_at	0.000590518	303.7666667	84.25516191	220.5409091	86.06249479
HLA-G	211528_x_at	0.0048467	966.6518519	248.3447238	845.5727273	230.9652482
HLA-G	211530_x_at	0.00923944	230.3	122.532203	181.1727273	77.81568689
HLF	204753_s_at	0.0118303	348.4296296	86.32828583	421.7363636	82.46024465
HLF	204754_at	0.00319617	352.2333333	71.38232921	407.2227273	80.2555735
hlff	202983_at	0.00948244	356.0518519	116.0353009	470.8545455	110.3889346
HMGB1	216508_x_at	0.0203591	550.6518519	300.7983446	409.0636364	126.7695417
HMGB3	203744_at	0.0220023	336.9148148	86.7688162	386.0363636	57.77630545
hmgcl	202772_at	0.0171085	396.862963	78.75628008	330.7818182	94.02389583
HMGCR	202540_s_at	0.0263613	430.9814815	133.310436	487.8727273	161.8147565
HMGNI	200944_s_at	0.0191426	724.2962963	269.8003243	906.9	320.130042
HMGNI	208668_x_at	0.0194	2889.748148	876.872624	2505.531818	569.8210834
HMGNI	221238_at	0.00847221	60.22592593	22.25515658	93.06363636	51.36538157
HMGNI	221606_s_at	0.0119107	41.41851852	20.00282744	58.05454545	19.57719099
Hmox2	218120_s_at	0.0304017	583.4444444	221.6052629	466.2090909	161.3320117
HNRNPA1	221919_at	0.0132352	77.21481481	37.91471912	113.9136364	40.77967859
Hnrnpa3	211929_at	0.00388334	881.6814815	318.0300482	1159.963636	427.7194269
HNRNPD	213359_at	0.00658296	66.98518519	41.88843886	116.8181818	59.83028884
HNRNPD	212454_x_at	0.00477907	812.4851852	297.9686918	1073.963636	255.8071512
HOMER1	213793_s_at	0.0210738	732.0481481	313.7184681	855.1818182	194.5966124
HOMER3	204647_at	0.0133867	226.4444444	111.27818	162.6	57.51185385
HPRT1	202854_at	0.0121996	884.9296296	331.2695647	1116.663636	390.2054752
HS1BP3	219020_at	0.00647765	263.0407407	51.95669987	218.1045455	45.41150974
Hs2st1	203284_s_at	0.00751992	314.6111111	75.48174172	395.3409091	82.97309753
Hs2st1	203285_s_at	0.0023462	182.4925926	50.08398275	231.6181818	55.08006844
HSD17B10	202282_at	0.000997461	665.8	167.6867111	507.3181818	140.5874161
HSD17B8	213540_at	0.0197403	258.7444444	68.40329127	206.5681818	39.63737277
hsf1	202344_at	0.000117778	151.0777778	45.16132053	104.4454545	41.49986491
hsf2	211220_s_at	0.0135346	22.9037037	12.2883147	31.2	13.46052429

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HSPA4	208814_at	0.0165234	266.662963	85.55640581	363.1590909	133.7098374
HSPA4	211015_s_at	0.00442018	82.73333333	28.66082827	64.23181818	27.00046536
hspc159	219998_at	0.0205364	82.3037037	62.43708514	56.99545455	38.85621207
htatsf1	202602_s_at	0.0145384	479.362963	164.7065576	571.5272727	181.9072505
HTR1D	207368_at	0.0317143	28.61111111	24.57799725	20.36363636	14.35915323
HUS1	204884_s_at	0.0167035	22.52592593	12.01750622	32.60454545	23.21570645
HYAL2	206855_s_at	0.0274001	167.9444444	53.36484246	149.7318182	32.75416929
icmt	201611_s_at	0.00313976	306.0296296	90.68471933	386.35	81.55472454
ICOSLG	213450_s_at	0.0271457	151.262963	58.71829192	109.3727273	50.76023173
IDI1	208881_x_at	0.0263114	604.7555556	215.79624	696.5772727	283.222924
ids	202439_s_at	0.028722	656.9888889	287.2501059	950.6772727	329.3883176
ldua	205059_s_at	0.0249751	120.4074074	49.38202667	149.0681818	51.9758679
lfitm1	201601_x_at	0.00875867	412.7555556	165.089473	326.1727273	89.77636332
lfitm3	212203_x_at	0.0103614	1159.085185	559.7684815	865.6272727	365.264309
IFT74	61732_r_at	0.0332683	11.82962963	7.672318615	14.97272727	8.296366492
IGBP1	202105_at	0.00368875	537.4296296	97.96637105	459.3545455	91.18195168
Igf2r	201393_s_at	0.0291158	99.14074074	40.37580444	122.85	39.38558777
IGFBP5	211958_at	0.0233038	110.8148148	26.45625858	93.98181818	27.74002843
IGFBP6	203851_at	0.00101843	387.5259259	101.6680254	301.9318182	75.04867237
IGHM	217035_at	0.00437539	94.92962963	72.21507841	55.51363636	40.59999174
Igkc	221671_x_at	0.00619612	31.48888889	11.03791833	26.61363636	8.902770861
IGLJ3	211881_x_at	0.0271333	47.9	23.38924802	41.32272727	24.00698176
igsf3	202421_at	0.00795947	316.0185185	79.8389631	381.3954545	74.83960294
IHH	215420_at	0.0210619	57.48518519	29.18583302	48.28636364	38.13731201
IL13RA1	211612_s_at	0.0257462	76.0962963	21.1014123	67.86818182	30.31011754
IL16	209827_s_at	0.0298089	148.9	35.70380286	137.1227273	66.46210472
IL4	207538_at	0.007542	24.46296296	18.81442058	18.22272727	17.91264336
IL4	207539_s_at	0.00682171	12.43333333	11.86235156	5.313636364	4.982378038
ILVBL	210624_s_at	0.0189969	592.6703704	102.6506915	484.9590909	148.74491
ILVBL	216270_at	0.0177559	7.459259259	4.386715896	5.722727273	2.042624786
IMMP2L	216564_at	0.00304948	35.27037037	26.5023049	20.25909091	12.10181644
IMP4	212411_at	0.0261526	594.4518519	130.9656601	482.7045455	128.5527073
impact	218637_at	0.0171807	126.8259259	43.69067488	167.8045455	53.01031775
INADL	214705_at	0.0184184	8.274074074	9.129099399	17.04545455	12.34730459
INPP4A	204553_x_at	0.0109584	77.27037037	49.025204	118.3954545	47.83795542
INPP4A	208363_s_at	0.00648973	93.69259259	37.24080605	140.9909091	58.04279135
INPP4A	204552_at	0.0271398	296.7666667	128.9235522	387.75	167.2932747
Insig2	209566_at	0.0040675	105.8074074	40.20373046	141.8227273	43.68887765
INS-IGF2	202409_at	0.0174263	139.3296296	45.80039314	165.3136364	53.49340231
INS-IGF2	210881_s_at	0.013571	9.47037037	3.061524861	12.75909091	6.184285699

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INTS1	212212_s_at	0.0150001	363.7222222	154.6810921	257.6363636	98.67386659
IP6K1	212439_at	0.0189474	712.0888889	212.7121825	592.8636364	108.0247659
IPO5	211954_s_at	0.0230818	388.7777778	67.5859358	324.8681818	68.33085747
IPO7	200994_at	0.000282877	429.3185185	91.52573844	615.1545455	168.1292069
IPO7	200995_at	0.00803399	342.137037	70.71272407	411.2227273	95.11991395
Ipo9	213785_at	0.00302291	163.6	76.26741415	209.9090909	59.07348055
IQCB1	211707_s_at	0.015329	119.6333333	32.65982006	153.5863636	44.96565139
Iqcg	221185_s_at	0.0291493	106.5	26.23108843	128.9136364	37.25709003
IRF8	204057_at	0.0015438	130.037037	54.96593454	85.95909091	61.24000139
irs2	209185_s_at	0.00240925	1262.277778	335.4141875	1622.159091	435.9666159
ISOC1	218170_at	0.0159498	233.8222222	67.66758873	297.2363636	74.36035519
isoc2	218893_at	0.0327719	293.9703704	81.53457886	231.0909091	74.2787729
ITGA3	201474_s_at	0.0235581	99.72222222	35.38328955	70.34090909	36.63101287
Itgav	202351_at	0.0240002	868.062963	251.4527974	1081.95	314.0590311
ITGB1BP2	219829_at	0.0286135	8.67037037	3.536275182	13.03636364	8.614580412
ITGB2	202803_s_at	0.0328581	173.237037	66.34696763	143.6	35.00391815
itih5	219064_at	0.0144518	261.1296296	72.89229048	197.1681818	58.62772289
Itpkb	203723_at	0.0260256	673.8074074	321.7699978	549.2090909	225.2387832
ITPR1	203710_at	0.012853	910.5777778	326.6960118	1091.35	357.077969
ITSN1	209297_at	0.0186173	159.8259259	94.17645301	241.3772727	106.3338047
IVNS1ABP	201362_at	0.0301801	476.9333333	222.656448	509.6727273	215.6995004
Jak2	205842_s_at	0.0224333	77.37777778	24.25146044	100.5772727	31.97801226
JMJD1C	221763_at	0.0088146	124.9148148	52.92389822	200.8181818	95.26455712
KAL1	205206_at	0.0179746	507.9851852	179.0595533	858.4590909	485.8238704
kat5	214258_x_at	0.0277607	559.8851852	184.5461245	464.1681818	155.9860323
KCNB1	211006_s_at	0.0142768	405.9703704	129.4818277	505.7090909	132.2100598
KCND2	207103_at	0.00883437	252.4222222	80.94383776	312.05	115.4295776
Kcnd3	213832_at	0.00284012	534.7222222	183.9606215	749.9772727	204.9635599
KCNE1L	220010_at	0.0122423	96.29259259	46.30122881	57.09090909	37.89560735
KCNJ15	211806_s_at	0.0256682	177.2	55.53763797	166.3181818	73.52385189
KCNK1	204678_s_at	0.0207278	320.4185185	84.83515707	366.7772727	132.51719
KCNQ1	204486_at	0.0306919	7.351851852	4.73346274	12.74090909	13.00365
kctd12	212192_at	0.0094585	815.7666667	282.3498852	1112.895455	292.6525446
Khdrbs1	201488_x_at	0.0150436	586.7518519	96.90777285	700.3863636	173.0497074
Khk	211028_s_at	0.00379706	186.8259259	79.57809223	114.9727273	39.5974047
kiaa0174	200851_s_at	0.00387288	944.9851852	123.3952988	773.7636364	179.3613181
kiaa0415	209913_x_at	0.0292205	96.42962963	38.97766436	81.16363636	33.04378834
KIAA0427	204303_s_at	0.0303099	378.7222222	136.0939673	299.1318182	112.6080704
KIAA0564	214231_s_at	0.00558786	28.74814815	15.8142431	37.50454545	11.8404262
KIAA0564	212946_at	0.0230498	244.6925926	51.78072054	345.5409091	149.3799172

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KIAA0652	203364_s_at	0.0256416	525.6851852	133.6594458	452.9363636	71.8557586
KIAA0753	204711_at	0.0186358	252.6888889	93.02255861	319.4909091	61.46632767
KIAA0754	215268_at	0.00992789	30.84814815	26.23654777	53.62272727	26.04942065
KIAA0776	212633_at	0.0311625	207.3814815	54.40250303	268.6090909	82.94421481
kiaa0907	202220_at	0.00855608	446.2222222	91.64666821	550.5227273	96.34439184
KIAA0913	214867_at	0.00490353	46.34444444	20.57714067	81.76363636	40.75269837
KIAA0947	209654_at	0.0108901	336.2296296	85.7139869	392.6727273	78.57015174
KIAA1012	207305_s_at	0.00365688	734.0037037	133.7040316	900.5909091	205.4951996
KIAA1109	212779_at	0.0325398	483.5740741	132.566963	611.9272727	192.560299
KIAA1467	213234_at	0.0129327	514.162963	104.4933827	592.8727273	126.5726036
KIDINS220	212163_at	0.00101599	622.2111111	225.3427327	832.0227273	197.3869657
KIF16B	219570_at	0.00322179	71.7962963	22.6637033	90.31818182	20.06483862
KIF25	207682_s_at	0.0167171	12.9	11.44700162	20.95	14.42497008
Kif3a	213623_at	0.0260322	272.8777778	121.0776907	378.5181818	175.5841642
KIF5C	203129_s_at	0.0119589	812.4740741	286.4850481	962.9772727	225.2714678
KIF5C	203130_s_at	0.00158561	3611.025926	1495.561571	4342.5	1217.712756
KIT	205051_s_at	0.00331124	264.5407407	107.8333624	371.7954545	131.059156
kif8	219930_at	0.0257631	17.7962963	15.19090015	11.68181818	6.628555568
KLHL3	221221_s_at	0.0093163	513.2481481	171.0079943	579.4181818	115.0681439
Klhl35	214208_at	0.0109369	14.97407407	6.991015806	24.38636364	18.68837926
KLRD1	207795_s_at	0.00796495	24.4037037	14.38921823	37.26818182	25.23203531
kpna3	221502_at	0.000634535	624.862963	126.4675731	833.1454545	197.8440818
Kras	204009_s_at	3.55599E-05	556.6037037	159.5958923	755.5181818	162.5478146
Kras	214352_s_at	0.00249354	901.5259259	299.0080737	1169.55	287.9096663
KRR1	203202_at	0.0267319	248.8481481	142.2642838	302.6363636	94.64657338
krt24	220267_at	0.0333049	40.65925926	16.26871134	37	24.10249938
lamb2	216264_s_at	0.0194587	211.5851852	49.87521123	169.3954545	45.51457618
LAMC3	219407_s_at	0.0305093	104.5851852	35.57520424	81.15454545	51.91058913
lamp1	201553_s_at	0.0324092	5897.374074	2892.819965	4138.259091	1621.14995
LAPTM5	201721_s_at	0.0119984	738.9	454.2946172	490.8954545	194.4140047
LASS4	218922_s_at	0.00673474	116.4814815	63.51044152	62.65	49.24801906
LASS6	212442_s_at	0.0110142	576.2444444	164.9074667	644.4090909	152.7681028
LAT2	221581_s_at	0.00682436	78.42592593	40.87693155	47.75454545	26.67113166
Lbx1	208380_at	0.0197061	3.422222222	2.135115442	2.95	1.865667249
Ldlr	202067_s_at	0.0259326	7.703703704	2.583748243	9.936363636	5.393695213
LEMD3	218604_at	0.0122762	397.6481481	85.90959636	504.4181818	148.364996
LEPROTL1	202594_at	0.00481491	747.7518519	126.0911708	869.1136364	184.846068
LGALS1	201105_at	0.00545535	1245.3	606.7922341	891.8181818	633.7377132
Igi1	206349_at	0.00254855	840.6666667	275.9293945	1108.018182	263.4899486
Lhb	214471_x_at	0.0243642	179.0888889	103.2794206	220.4409091	76.51139759

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LILRA1	207872_s_at	0.0198435	37.16666667	24.52577922	28.05909091	22.08077507
LIN37	213526_s_at	0.00466969	217.1703704	55.04317057	172.0545455	43.43845923
Lin7b	219760_at	0.0173073	600.237037	172.1562509	448.3136364	165.3201895
LIPF	206334_at	0.0318756	26.83703704	23.07087988	20.51818182	14.83745699
Llgl1	206123_at	0.0207515	60.76296296	35.80676932	39.74545455	26.62082477
Lman2	200805_at	0.00542854	241.1185185	56.4262012	189.2	38.46610134
LMF1	46142_at	0.0155256	219.7777778	70.39680573	165.0363636	59.26300979
Imf2	31837_at	0.0285315	328.4888889	70.19405702	274.9318182	92.42185572
Imna	212086_x_at	0.00784913	248.0074074	84.59792653	214.2454545	81.71499092
LMNB1	203276_at	0.0268559	33.39259259	22.58832111	49.64545455	25.73168747
LMO3	204424_s_at	0.0162162	5190.7	1711.256288	5741.604545	1479.981905
Lmo4	209205_s_at	0.00911317	515.5703704	190.2001311	648.2863636	234.8628116
LOC100127998	220405_at	0.0278293	219.8148148	96.8028079	276.7318182	78.45233546
LOC100128836	213356_x_at	0.0118404	6488.388889	1530.254556	6877.804545	1623.819648
LOC100130401	220612_at	0.026202	92.2	29.04390576	120.6681818	44.24915804
LOC220594	213510_x_at	0.00229422	434.6037037	121.4545768	626.7363636	205.9434054
LOC257152	215302_at	0.0133518	53.4962963	28.88997007	50.56363636	22.08474038
LOC284244	214162_at	0.00531684	24.55185185	18.356038	38.23181818	22.73963157
LOC441347	214949_at	0.00350549	178.5481481	59.0990913	250.7818182	96.23411254
LOC442497	200924_s_at	0.000546145	354.7185185	103.3078485	286.2954545	75.48125265
lonp1	209017_s_at	0.0103724	618.7333333	159.4331859	477.1136364	188.8097109
LONP2	221834_at	0.0225909	270.7888889	118.7326581	366.2772727	148.287205
Lpcat3	202793_at	0.000480101	31.32592593	15.41075031	18.37272727	8.345468221
LPHN2	206953_s_at	0.000531591	132.8592593	32.08038293	189.4136364	47.41348307
Lpl	203548_s_at	0.0286321	872.4111111	366.5692603	1218.795455	707.1670763
Lpl	203549_s_at	0.0250384	2044.051852	1166.239717	2510.586364	1028.302077
Lppr1	219732_at	0.000628431	884.8444444	208.5927894	1182.136364	336.7307933
LRCH4	90610_at	0.0151351	277.8111111	102.1092376	230.25	76.84822859
LRP12	220253_s_at	0.0237214	59.07777778	25.10034222	105.2863636	76.16299749
LRP6	205606_at	0.0091809	102.0074074	67.22042344	183.4590909	95.39456238
LRP8	205282_at	0.0130056	106.4703704	25.80531869	140.6818182	39.69831034
lrpprc	211615_s_at	0.00769137	608.1666667	128.3467629	688.2772727	199.7121284
LRRC49	219338_s_at	0.0322348	369.1111111	152.9664175	420.1363636	110.8188679
LRRC8B	212978_at	0.00445457	271.7740741	57.28818909	317.6272727	66.43715385
LRRC8B	212976_at	0.0199415	176.3185185	72.85890494	204.1272727	76.61589529
LRRN2	216164_at	0.0153405	178.9592593	39.32460826	152.1	69.36843663
lrm3	209840_s_at	0.00413842	600.762963	177.4070204	772.9681818	162.8376942
lrm3	209841_s_at	0.0101944	994.5814815	260.5337289	1274.986364	275.5670367
Lrrtm2	206408_at	0.00010373	836.1185185	345.4680694	1215.345455	331.1292033
LRRTM4	220345_at	0.00783258	89.15925926	27.99362921	123.1818182	36.62232778

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Ism14a	222099_s_at	0.0149876	401.9740741	101.4200579	444.3727273	66.69545699
LSM2	209449_at	0.00187465	208.5037037	69.18854108	177.9318182	42.69165622
LSM4	202736_s_at	0.0141128	449.6333333	221.5750281	346.8590909	139.8615494
LSM4	202737_s_at	0.00306566	946.0259259	241.6065088	727.9090909	227.5136478
Ism7	204559_s_at	0.0236497	504.4814815	118.814118	429.8227273	113.3309227
Isr	208190_s_at	0.00353717	32.91111111	23.05185348	14.72272727	11.32380265
LSS	211018_at	0.0184412	49.43703704	20.17022078	35.16818182	21.93875428
LTB4R	216388_s_at	0.0304477	44.66666667	35.19164018	68.94545455	37.61387443
LTF	202018_s_at	0.0011797	11.14444444	4.707141329	9.15	4.672487866
LUZP1	221831_at	0.0139487	176.1481481	84.41863798	225.2681818	76.15356282
Luzp2	215323_at	0.0194863	92.08888889	48.53352793	151.7954545	75.39088916
LY96	206584_at	0.0269219	62.79259259	36.07197853	52.40909091	34.00425616
LYN	210754_s_at	0.00387816	86.93333333	26.05035065	72.90909091	30.51026227
LYN	202625_at	0.0299683	42.44074074	22.4132217	35.05	14.78412115
LYPD3	204952_at	0.00181451	27.18518519	13.33081173	21.25	6.771772645
LYST	203518_at	0.00783448	158.5851852	52.07995852	220.0181818	82.56357802
LYVE1	219059_s_at	0.0186247	73.90740741	49.28148292	46.68181818	38.98938361
Izts1	221722_x_at	0.0138174	7.440740741	5.876763844	5.690909091	3.703011527
MAD1L1	204857_at	0.00144244	138.9185185	71.45123693	91.05	40.00798432
Mag	216617_s_at	0.0253368	427.2925926	293.8231806	243.6545455	150.0109511
MALT1	208309_s_at	0.00790049	12.52222222	9.032221523	8.436363636	4.013019936
MAMLD1	205088_at	0.000305986	198.0444444	39.80738561	251.5681818	38.87725968
MAN1A1	221760_at	0.00225008	664.9037037	253.0865092	978.4727273	344.4956606
MAN1A2	217922_at	0.000109243	739.7851852	245.9607109	1028.190909	189.3073915
Man1b1	65884_at	0.00115524	298.1592593	67.98185991	230.1045455	55.59706636
Man1b1	218636_s_at	0.0321028	272.9259259	114.1268646	187.7181818	75.21334504
MAP2K4	203266_s_at	0.00289262	445.2814815	112.5375973	547.2318182	119.7569896
MAP3K7	206853_s_at	0.0183143	291.9444444	81.61268441	365.9454545	117.8577744
MAP4	243_g_at	0.00501431	769.3703704	317.5963304	524.0909091	140.4534728
MAP4	212567_s_at	0.0267481	743.3814815	307.7136544	558.8772727	229.9417544
MAP4	33850_at	0.0213182	589.1296296	263.9529384	415.0909091	174.8443087
map4k3	218311_at	0.028282	84.14074074	28.4192007	115.5227273	37.63349486
MAPK12	206106_at	0.0176649	193.5962963	60.81327968	152.4227273	49.13955764
MAPK1IP1L	212643_at	0.0134377	1193.244444	311.402646	1412.327273	276.5902542
MAPK4	204707_s_at	0.0162311	56.58518519	26.34678062	49.72727273	23.32266794
MAPKAPK5	212871_at	0.0177362	87.97037037	33.92718237	101.1909091	28.06287005
MARCKS	201670_s_at	0.00652283	623.1444444	202.1620073	876.0545455	268.5450813
MARK1	221047_s_at	0.00268172	217.0481481	39.43224345	273.8863636	74.05919959
masp1	213749_at	0.00759258	63.33703704	48.24689028	39.83181818	31.99942539
mat1a	205813_s_at	0.0208354	11.72222222	4.213379179	9.827272727	4.584153016

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matK	206267_s_at	0.00775356	254.4740741	70.15587366	193.6954545	56.90930527
MATR3	200626_s_at	0.0270047	1561.840741	559.6755862	1947.090909	540.1925591
MAX	209332_s_at	0.0283614	1098.018519	200.8823039	965.3545455	164.0095547
MBD3	41160_at	0.0109025	909.2185185	369.0907935	679.9090909	143.1866711
Mbnl1	201152_s_at	0.00438623	564.1444444	155.2027665	803.1454545	307.1236244
Mbnl1	201153_s_at	0.0129767	465.3296296	131.9101	618.9772727	168.4969971
Mboat2	213288_at	0.0126961	381.4666667	110.2853676	483.2227273	110.0845603
MBP	216567_at	0.021563	5.266666667	2.561399858	4.1	1.304570719
MCM3APAS	220459_at	0.0186614	68.9037037	29.48066487	91.05454545	32.73976361
Mcm5	216237_s_at	0.00408545	45.34814815	32.73758567	15.57727273	6.672896981
mcoln1	219952_s_at	0.00743378	128.9111111	87.29707605	78.24090909	54.25168559
MCTP1	220122_at	0.00133426	246.4259259	129.1777684	651.3772727	535.0833108
MCTS1	218163_at	0.0312418	401.2074074	100.786606	426.5545455	138.8589134
Mdk	209035_at	0.0249072	71.34074074	30.57333251	56.46818182	24.18687929
ME1	204059_s_at	0.0254257	501.2444444	95.98351354	640.2818182	188.9308557
mecp2	202617_s_at	0.00928481	149.8111111	54.33995791	195.5545455	48.9134194
MED13	201986_at	0.0316463	232.937037	53.7435946	298.2136364	88.33284616
Med13l	212209_at	0.0123103	250.837037	92.49649951	329.7681818	104.7967802
med18	221650_s_at	0.0102739	98.73333333	43.02632468	74.99090909	40.57849429
MED23	218846_at	0.0319116	143.7851852	38.29033523	166.8227273	47.56077748
med4	217843_s_at	0.0232938	97.52222222	29.90257685	128.5818182	34.48982785
Med7	204349_at	0.0185169	146.8666667	68.98584024	97.68181818	34.02812053
MEF2A	212535_at	0.00739622	618.1962963	133.2180788	754.0909091	181.4328314
MEF2C	209199_s_at	0.015413	241.8222222	70.6084781	314.3954545	100.6226448
MEF2C	209200_at	0.000759155	273.4037037	91.48482212	380.2863636	99.35132609
Meis2	207480_s_at	0.00825626	2407.488889	752.9868194	2983.709091	627.3177838
mest	202016_at	0.0211948	354.6777778	100.5729713	452.4681818	106.3325349
metap2	213899_at	0.00106687	39.23703704	14.67006759	56.05	17.59203689
METTL13	212407_at	0.0270682	235.8074074	45.44788161	199.2590909	38.57274709
MFNG	204153_s_at	0.020597	118.0037037	39.04658442	99.20909091	38.07518763
mfsd5	212861_at	0.0325104	286.8925926	45.55963063	260.9772727	51.03792177
MFSD6	219858_s_at	0.0313959	40.35925926	14.73050888	52.01818182	18.20459482
MGA	212945_s_at	0.00045475	69.94444444	32.57685981	110.4454545	35.89326409
MGAT4C	207447_s_at	0.00494801	55.52592593	18.19238202	83.90909091	38.03831288
MIA3	212310_at	0.0109613	268.0518519	78.49398003	341.0681818	96.07658843
MINA	213189_at	0.0270355	198.1925926	66.15773067	244.8272727	84.81595302
MKI67	212021_s_at	0.0011872	110.037037	34.75483528	81.79090909	29.4639232
MKI67	212023_s_at	0.0135367	54.4	25.85579834	36.36363636	25.06252268
MKKS	218138_at	0.027233	521.4592593	105.5668591	566.5	112.4190714
MKRN1	209845_at	0.00369483	534.0814815	154.4627663	655.5318182	171.175475

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MLLT3	204917_s_at	0.000483566	193.4888889	53.53842857	282.75	84.9403362
MLST8	220587_s_at	0.0157768	380.9	111.0358362	290.7363636	110.7723128
Mmp28	219909_at	0.00352596	86.87407407	48.35755921	58.37727273	29.97516324
Mnat1	203565_s_at	0.000137528	83.55185185	52.73736356	134.7045455	39.72786568
Moap1	212508_at	0.0196982	1936.311111	460.5236771	2100.222727	480.9296018
MOBK13	202919_at	0.00952192	630.0962963	167.2018276	829.6	271.3237655
Mocs1	211673_s_at	0.0174711	110.1962963	44.57199432	88.35909091	30.29195491
Mocs1	213181_s_at	0.0284509	51.68518519	28.28103066	37.35454545	21.12522138
MOCS2	218212_s_at	0.00349281	223.4	71.41462358	312.8181818	134.2930968
MON2	212755_at	0.00766647	16.43333333	11.31316456	26.42272727	15.71208003
mpg	203686_at	0.0294647	305.2703704	78.33139568	258.6454545	72.55557953
MPHOSPH9	215731_s_at	0.0153868	106.1	64.86673914	118.9590909	42.60048803
MPHOSPH9	221965_at	0.0015147	186.1814815	38.17299727	239.9409091	50.83824637
mpl	207550_at	0.031009	19.61481481	17.59691196	10.15909091	8.928587532
MPPE1	214071_at	0.00417736	1909.351852	554.489421	2450.686364	609.6296513
MPPED2	205413_at	0.0146102	390.9444444	116.7651862	489.2272727	155.2927594
Mpst	203524_s_at	0.00118777	387.8037037	101.5812387	275.05	98.45279144
MRM1	219967_at	0.0267418	80.06296296	24.88333004	61.05454545	28.42768147
Mrpl24	218270_at	0.001717	660.2296296	196.765518	502.85	128.5674577
mrpl28	204599_s_at	0.01228	666.937037	146.4098913	525.8181818	153.02446
Mrpl3	208787_at	0.0182792	487.9555556	180.2583559	627.8590909	184.3932177
MRPS11P1	217386_at	0.00775714	42.75555556	20.76013809	38.75909091	35.89538582
mRpS12	204331_s_at	0.00798643	284.5481481	149.2261278	213.7954545	62.32498908
mrps18a	218385_at	0.00852943	418.0925926	187.474991	282.2636364	122.4591926
MRPS2	218001_at	0.00180614	271.1962963	57.86137599	199.3954545	53.71898199
MRPS34	218112_at	0.00372163	247.5592593	77.37936646	191.1454545	58.59530883
MRPS7	217932_at	0.019728	403.8	114.8369513	336.8	108.9996898
mrto4	220688_s_at	0.0332379	282.6185185	75.99502027	218.7590909	91.65575689
msh3	210947_s_at	0.0270298	109.3481481	28.70438683	130.9318182	30.69286231
Msl1	212708_at	0.0285451	622.1148148	157.6690538	739.3772727	212.4517692
Mst4	218499_at	0.00268942	137.0814815	53.38727187	203.15	74.33103402
MT1F	210524_x_at	0.00997164	1199.933333	502.8743382	1044.290909	365.3104484
MT1F	213629_x_at	0.0101016	1720.977778	711.1488875	1492.418182	581.06632
MT1F	217165_x_at	0.0320051	1355.744444	910.7122886	1159.604545	637.5540145
MT1G	204745_x_at	0.00755937	1624.140741	699.8649278	1366.709091	558.8982673
MT1H	206461_x_at	0.00702458	2858.644444	1263.144082	2424.872727	1049.841766
MT1X	204326_x_at	0.0204046	2181.337037	1699.802108	1749.331818	1135.343001
MT1X	208581_x_at	0.0320482	3644.903704	2003.696675	3213.040909	1473.468335
MT3	205970_at	0.0127675	6353.27037	1355.519882	5140.368182	1902.231473
MTDH	212248_at	0.00129158	343.6	81.33171867	444.4318182	108.1533981

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MTF2	209705_at	0.00752646	337.9555556	96.21729148	456.6136364	138.7180673
mtg1	212767_at	0.0261828	141.9333333	54.09195874	95.06363636	46.56409352
mtmr3	202198_s_at	0.0153104	76.13333333	44.00057692	59.46818182	30.58946888
mtmr3	211507_s_at	0.0316295	20.0037037	18.08683077	15.02727273	8.274929539
Mtus2	214961_at	0.0012307	57.65925926	32.03170616	79.74090909	29.13343128
MTX2	203517_at	0.00078689	261.0962963	76.71271323	331.3954545	84.73175869
MUC4	204895_x_at	0.00362958	16.33703704	15.31713842	9.581818182	3.834509513
mudeng	218139_s_at	0.01749	356.3962963	84.17323017	462.9636364	145.5839982
MUL1	218246_at	0.00232526	251.7666667	49.78189353	202.1363636	43.85982591
mybbp1a	219098_at	0.0136317	304.8777778	62.13261458	236.6227273	65.37556651
MYBPC1	214087_s_at	0.00534914	549.6222222	249.3013782	444.7909091	159.3242633
MYBPC3	208040_s_at	0.0257052	52.62222222	28.88418962	39.22272727	19.64297843
MYCBP2	201960_s_at	0.0115605	2472.622222	1297.091594	2620.922727	914.1951094
MYCBP2	201959_s_at	0.0303808	658.4296296	205.5611734	713.7090909	175.8860966
MYF6	206372_at	0.033408	23.16666667	23.7942624	43.22272727	31.11923202
myh10	212372_at	0.00324402	1084.818519	414.2788498	1475.768182	518.0168773
MYH8	206717_at	0.0162164	29.37037037	19.21979778	19.63636364	14.15511166
MYH8	34471_at	0.0182134	21.68148148	14.92981109	37.98181818	24.63506282
MYL6B	212082_s_at	0.00205945	3893.533333	1067.590592	2744.813636	977.7425288
MYLK	202555_s_at	0.029287	303.8	102.6738376	227.1409091	78.46104074
MYO5A	204527_at	0.0245532	157.5	28.33075252	190.2227273	41.91626496
MYST4	212462_at	0.0268172	256.8296296	75.51645676	320.3954545	73.52098163
MYST4	214496_x_at	0.0258786	208.3222222	45.81430188	272.3	97.15249672
MYT1L	210016_at	0.00534352	1820.333333	697.9613688	2383.354545	662.5065892
N4BP2L1	213375_s_at	0.0108905	418.6296296	140.3895372	549.5045455	180.3930378
N4BP2L2	202259_s_at	0.0125489	156.6222222	55.3234568	206.7454545	56.06471369
NAA10	203025_at	0.00250034	379.2222222	99.53184776	275.4863636	75.96274961
naa15	219158_s_at	0.02078	116.962963	29.29685134	146.3318182	40.56124571
naa50	217745_s_at	0.0136827	382.237037	132.9906103	443.65	126.5403145
NAAA	215178_x_at	0.0323094	170.3851852	47.04757579	148.0136364	64.45145309
NACA2	222018_at	0.0305259	49.65185185	30.48462879	68.22727273	25.89624319
Nae1	202268_s_at	0.0188153	441.3851852	125.2866213	523.8227273	119.0313201
nagA	202943_s_at	0.0270023	217.2592593	45.09026212	212.0045455	72.54877819
NAMPT	217738_at	0.0123789	210.0851852	80.31135423	299.2090909	109.6734673
NANS	218189_s_at	0.0274755	272.7148148	61.4535954	212.3136364	50.15393728
NAP1L1	212967_x_at	0.0152149	2262.177778	708.9503456	2519.836364	659.3398188
NAP1L1	208752_x_at	0.0244715	2418.707407	692.020526	2648.263636	642.9279805
NAP1L2	219368_at	0.0058633	700.5851852	181.0021944	885.9	290.4456412
nap1l4	201414_s_at	0.0142833	597.9962963	161.8449055	523.5636364	76.11755661
Nars	200027_at	0.00601558	1909.4	422.4594828	2246.086364	466.7928186

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Nat9	204382_at	0.0198767	208.9111111	52.56117559	179.4727273	40.19931511
NAV3	204823_at	0.0029929	399.8444444	97.0417687	508.35	119.6141286
NBEA	221207_s_at	0.017819	628.2296296	299.3053584	739.5818182	302.8930593
Nbl1	37005_at	0.0270619	1395.014815	367.8448667	1094.227273	316.3514459
NBN	202907_s_at	0.0237531	437.6407407	110.5725006	551.5636364	141.9277299
NBPF1	213612_x_at	0.0252434	1418.181481	570.3570056	1807.604545	262.7932149
NBPF8	201103_x_at	0.00781884	1150.937037	480.9664598	1564.909091	310.5769606
Ncam1	217359_s_at	0.0252565	229.6592593	93.10660251	179.1090909	83.45512001
ncapd3	212789_at	0.00749314	58.91851852	20.75520393	75.18181818	19.63584275
ncaph2	205086_s_at	0.0261064	150.8962963	43.46716251	111.4545455	41.34085639
ncf1	214084_x_at	0.0305583	15.77777778	11.44597119	10.31818182	5.526010906
ncl	200610_s_at	0.0237478	1695.081481	535.5642941	1403.840909	438.4870956
NCOA1	209106_at	0.00278102	718.9851852	196.108174	932.2136364	279.5563378
NCOA1	210249_s_at	0.0279886	406.2407407	64.72172539	480.1454545	95.22282003
NCOA3	211352_s_at	0.000711752	6.066666667	3.218336885	12.27727273	7.093587434
NCOR1	200854_at	0.0044064	370.6592593	83.17678698	465.2272727	85.73880147
Ncr1	217088_s_at	0.0289044	17.64074074	17.22456339	11.83636364	10.18339196
ndp	206022_at	0.012708	382.1814815	104.2156567	324.2136364	66.63396314
Ndrp2	206453_s_at	0.00727242	5699.422222	1465.594389	4397.963636	1584.630018
NDRG3	221082_s_at	0.0014794	340.037037	92.29127031	259.0318182	46.75086336
Ndufa13	220864_s_at	0.0263245	4369.422222	1593.729411	3178.177273	1288.280411
Ndufb7	202839_s_at	0.00830398	597.6518519	213.8378616	414.4181818	171.7268724
NDUFS6	203606_at	0.0316107	1738.066667	614.8066306	1228.795455	492.9918733
NDUFS7	211752_s_at	0.0200295	1020.837037	337.5049357	773.2681818	212.0876108
Ndufs8	203190_at	0.00426607	1702.155556	519.3160475	1221.809091	349.0025991
Ndufv1	208714_at	0.00704187	2303.818519	665.9827966	1589.068182	581.94297
NECAB3	210720_s_at	0.00351736	303.6777778	57.11141832	263.3045455	56.99974501
NECAP2	220731_s_at	0.00267525	196.9925926	41.48733751	166.5	39.00828972
nek1	213331_s_at	0.0128023	184.7444444	50.6675312	239.6863636	76.57330316
NENF	218406_x_at	0.0248874	127.4851852	52.41102867	100.1818182	64.10873677
NETO2	218888_s_at	0.00148953	579.8037037	230.9257964	866.1909091	314.754114
Neu1	208926_at	0.0160723	191.4851852	80.96479626	155.3954545	50.07560453
NF1	212678_at	0.0214496	165.3481481	68.46779912	229.0681818	85.41454313
NFAT5	208003_s_at	0.00676358	367.9555556	111.64608	525.5772727	217.8120442
NFKBIB	214062_x_at	0.00838013	34.87407407	24.10430208	23.68181818	16.36289753
NFYB	218128_at	0.00623552	69.73703704	20.93282568	98.90454545	36.49553759
NFYB	218127_at	0.0236719	494.4555556	143.3724315	579.9227273	142.9052631
Ngfr	205858_at	0.0171769	27.69259259	19.71884936	17.23636364	9.865598983
NHP2L1	201076_at	0.0235461	1182.196296	234.2313673	884.1727273	310.9519718
nipbl	213918_s_at	0.0060853	83.84074074	37.84092473	112.3454545	27.10959639

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NKAIN1	219438_at	0.0117389	217.6259259	60.11390849	162.3863636	57.61898906
Nkiras2	222105_s_at	0.0161633	161.7185185	59.63210311	122.1545455	50.75906419
NKRF	205004_at	0.0265833	330.3518519	58.21064779	363.1636364	66.21460453
NKTR	202380_s_at	0.0284952	143.5925926	67.68729529	197.9136364	51.97939423
nlg1	205893_at	0.00132289	160.8444444	36.97237361	221.7272727	68.6637853
NLGN4X	221933_at	0.0156731	308.3888889	164.155989	501.6454545	278.0373985
NLRP2	221690_s_at	0.0188628	59.75925926	37.169914	83.54545455	48.86561482
Nme1	201268_at	0.00586983	2079.22963	533.3835738	1572.527273	404.7202869
NME7	216070_at	0.0040344	23.63333333	15.27967479	42.75454545	19.53989149
NMT1	201157_s_at	0.00950116	243.3666667	48.02858924	203.4954545	47.85937215
NMT2	215743_at	0.0140372	88.6037037	34.66784679	124.1954545	42.89695824
NMUR1	221383_at	0.00739087	14.67407407	17.59599151	9.040909091	7.131797282
noc2l	202115_s_at	0.000408836	238.4333333	38.64362819	186.9272727	52.57698376
Noc4l	218860_at	0.032703	126.6037037	58.80371836	74.94545455	51.71186405
Nol4	206045_s_at	0.000996062	98.01111111	27.88000846	130.4681818	32.05384438
NOL8	218244_at	0.00431369	93.4	46.28617504	117.0181818	43.92161455
Nomo1	221853_s_at	0.0213227	1795.381481	734.7033933	1383.431818	566.6234043
nosip	217950_at	0.00782822	691.6222222	243.1099298	463.8772727	180.7511863
NOX3	221089_at	0.0159956	7.125925926	7.967269226	4.004545455	1.780175827
NPAS2	213462_at	0.00967169	461.6777778	120.4830608	578.7136364	151.5812254
Nploc4	217796_s_at	0.0330292	513.7185185	112.3092949	442.4772727	79.52528159
NPPA	209957_s_at	0.0153401	165.1259259	59.85239275	212.1590909	103.9356424
NPRL3	214273_x_at	0.00343058	320.5259259	92.53590818	261.8090909	77.70801827
NPY	206001_at	0.00170038	1454.974074	468.0301968	1768.209091	500.3834938
Npy1r	205440_s_at	0.000981546	143.3444444	36.40422982	205.05	58.59031084
NQO2	203814_s_at	0.0225766	267.1703704	78.74450806	199.3363636	98.13652563
NR1D2	209750_at	0.00816493	288.3333333	93.36505276	417.4090909	146.1135009
NR1H3	203920_at	0.0175212	222.7777778	53.21730729	178.7681818	53.65180853
NR3C1	216321_s_at	0.0312343	561.9259259	211.0794247	636.4954545	169.3807362
NR3C2	205259_at	0.00816716	253.3111111	73.68063274	342.7681818	112.4575577
nrbf2	221803_s_at	0.0108624	50.55555556	22.8450017	65.39090909	20.0814036
NRIP1	202599_s_at	0.000996849	330.7888889	83.60516792	470.2681818	124.7130703
NRIP1	202600_s_at	0.00871199	189.4592593	65.14953367	282.7727273	105.195189
NRIP2	215104_at	0.0211284	112.9407407	65.73432109	63.34090909	42.58051935
NRXN1	209914_s_at	0.0167878	396.362963	147.2870357	493.5636364	72.17466608
Nrxn3	205795_at	0.00672653	98.89259259	61.47012361	154.8590909	76.98241394
Nrxn3	215021_s_at	0.0121773	10.92592593	5.488000378	18.61363636	11.82613311
nsfl1c	220248_x_at	0.0153713	679.5259259	236.5113131	564.2863636	152.5713238
NT5C	219214_s_at	0.00142903	99.68888889	28.1936072	80.63181818	23.96597561
nt5m	219708_at	0.0132711	103.4666667	58.01403013	70.20454545	31.68258463

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nthl1	209731_at	0.0107192	294.1925926	83.01374273	214.8136364	56.48208562
NTRK3	213960_at	2.11708E-05	764.5296296	257.242736	1046.509091	211.7424827
NTRK3	215311_at	0.00482121	1043.777778	396.3627712	1222.745455	229.1469766
NUBP2	218227_at	0.00206251	218.7555556	86.66578747	161.85	53.34984938
nudC	201173_x_at	0.000146762	1235.118519	170.9428088	958.9772727	188.5699818
nudC	210574_s_at	0.00068796	1024.066667	132.2366817	841.4772727	171.593459
NUDT11	219855_at	0.0118881	799.5851852	180.9022977	978.25	235.5635103
Nudt18	219665_at	0.00320209	176.2703704	58.48647322	122.6045455	41.30991438
NUDT3	211973_at	0.0205512	492.0592593	188.1195922	733.2227273	354.8558821
NUDT4	212181_s_at	0.0282557	512.2148148	113.7349507	582.1272727	141.7815092
NUFIP1	205136_s_at	0.00185507	185.8481481	57.0609955	242.4545455	57.21169317
NUP188	214675_at	0.0152715	43.77037037	41.88637391	21.27272727	14.58499496
nupl1	204435_at	0.0320058	210.5111111	77.52516878	256.85	90.20482381
nupr1	209230_s_at	0.00122029	285.1777778	83.76606314	211.1818182	74.81500127
oaz1	215952_s_at	0.0312106	1864.17037	818.5289722	1546.777273	635.9205266
OCA2	206498_at	0.00996736	189.6518519	73.88122157	246.2681818	92.31910697
ODC1	200790_at	0.021194	493.4296296	178.9872617	431.3181818	86.31704923
Ogt	209240_at	0.000577659	1242.733333	272.9182633	1558.063636	413.672687
Ola1	219293_s_at	0.00732211	1332.377778	252.2375717	1489.422727	285.5610233
omd	205907_s_at	0.0264777	84.85185185	47.63479958	72.42272727	44.77924617
Opa1	212213_x_at	0.000188044	879.4333333	168.8793721	1125.831818	206.7946448
Opa1	212214_at	0.00205893	483.3074074	129.8753187	625.0409091	189.2816411
Opa1	214306_at	0.00161998	578.6518519	252.6631786	700.1318182	183.0725835
OPA3	206357_at	0.0215938	33.64814815	17.00984716	45.80454545	17.00793869
OPCML	214111_at	0.00377702	551.062963	229.3900527	663.6545455	243.0211469
OR2H1	216817_s_at	0.0177537	75.25925926	45.50307056	46.89090909	25.48685766
OR5V1	221431_s_at	0.0289156	56.65925926	27.62528467	74.81818182	46.70664923
OSBPL8	212582_at	0.00149798	1502.937037	522.8920098	2122.35	600.060442
OSBPL9	218047_at	0.0203341	274.9111111	78.06486126	356.2863636	87.25632353
OSGIN1	219475_at	0.0148288	72.37407407	38.6086538	55.30909091	26.78133517
oxct1	202780_at	0.000451054	618.2259259	210.934094	798.2	224.5434182
p4hb	200656_s_at	0.0167412	294.3037037	128.0619126	258.2863636	105.5251191
p4hb	200654_at	0.0228799	1105.892593	430.2401654	975.5181818	319.2252879
PABPC1	215823_x_at	0.0301238	1265.362963	367.7423901	1634.336364	317.0318214
Pacrg	214204_at	0.0163594	180.4222222	50.02961687	225.4409091	56.91753148
paf1	202093_s_at	0.00541661	382.2111111	111.2205098	271.6681818	86.78801973
Pafah1b1	200816_s_at	0.00452016	1393.685185	451.1636107	1641.122727	470.6019711
PAFAH1B3	203228_at	0.0233705	286.9592593	128.6470851	209.0681818	94.72228775
Paip1	208051_s_at	0.0127753	466.6333333	120.0287466	592.7818182	167.2491146
Paip1	209064_x_at	0.000669377	656.5222222	171.3029555	878.4363636	194.0530721

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Pak3	214078_at	0.0134751	64.38148148	35.34816976	88.31363636	27.22181015
Pak3	214607_at	0.00219269	887.1407407	315.8005666	1123.322727	211.9575203
pak7	213990_s_at	0.00768676	142.3777778	38.50394918	184	39.51563886
paild	200897_s_at	0.0280808	429.0185185	134.5704706	587.1090909	161.9514798
PANK3	218433_at	0.0128357	128.3407407	39.40932396	170.9772727	60.06057206
PAOX	50400_at	0.0254002	127.2592593	39.77307032	100.0227273	32.55047263
PAPSS2	203058_s_at	0.0139958	101.0222222	50.02099047	74.45454545	27.83346268
PARD6A	205245_at	0.00234354	358.7333333	77.42913385	291.4272727	41.28644632
parp6	219639_x_at	0.0282237	981.0074074	121.4438678	873.3909091	92.35229086
PARVB	216253_s_at	0.00581607	50.05555556	21.9056602	36.22727273	18.92524597
PATZ1	209431_s_at	0.00558904	173.3962963	55.49718968	126.7318182	42.9532014
PATZ1	210581_x_at	0.0275097	80.05185185	34.92717005	70.56363636	37.04426625
pbrm1	220355_s_at	0.00822954	238.4148148	57.96984431	300.4681818	70.61227727
PBX1	212148_at	0.00390681	628.8259259	166.9632308	795.6818182	165.7736427
PBX1	212151_at	0.00170508	810.5148148	150.279851	994.7227273	133.537289
PCBP2	213264_at	0.0265855	69.84074074	37.08354662	48.21818182	27.07190841
PCDH1	203918_at	0.02889	77.34074074	29.60649954	51.44090909	31.88749059
PCDH9	216456_at	0.0218645	105.9962963	59.48816612	166.7136364	62.46355353
pcdha13	210674_s_at	0.00112672	365.3296296	73.46393053	473.6045455	120.1915593
PCDHB17	216355_at	0.0323034	61.65185185	27.82099885	59.58181818	27.60754963
PCDHGB6	221682_s_at	0.0233157	21.1	22.79613665	12.83636364	14.00467764
PCIF1	222045_s_at	0.0083298	47.48148148	37.80981799	25.66818182	14.06939896
PCLO	213558_at	0.00561053	1164.025926	447.7714712	1481.227273	323.3350189
pcm1	214118_x_at	0.0178852	418.4888889	144.6597529	516.6136364	119.2403587
pcm1	214937_x_at	0.0272715	370.3703704	129.1438787	444.1590909	96.27715775
pcmt2	212406_s_at	0.0173291	314.2962963	114.5178739	424.6909091	151.3906266
PCNT	203660_s_at	0.0316703	485.9074074	208.8727657	586.4909091	116.6115975
PCSK5	205559_s_at	0.0103754	32.95185185	16.12311695	44.11363636	14.55872494
PCYT2	209577_at	0.00546591	371.5851852	94.31290271	298.0954545	84.25713183
PDAP1	202290_at	0.000864111	219.4962963	65.25126277	165.1363636	59.97543581
PDE3B	222330_at	0.00185479	13.60740741	9.897044078	28.93181818	16.41095413
PDE4DIP	205872_x_at	0.00812493	577.0444444	269.806183	722.9681818	281.2508106
PDE4DIP	213388_at	0.0161011	308.1222222	111.7826439	399.8681818	105.0305551
PDE4DIP	214129_at	0.014375	161.1407407	37.31469353	136.9636364	48.15849374
Pde6a	206623_at	0.00615209	25.52962963	11.92185501	45.1	26.80007107
Pdgfb	217112_at	0.0272403	12.16666667	7.626925986	21.56818182	17.94166172
PDGFC	218718_at	0.00300091	286.4592593	56.54650407	367.3863636	95.04019348
pdgfra	203131_at	0.0123004	453.0851852	181.0089346	610.7772727	231.434946
Pdha1	200979_at	0.0261715	416.2592593	95.3354977	466.0636364	97.89734441
PDHX	203067_at	1.90714E-05	329.5592593	91.50781496	488.5954545	137.2156921

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PDIA3	208612_at	0.00809159	587.3185185	205.8843907	457.1772727	155.698206
Pdia4	208658_at	0.0287278	259.6888889	75.59043658	212.6227273	87.54733105
PDS5A	217331_at	0.0175755	59.48888889	39.13963497	83.28636364	38.45612584
pdxK	202671_s_at	0.00251715	488.3851852	112.5221917	375.1590909	113.9445172
pdxK	218019_s_at	0.0243032	2347.755556	763.6293328	1866.822727	588.2341143
Pdzd2	209493_at	0.0106524	712.5740741	270.4992416	1020.509091	340.4380468
PECI	218025_s_at	0.00377964	609.1444444	221.406779	494.9681818	129.5211304
pef1	217923_at	0.00448422	1036.585185	349.4792331	766.5954545	253.3402765
PEG10	212092_at	0.007902	444.0074074	316.1883372	878.8090909	656.5997824
PEG10	212094_at	0.0200674	2143.344444	957.7735794	2951.336364	1087.29981
PEG3	209243_s_at	0.0231055	993.2074074	561.5193578	1586.522727	968.034713
pelp1	215354_s_at	0.0104223	242.6703704	65.76923418	200.2863636	65.38190587
PES1	202212_at	0.00557398	226.3296296	96.24840784	138.0772727	62.16648869
Pex16	221604_s_at	0.00355721	316.8925926	80.19340528	245.2772727	72.70145693
Pex16	49878_at	0.000128853	1109.859259	308.1108857	839.0136364	125.85519
pex3	203969_at	0.00690227	55.18518519	41.14488195	73.18636364	41.56555689
pfkp	201037_at	0.00160472	727.8555556	193.7870071	592.5954545	136.1110978
PGAP1	213469_at	0.00512978	251.6296296	74.53540106	347.0454545	113.8057774
PGAP1	220576_at	0.00326981	94.45185185	35.15616119	143.3045455	45.62207566
Pgcp	208454_s_at	0.0186501	70.73333333	47.17870282	50.64090909	29.98246565
pgls	218387_s_at	0.00450102	419.3444444	106.8408462	312.6681818	88.96039454
PGRMC2	213227_at	0.0094906	326.2222222	62.47537566	373.6090909	92.32286468
PHACTR2	204049_s_at	0.00707955	57.06666667	23.06819322	82.15	23.97891435
Phb	200658_s_at	0.00925199	346.9259259	98.87831135	273.4590909	102.4922049
Phb	200659_s_at	0.00630919	188.7851852	51.97499919	133.4863636	52.90327468
PHF14	204525_at	0.0177606	50.0037037	16.45818668	57.27272727	13.82524199
phf20	209423_s_at	0.0255624	86.2962963	43.41071723	66.35909091	45.4878284
PHF20L1	222133_s_at	0.00939875	75.45555556	20.19562659	98.89545455	30.9097993
PHF3	217954_s_at	0.0028114	265.1666667	84.82487843	352.1818182	80.69868493
PHGDH	201397_at	0.00719635	797.7	286.5126162	605.8818182	217.8610864
phlda1	217997_at	0.0270878	433.8814815	90.02282632	513.3318182	134.9296832
PI4KB	206138_s_at	0.00357346	820.4740741	162.2102282	658.5545455	177.0295959
PIAS1	217863_at	0.00620119	215.3888889	54.42485528	288.7	83.83812066
PIAS1	217862_at	0.0212043	323.7037037	90.54264818	426.0636364	141.639773
PIAS4	212881_at	0.00711412	196.4703704	78.71695553	146.9227273	55.12671923
PICALM	212511_at	0.00130876	289.237037	89.55206542	379.5272727	119.8752216
PIGG	218652_s_at	0.0329427	356.9037037	83.94690392	407.5818182	90.63471235
Pigt	217770_at	0.0113633	545.6333333	173.6752584	377.0090909	130.3244848
PIH1D1	217872_at	0.00514305	676.6925926	143.5381454	548.0863636	114.3538214
Pik3cb	212688_at	0.0309527	643.2851852	185.6765647	674.4727273	149.0877791

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
Pikfyve	213111_at	0.0168224	205.7481481	69.45552739	269.5818182	74.0275601
PION	222150_s_at	0.007497	81.82592593	20.07741924	110.3363636	31.88730969
PION	213142_x_at	0.0332104	82.97407407	24.17765326	120.6272727	51.29987637
PITPNB	202522_at	0.00398569	1027.977778	248.8235447	1168.277273	172.4767698
pitX1	208502_s_at	0.0219056	4.492592593	3.989305504	3.090909091	0.867349049
pja2	201133_s_at	0.0206906	1109.681481	400.1176625	1514.431818	625.5883428
PKIA	204612_at	0.0106376	1209.796296	281.2274531	1471.740909	331.159935
PKP4	214874_at	0.0219974	327.1814815	64.33586174	376.3090909	128.198681
PLAGL1	209318_x_at	0.00582737	116.5222222	34.44977764	155.0909091	39.79204167
PLCB1	213222_at	0.00529849	1709.981481	694.1408874	2234.118182	933.6525359
Plcd1	205125_at	0.0243454	349.037037	105.4928767	293.5045455	116.8989775
PLCL2	213309_at	0.0055843	392.7555556	157.9510862	456.8363636	130.8015274
plekha1	219024_at	0.0259571	118.5814815	46.59380973	140.9681818	51.831305
PLEKHA5	220952_s_at	0.00704832	592.8555556	303.0597356	728.85	241.1356677
PLEKHA5	214989_x_at	0.0201931	453.5185185	205.9364167	584.9090909	211.3810099
PLEKHG3	217044_s_at	0.0130701	100.8	59.54594219	71.80909091	37.83076235
PLEKHO1	218223_s_at	0.0155666	292.6814815	88.29192853	234.6590909	79.54466645
PLIN1	205913_at	0.00401749	38.52592593	30.57254415	23.35454545	13.03985565
PLIN2	209122_at	0.00754039	150.4777778	49.30971455	117.6636364	36.47969488
PLXNA1	221538_s_at	0.0126255	99.95555556	58.45689624	139.6545455	42.61271582
Plxna2	213030_s_at	0.00287209	288.9333333	77.9092322	363.5363636	50.27829737
plxnc1	213241_at	0.000616043	178.1222222	48.45816858	261.6	69.71380952
Plxnd1	212235_at	0.0069182	40.93333333	25.55651355	23.10909091	9.609861457
PML	211013_x_at	0.0119987	19.03333333	12.16792758	13.50454545	4.866941669
PMPCA	212088_at	0.00438036	342.9703704	115.1575637	273.1909091	71.83080589
Pms1	213677_s_at	0.00113762	264.1518519	48.26090447	328.7818182	71.61642294
PMS2L1	216843_x_at	0.0221284	386.3296296	70.14024311	447.1863636	62.10758174
PMS2L1	217485_x_at	0.0272993	662.4777778	152.8672862	586.7545455	118.2363079
PMS2L2	215410_at	0.0178343	33.15185185	22.03380917	23.86818182	16.98827008
PNLIPRP1	206694_at	0.00026794	62.58888889	40.19883593	34.32272727	20.15475678
PNMA1	218224_at	0.0296014	1534.418519	448.4542881	1786.05	522.0754486
PNMA2	209598_at	0.0169585	2894.959259	949.2569751	3747.436364	1130.907476
PNMAL1	218824_at	0.000995335	1579.207407	396.7974264	1900.736364	523.3867991
Pnmt	206793_at	0.00401379	367.537037	99.05655008	275.5363636	90.27371365
pnpla3	220675_s_at	0.0141124	18.37407407	17.83383976	12.17272727	8.182337646
Pofut1	212349_at	0.0213767	27.94814815	17.81966007	21.07272727	17.17457095
Pold2	201115_at	0.010032	406.6925926	91.71500979	317.8318182	94.69285882
POLDIP2	217806_s_at	0.0211809	815.9592593	196.6718162	669.8090909	127.6478448
POLG	203366_at	0.026301	159.4592593	37.26049939	140.2181818	42.26881814
POLR1D	218258_at	0.0219044	603.0148148	320.8739109	457.4318182	112.9625871

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POLR2E	213887_s_at	0.0248458	280.8555556	144.8813688	224.0636364	109.9997989
POLR3C	209382_at	0.0145062	269.9037037	116.606404	203.7909091	63.11129179
POLR3C	210573_s_at	0.0245183	205.0185185	86.7507439	155.1272727	32.20418757
Polr3d	208361_s_at	0.010942	74.78518519	29.44393243	62.71363636	24.34428251
POMGNT1	217944_at	0.0164445	288.7444444	92.90969285	231.1181818	52.69564576
por	208928_at	0.0256405	245.5814815	97.88589133	204.6136364	66.36976718
POU3F3	208563_x_at	0.0168421	50.55925926	27.60049135	69.51818182	32.27398534
POU4F1	206940_s_at	0.0267537	80.55555556	32.80982889	69.63181818	28.97528317
ppan	221649_s_at	0.0276895	185.0222222	62.23960113	140.8090909	47.38755019
PPARA	206870_at	0.0217517	46.62962963	19.91340513	64.3	33.10261103
PPARGC1A	219195_at	0.018884	70.05185185	26.67518828	92.10909091	32.10761531
ppiB	200967_at	0.00120163	988.1740741	281.988679	741.7	213.9308633
ppiB	200968_s_at	0.00586939	871.0148148	228.5172468	710.1772727	212.5658664
ppie	210502_s_at	0.0163175	270.862963	43.234247	216.7681818	74.27164034
Ppih	204228_at	0.00145408	181.7592593	52.14778747	134.6863636	49.17839533
PPM1B	209296_at	0.024124	503.1444444	168.6993738	598.8136364	159.9347286
Ppp1ca	200846_s_at	0.0315772	634.5925926	351.6893504	457.0090909	207.5173542
PPP1R12A	201603_at	0.00274427	248.8703704	96.78529694	326.9181818	108.879215
PPP1R12A	201602_s_at	0.0237944	264.8666667	118.6094107	333.7727273	107.7949605
PPP1R12A	201604_s_at	0.0300222	93.05925926	45.35965896	133.8272727	57.5672541
PPP1R12B	201957_at	0.00621492	353.2703704	82.11072175	420.7181818	75.71671286
PPP1R15A	202014_at	0.0187697	104.437037	52.58394862	83.70454545	34.43723728
PPP1R2P9	207377_at	0.0180078	4.97037037	2.562272851	6.472727273	2.750096417
ppp2r3c	218852_at	0.0257054	255.3148148	66.53966257	225.5227273	45.37884898
PPP2R5C	201877_s_at	0.0113822	726.237037	167.5574601	907.0681818	250.694233
PPP2R5E	203338_at	0.00132651	205.6296296	56.7596472	280.5818182	88.84063654
ppp3ca	202429_s_at	0.00877559	4333.866667	1627.699854	5493.363636	1593.91902
ppp3ca	202457_s_at	0.0133229	5360.481481	2052.18388	6536.65	1670.026643
PPP3CC	207000_s_at	0.0264522	57.60740741	21.67369774	48.07272727	24.56005626
PPPDE1	212371_at	0.00535329	330.2481481	100.9190474	431.7727273	81.62301369
PQBP1	207769_s_at	0.00202526	274.3851852	103.8600601	195.7863636	66.73113285
PQBP1	214527_s_at	0.0116757	401.962963	234.2219101	271.6227273	130.7782344
PRAMEF11	217365_at	0.00347349	86.97777778	31.31838159	72.21363636	32.56595206
PRDM2	216433_s_at	0.0259492	5.551851852	6.579827585	3.681818182	2.270438675
PRDX1	208680_at	0.00467737	2313.181481	691.9172744	1894.777273	519.1615979
Prdx4	201923_at	0.00399271	492.2518519	169.2075839	384.6363636	87.4769877
PRIM2	205628_at	0.0125095	25.97407407	17.31503554	19.79545455	12.61939087
PRKAB1	201834_at	0.00428539	147.037037	48.34924348	103.0954545	42.9606739
PRKACB	202741_at	0.00909168	5028.659259	997.9669477	6166.945455	1534.274477
PRKACB	202742_s_at	0.027255	944.4555556	332.0341958	1402.968182	722.3714843

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PRKAR1A	200603_at	0.0113734	1960.181481	391.7150859	2271.481818	494.5126371
prkar2b	203680_at	0.00320184	622.1407407	284.9749966	964.15	354.1755561
PRKCB	207957_s_at	0.0196179	1944.025926	939.3735489	2415.440909	962.3638227
PRKCB	209685_s_at	0.0273809	1100.77037	465.2784607	1437.595455	620.8745809
Prkce	216753_at	0.00529442	68.91481481	31.38870085	55.99545455	20.39361425
PRKCI	209678_s_at	0.00035437	824.5259259	268.1529079	1230.795455	331.4291097
PRKCI	213518_at	0.000469291	188.4444444	67.43924521	269.2909091	77.30373557
PRKCI	209677_at	0.0281476	22.47777778	12.66464896	35.05454545	15.66335509
Prosapip1	204447_at	0.030674	1610.388889	393.73382	1760.104545	371.2208795
prpf4b	202127_at	0.00991357	163.362963	50.60551162	211.6863636	51.07904514
PRPF6	208880_s_at	0.0290265	578.237037	199.036831	388.5318182	195.2185525
PRPS1	215486_at	0.0216161	26.80740741	22.06683774	36.70454545	20.19777162
Prr16	220014_at	0.0293477	24.11851852	12.66084324	37.33636364	20.61563312
Prx	222255_at	0.0114023	5.111111111	4.351333424	3.422727273	1.85727189
PRY	208332_at	0.00964011	105.5333333	46.04831075	85.86363636	50.86554213
PSD3	203354_s_at	0.00529537	892.9333333	343.7866434	1566.322727	892.3632796
PSD3	218613_at	0.00109207	1174.551852	380.5160225	1563.668182	376.0263268
PSD3	203355_s_at	0.0262506	384.0185185	112.8154246	474.85	162.6504981
Psd4	215923_s_at	0.0297192	35.9962963	30.58203949	28.86818182	21.41213244
psen2	204262_s_at	0.00483705	106.4555556	25.650676	89.74090909	20.72120283
PSIP1	209337_at	0.0114422	708.1666667	214.5472854	922.1227273	307.9435275
PSIP1	205961_s_at	0.0325491	176.2888889	93.34501072	253.7227273	109.2389645
psmb1	214289_at	0.0113838	36.15925926	22.99577318	61.98636364	32.81176176
psmb9	204279_at	0.000854807	181.2703704	46.24396688	144.7545455	35.86993339
psmc3	201267_s_at	0.0181701	688.7518519	534.5097188	426.6136364	244.8319643
psmc4	201252_at	0.006574	191.2777778	99.71159694	133.5454545	55.59001904
Psmc11	208776_at	0.0116848	228.3037037	60.97988623	268.6681818	95.20081225
PSMD4	200882_s_at	0.0188747	2086.381481	375.097048	1635.763636	525.0120584
PSMD4	210460_s_at	0.00767721	1156.648148	409.4625355	813.9727273	327.9316482
PSMD4	211609_x_at	0.00241096	1572.088889	416.585354	1171.945455	374.838342
PSMD8	200820_at	0.0330367	631.2037037	320.4182333	460.2227273	159.830538
PSME3	200987_x_at	0.0253145	259.7888889	98.16056444	207.9727273	58.09649757
Psme4	212222_at	0.0218301	410.3740741	99.50446682	464.6045455	111.2664519
PSORS1C2	220635_at	0.0315349	22.61111111	7.345398001	29.09545455	11.53113703
PSPC1	218371_s_at	0.0171976	207.7555556	38.10898676	238.5454545	69.3541136
PSPN	221373_x_at	0.00590427	22.71111111	20.69768351	15.31363636	6.477749128
PTDSS2	221005_s_at	0.00626717	206.4222222	76.27360837	151.2454545	51.72634704
ptgds	211663_x_at	0.0264295	3720.137037	1416.782739	3262.640909	1615.840523
Ptger4	204897_at	0.0215703	29.92592593	18.98249381	39.79090909	18.11442228
PTH1R	205911_at	1.38696E-05	248.7037037	67.61496467	173.0454545	54.3350341

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PTMA	200773_x_at	0.00514876	3651.625926	875.1051583	3168.204545	748.8638407
PTMA	211921_x_at	0.00649965	2580.433333	1760.819832	1376.322727	507.5783467
PTMA	200772_x_at	0.0214542	2191.951852	1425.836905	1328.445455	425.8546295
PTMAP7	208549_x_at	0.011942	839.4074074	565.7985677	489.6636364	182.4983224
PTN	208408_at	0.00989909	33.77037037	21.05138064	65.90909091	63.24626779
PTPLA	219654_at	0.00136777	40.31851852	24.93966623	70.07727273	36.51578826
ptplb	212640_at	0.0307853	1079.603704	240.2042248	1242.609091	273.6502267
PTPN11	212610_at	0.0333857	1213.640741	344.7708127	1470.736364	415.7045752
PTPN2	213136_at	0.00803189	164.1962963	69.36402571	244.5681818	85.87218845
PTPN6	206687_s_at	0.00456914	85.94074074	14.30968632	76.52727273	17.2893356
PTPRT	205948_at	0.00970632	177.6555556	34.87075404	217.5545455	62.65960746
PTTG1	203554_x_at	0.0255044	426.9925926	108.9125193	379.7590909	56.12093794
PUF60	209899_s_at	0.023104	1820.996296	375.2928841	1393.722727	453.9978308
PUM1	201165_s_at	0.00818734	671.737037	150.2848223	827.3863636	160.6289996
PUM2	216221_s_at	0.000812839	841.6592593	180.2551466	1089.077273	221.1151756
PUM2	201493_s_at	0.0201982	296.0481481	82.50385711	392.2181818	118.5483853
purA	204020_at	0.00329319	578.2333333	201.34267	811.8681818	196.546106
PWP1	201607_at	0.0074101	327.937037	70.05835012	277.7909091	56.02193371
pycard	221666_s_at	0.0146069	39.85185185	27.49891425	19.92727273	13.64506476
PYROXD1	219802_at	0.0200269	132.0925926	58.90174299	155.3772727	54.70638451
QARS	217846_at	0.0120424	897.5185185	164.1974492	731.0909091	135.6949201
Qpctl	220438_at	0.0252346	47.95555556	33.35590518	28.79090909	16.06951889
R3HCC1	212866_at	0.00739113	364.0851852	112.9293438	269.2136364	80.45327716
R3HCC1	35156_at	0.00656913	793.137037	172.3724013	618.9227273	124.0950171
R3hdm1	202754_at	0.0128435	479.7814815	108.9374981	573.2045455	125.0031104
Rab11fip2	203883_s_at	0.00725913	350.8555556	103.7314704	468.9045455	137.0209455
Rab11fip2	203884_s_at	0.0200563	279.2666667	73.3147797	344.1227273	92.60324962
RAB1A	213440_at	0.00717151	376.962963	124.1864732	455.5	137.3155005
rab21	203885_at	0.00402234	347.5148148	82.58071438	426.4272727	107.3569799
RAB22A	213405_at	0.00245395	514.6444444	153.6277627	681.7181818	201.2245077
RAB22A	218360_at	0.026273	148.0703704	36.09260328	186.7681818	54.32702902
RAB27B	207017_at	0.0177829	4.744444444	2.999786317	7.345454545	4.470722459
RAB28	209084_s_at	0.00643453	112.9185185	32.30816802	153.3772727	41.80569489
Rab3gap1	213531_s_at	0.00787257	1672.396296	698.4908862	1804.668182	437.4103145
RAB40AL	215782_at	0.0241275	10.57407407	9.684269266	20.99090909	18.29121332
rab40b	204547_at	0.000244673	1771.674074	312.6229107	2057.968182	528.5320735
RAB6A	210406_s_at	0.0118406	962.8296296	313.513269	1186.390909	347.4537817
RAB6A	201047_x_at	0.0221695	1160.211111	294.9118608	1349.131818	385.5365332
Rabgap1l	203020_at	5.08183E-05	747.0407407	130.7621395	947.3590909	151.5182518
Rabif	204478_s_at	0.0203079	271.0481481	53.19160844	237.1818182	43.80661655

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RALBP1	202845_s_at	0.0150958	329.5185185	115.6133711	426.4909091	177.3319484
ralgapa1	213049_at	0.00183843	474.9925926	143.9981729	621.0090909	177.445852
ralyl	213967_at	0.0134953	893.4481481	159.0486799	964.8045455	136.7829267
RANBP6	213019_at	0.00152115	397.837037	146.705991	451.0272727	84.56924006
RAP2A	221830_at	0.0231771	1677.62963	554.4063178	2051.509091	501.3869088
RAPGEF2	203097_s_at	0.00689568	1554.103704	342.8189189	1873.904545	509.413612
Rarb	208412_s_at	0.00160732	7.237037037	3.606527005	15.38181818	10.81505284
RARRES2	209496_at	0.00918039	250.6444444	108.0385947	179.2772727	55.61881261
Rasa1	202677_at	0.0197041	637.4962963	147.4285263	759.6318182	157.0656168
Rasa1	210621_s_at	0.0238995	147.1333333	50.58068193	196.85	62.48380171
rasal1	219752_at	0.0108736	465.1037037	88.158535	370.7772727	91.32916882
RASAL2	219026_s_at	0.0293379	23.8962963	19.58359756	45.92727273	32.09871948
RASL12	219167_at	0.00411206	243.2	88.36584791	204.9636364	88.08128576
RB1CC1	202033_s_at	0.0324892	445.9555556	192.8327101	689.0454545	333.1183655
RBM25	212030_at	0.00277201	163.8148148	64.25026611	253.1818182	112.8871608
RBM25	212031_at	0.00156671	141.2888889	46.7970605	192.8454545	60.90427092
RBM25	212033_at	0.00095582	374.2481481	110.4175062	600.2045455	241.6859995
RBM26	220509_at	0.00657725	44.95925926	19.60687201	58.50454545	24.4505814
Rbm39	207941_s_at	0.0077578	1112.355556	443.0904443	1272.845455	376.3587583
rbm42	205740_s_at	0.0142406	481.1407407	134.0814599	367.5363636	127.6503951
RBM9	216215_s_at	0.00707015	636.537037	151.3252334	729.5136364	139.719291
RBMS2P1	34187_at	0.00890695	29.61111111	13.49490882	20.11818182	11.64656648
RCN2	201485_s_at	0.0100517	695.0888889	232.7355834	1042.654545	510.8946874
Rdh8	220683_at	0.0327587	46.06296296	35.68280288	34.34545455	21.32996388
RECK	205407_at	0.0124753	74.23703704	25.69892467	99.28181818	37.55352544
Recql5	34063_at	0.00391358	57.78518519	15.78981424	46.50909091	18.55562831
REEP1	204365_s_at	0.000917884	1138.655556	209.3804953	1331.204545	279.9963834
REEP5	208873_s_at	0.00424455	2399.688889	856.291127	2786.35	869.3831386
REG1A	207778_at	0.0287911	24.91851852	15.89523482	24.01363636	24.37979834
RELN	205923_at	0.00443261	544.2111111	167.5276173	681.35	211.3082735
REPS2	220873_at	0.010207	57.61111111	22.74536865	70.38181818	32.92864777
RER1	202296_s_at	0.0143803	374.5888889	112.0514797	316.2954545	81.05859419
REV3L	208070_s_at	0.0141846	195.337037	71.8259978	273.0454545	91.15429477
RFK	203224_at	0.000443788	629.2037037	151.7424526	828.0272727	208.5898143
RFK	203225_s_at	0.0079328	399.3	109.1301728	512.8590909	194.4983698
RFPL1S	214120_at	0.00282872	516.6148148	174.5324693	688.95	228.3951354
rfx3	217671_at	0.0157506	156.5555556	63.36708885	226.1681818	73.07081618
RFX7	218430_s_at	0.00862872	27.96296296	20.40230281	44.70909091	19.918355
rfxank	202758_s_at	0.00023841	237.3851852	47.80389994	166.4045455	60.7860297
Rgl2	209110_s_at	0.0298764	471.1666667	100.9344685	529.8636364	134.3967068

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
RGPD6	212842_x_at	6.81379E-05	825.2222222	230.2100301	1188.654545	276.0842603
RHOD	31846_at	0.0135841	455.8296296	80.10484867	405.2954545	96.74119858
rhoq	212120_at	0.0228277	710.3962963	205.7111576	886.2727273	248.2366731
RHOQP2	212119_at	0.0114881	1388.648148	324.8954677	1748.709091	566.4753447
RHOT1	218323_at	0.031861	570.9407407	160.5261715	661.9727273	218.009334
RING1	35685_at	0.00275727	678.9740741	162.8719993	579.8863636	110.9905457
RNASE1	201785_at	0.0248208	1364.025926	660.8083753	877.75	413.3343219
RNASET2	217983_s_at	0.0274103	530.6185185	273.5850986	396.2136364	180.4179072
RNF114	200867_at	0.00899106	228.7481481	62.57907841	184.0090909	44.97477504
RNF126	215031_x_at	0.0197175	223.6666667	36.07853613	187.4	52.01621542
RNF138	218738_s_at	0.00991901	166.5444444	59.43688529	222.9090909	73.00831596
Rnf144a	204040_at	0.0139326	427.5037037	81.45237155	514.0727273	102.8632202
RNF17	221033_s_at	0.022022	43.96296296	19.1466034	62.68181818	38.42908914
Rnf38	218528_s_at	0.0164531	378.037037	76.25055938	474.6954545	119.9487687
RNF44	203286_at	0.00954758	349.3925926	77.28238393	408.9363636	81.85281532
Rnf8	203161_s_at	0.0246489	8.096296296	3.369031073	7.572727273	2.751481301
rnh1	206050_s_at	0.0329068	877.5259259	287.326007	678.3772727	206.4438144
rnmt	202683_s_at	0.0274396	361.1814815	66.51701365	422.4363636	88.3105966
RNMTL1	218993_at	0.00826201	285.0259259	46.76813998	225.0909091	57.18763527
RNPEPL1	218301_at	0.0282808	137.2925926	44.12853539	120.1409091	28.52570535
RNU2-2	214349_at	0.0115461	106.1925926	35.7079815	88.78636364	26.95909239
ROCK2	202762_at	0.000342789	289.3481481	151.5904588	498.4272727	181.7459954
ROD1	207223_s_at	0.00603803	63.65185185	31.02035771	101.0818182	40.84477744
Rom1	205806_at	0.0147894	110.5851852	39.82870731	87.85909091	37.78361523
RORB	206443_at	0.00813135	16.37407407	19.40766289	7.540909091	3.609730117
rp2	205191_at	0.0275626	18.48518519	7.662882753	26.53181818	9.247310361
RPA1	201529_s_at	0.0151504	208.2444444	91.30878858	178.0954545	50.57793117
RPL13AP7	200715_x_at	0.0125292	2296.362963	696.9838019	1796.813636	402.4725691
RPL18	200022_at	0.00196323	5200.366667	1431.74008	4173.463636	1236.548971
RPL18AP3	200869_at	0.0162005	4142.248148	1972.707039	3298.213636	1296.991024
RPL35P2	200002_at	0.0157467	5154.622222	2227.195561	4035.409091	1562.976057
rpl36	219762_s_at	0.00970292	2573.537037	813.5424078	1909.85	644.4656397
RPL8P2	200936_at	0.0109946	4225.92963	1370.24882	3326.827273	1073.457973
RPN1	201011_at	0.0265958	489.7037037	140.6298318	403.7818182	81.03629778
Rprd1a	218209_s_at	0.0258977	212.1296296	51.5394458	270.4272727	91.53312792
rps10	200095_x_at	0.0210782	17174.36296	4758.118347	13735.48182	4101.217103
rps21	214097_at	0.0309413	84.32592593	62.01174574	49.13636364	61.81876388
RPS26P8	217753_s_at	0.00824865	3114.125926	1148.903827	2321.404545	866.1296777
RPS27AP11	217144_at	0.0172355	746.6407407	197.1128772	635.9545455	132.3408109
RPS28	208904_s_at	0.0166419	12200.34074	4191.784137	9464	2881.24645

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RPS3P3	208692_at	0.0106407	6977.666667	1984.797032	5533.045455	1818.965969
RPS6	201254_x_at	0.020224	9090.277778	1727.311258	7747.918182	1592.102068
RPS6KA2	204906_at	0.0266329	514.8407407	178.7813109	411.6454545	115.1528952
Rps6ka3	203843_at	0.0111893	136.2814815	35.12071531	173.0318182	43.83365077
RPS6KA5	204633_s_at	0.000209791	460.5814815	85.17820251	597.2090909	147.6870079
RPS6P1	200081_s_at	0.00403217	5395.062963	1239.448367	4223.045455	1235.883524
RPS9P4	214317_x_at	0.0157474	2611.518519	1140.413329	1869.268182	640.9797466
RPS9P4	217747_s_at	0.00386083	4354.455556	1324.16571	3161.172727	1285.87279
RRBP1	201205_at	0.000215844	144.6407407	38.29679902	112.1818182	45.01294667
RRP7A	202937_x_at	0.00480403	214.4777778	94.01459925	116.5227273	69.69107295
RRP7A	33307_at	0.0137276	222.6296296	77.61561508	155.7727273	36.08921725
RSBN1	213694_at	0.00660353	181.4740741	48.07466623	246.3681818	72.11871421
Rsl1d1	212018_s_at	0.0195146	221.3740741	55.41866939	193.95	38.33404244
RSRC2	202302_s_at	0.00499949	464.4703704	136.4417227	621.8363636	201.990779
Rtf1	212301_at	0.000836058	384.2259259	88.59285261	470.1454545	80.36653371
RTN1	210222_s_at	0.0199725	2403.422222	833.612381	2845.572727	984.6463412
RUFY3	203724_s_at	0.0260296	757.1518519	232.0158671	895.8363636	300.4932636
RUNDC3B	215321_at	0.00249182	288.2481481	77.49106336	395.3454545	116.6118785
RUNX1T1	205528_s_at	0.0173214	44.05555556	17.39233548	60.98181818	21.41280517
RYBP	201845_s_at	0.0155873	421.0851852	109.2622382	494.3727273	113.2803441
RYR2	214044_at	0.0173287	534.6740741	208.0859264	653.2227273	219.9230687
S100A13	202598_at	0.0190628	2067.525926	546.1733978	1663.259091	831.312463
S100P	204351_at	0.0103179	15.46666667	9.772488857	10.93636364	6.674082456
S100PBP	218370_s_at	0.0280178	272.4481481	91.64583322	314.3681818	98.54510394
SAC3D1	205449_at	0.0138128	296.9925926	93.77965962	193.4045455	98.7400024
SACS	213262_at	0.0121442	483.6444444	206.6398192	595.6636364	178.0895001
SAE1	217946_s_at	0.0236818	627.8740741	132.6686114	520.6954545	131.2837983
Sap30bp	217965_s_at	0.0253945	243.0925926	49.88241501	195.1454545	70.13179245
SARS	200802_at	0.00816424	1405.659259	429.3924162	1115.718182	300.4681231
SARS2	218702_at	0.0274056	197.6851852	58.70977971	162.7727273	45.55107214
Satb1	203408_s_at	0.0236996	365.7740741	102.9430634	467.2681818	133.040815
SC5DL	211423_s_at	0.0175676	591.862963	183.7174799	743.0454545	192.7382897
SCAMP1	212416_at	0.000321787	1366.340741	233.1046963	1634.022727	253.6876293
SCAMP1	212425_at	4.68022E-05	350.7148148	93.60697584	495.9954545	109.3925369
Scand1	218206_x_at	0.000614165	1005.988889	319.2696333	656.6681818	211.0744766
SCARB1	215834_x_at	0.0246025	15.58148148	15.18425391	11.03181818	3.84563901
Scin	222272_x_at	0.0316085	74.47777778	32.11429508	90.85454545	48.93419028
SCLY	219808_at	0.00285272	52.22592593	37.877247	79.60454545	46.13092628
Scn1a	210383_at	0.0215057	136.0444444	43.88661381	175.7181818	66.06848277
SCN3A	210432_s_at	0.000245903	537.6333333	266.9810437	943.3	361.8074824

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SCN8A	207049_at	0.0193034	12.21111111	14.55808877	28.69090909	25.20362614
SCP2	201339_s_at	0.0273783	220.3222222	77.22002198	302.0181818	112.1406627
Sdc4	202071_at	0.000853829	1126.607407	398.577895	865.7863636	288.7584298
sdcbp	200958_s_at	0.0105509	1846.544444	518.4553592	2209.977273	593.1532773
SDF2L1	218681_s_at	0.0233317	296.0185185	71.3939506	229.1590909	92.89458777
SDHA	201093_x_at	0.0293508	567.1962963	113.3149643	475.3318182	111.3240888
sdhC	202004_x_at	0.0165276	661.8592593	183.9215055	555.4	137.6817241
sdhC	210131_x_at	0.00678954	700.537037	172.2874413	582.7045455	123.0757586
sec13	207707_s_at	0.0250176	666.4333333	113.7021311	547.1681818	128.7354259
Sec14I2	204541_at	0.0328478	124.9740741	28.86650431	116.7409091	35.80544863
SEC61A1	217716_s_at	0.0064299	263.9444444	77.38111146	212.0954545	87.86994978
SEC63	201916_s_at	0.00722181	387.5	113.8924594	486.3409091	124.4711313
Sel1I3	212314_at	0.0126881	165.1592593	55.05994816	223.25	80.76188841
SELENBP1	214433_s_at	0.00446295	372.7037037	90.02725861	295.9909091	128.9653402
SEMA5A	213169_at	0.0263175	218.9518519	37.180075	263.15	55.58296887
SEMA6A	220454_s_at	0.0298017	126.6555556	31.34605034	163.5954545	74.9627811
SENP6	202318_s_at	0.0163306	221.4777778	59.12328276	270.0409091	62.34995444
SEPHS2	200961_at	0.0308394	368.4851852	92.47382459	412.3727273	116.2891641
SEPX1	217977_at	0.00323968	315.3814815	145.1114321	203.6818182	97.94113702
serbp1	217724_at	0.00644094	1141.785185	290.7835578	1360.477273	272.280587
SERF2	217756_x_at	0.0172168	1804.707407	636.6013763	1419.336364	466.5875956
SERINC1	208671_at	0.0168222	1446.396296	468.131711	1772.359091	565.153335
SERINC3	221472_at	0.0137837	478.1555556	121.5962592	551.7181818	90.39447221
SERINC3	221473_x_at	0.0244212	1260.425926	343.1861175	1477.390909	428.8321027
Serpinf1	202283_at	0.00350761	42.44444444	32.68090872	22.36363636	10.37430642
SERPING1	200986_at	0.00161896	169.0555556	56.24383955	138.65	46.02753575
Serpini1	205352_at	0.00895311	1604.514815	451.8308054	1920.754545	578.3287134
set	200631_s_at	0.000191426	1366.077778	337.389034	1606.890909	350.7988433
set	40189_at	0.0122363	921.4	251.1447529	1028.859091	266.3466639
set	210231_x_at	0.024969	1176.933333	294.4548744	1229.081818	202.1000168
SETBP1	205933_at	0.000340794	121.162963	29.72235818	157.15	28.54906804
SETD2	215038_s_at	0.0282261	105.4444444	23.3432305	130.6227273	33.56730172
SETD4	219482_at	0.0131712	62.23703704	49.7799245	92.47272727	48.97962824
Setx	201964_at	0.00352178	223.6259259	76.88027952	300.5045455	77.88333447
SEZ6L	207873_x_at	0.0120579	88.64444444	33.28588675	67.51818182	32.26127911
sf3a3	203818_s_at	0.0194158	308.1592593	45.37648713	275.4954545	43.0340339
SF4	215004_s_at	8.48806E-05	210.4333333	40.76687947	149.8727273	41.06457379
SFN	33322_i_at	0.00998172	843.6185185	324.2667777	617.7227273	134.5716978
SFN	33323_r_at	0.0155969	526.2037037	206.5302632	395.3772727	93.89380492
SFRP5	207468_s_at	0.00729302	24.84814815	20.62029192	15.16363636	8.44492214

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SFRS1	201741_x_at	0.0020392	57.8	24.99206028	82.11363636	39.00428909
SFRS13A	206095_s_at	0.00892465	94.44444444	27.92987556	122.2954545	36.22407089
sfrs18	212179_at	0.000835144	753.6407407	257.697584	1016.495455	257.3536579
SFTPC	38691_s_at	0.00920753	363.3037037	115.8335858	281.0590909	101.2642261
SFTPC	205982_x_at	0.0319383	14.72962963	4.358176649	12.55454545	3.950976645
SGCD	213543_at	0.00585387	31.8037037	22.49703368	53.29545455	24.90476101
SGK1	201739_at	0.0302761	835.0148148	392.9824059	666.8681818	182.337237
SGSM3	214779_s_at	0.0265607	235.9074074	84.09502375	189.8136364	66.02894961
Sgta	201396_s_at	0.0061774	312.0407407	109.4393694	240.0045455	80.98376367
SH2B1	40149_at	0.00876826	212.2703704	43.16227711	198.4681818	26.9278646
SH2D4A	219749_at	0.0176875	89.22592593	29.91491257	109.9454545	52.95601704
SH3BP5	201811_x_at	0.0283071	909.6296296	222.7610393	966.8727273	194.8999748
sh3glb1	209090_s_at	0.00201502	410.0148148	114.6848682	611.1863636	188.529574
sh3yl1	204019_s_at	0.00154293	417.8222222	140.2282709	604.0954545	204.6832128
SHANK2	213308_at	0.00976543	365.1259259	117.9688733	552.2090909	206.190321
SHC3	206330_s_at	0.010979	363.3703704	166.7982425	558.7909091	178.3438143
SHISA6	217479_at	0.0297249	35.9962963	26.53851311	22.9	19.24330434
SHMT1	209980_s_at	0.0319325	24.94074074	12.99764059	19.62272727	9.424129709
SHMT1	217304_at	0.0224085	65.93703704	30.0560649	54.95	14.71609906
SHOC2	202777_at	0.00455213	424.5740741	81.43641499	523.85	106.2994277
SIDT1	219734_at	0.0115626	41.25925926	30.92288497	58.99090909	18.69593562
SILV	209848_s_at	0.026029	140.3703704	60.19052963	164.1136364	53.91709063
Sipa1	204164_at	0.0152315	66.02222222	29.88666198	46.85	34.2614562
SIPA1L1	202254_at	0.00424757	829.937037	244.6027048	1043.740909	200.0097704
SIVA1	210792_x_at	0.0125379	229.2962963	62.65560618	182.4772727	76.01375146
Six2	206510_at	0.00787987	53.29259259	21.91860688	72.71818182	23.96367561
SLA	203760_s_at	0.00718606	153.7481481	69.43042655	111.3227273	49.61884177
SLAMF7	219159_s_at	0.0097542	21.64814815	11.65294187	37.81363636	30.32516314
Slc12a4	209402_s_at	0.0101892	72.64444444	40.29712085	45.01363636	24.74837744
Slc13a3	205244_s_at	0.0232926	15.53333333	9.783384659	11.01818182	4.099202752
SLC16A5	206600_s_at	0.0280932	44.2	26.75479828	24.53636364	18.54237221
SLC18A2	213549_at	0.0243847	188.2333333	66.29573603	235.7363636	71.01615206
SLC1A1	213664_at	0.0084949	469.1185185	134.593765	582.0636364	164.1256677
slc1a4	209610_s_at	0.0257039	978.1407407	434.6271242	869.9727273	213.7908038
SLC22A7	221662_s_at	0.017406	47.48148148	27.31459228	33.74090909	22.45466669
SLC24A3	219090_at	0.0284214	613.5888889	125.8826723	655.2727273	126.2191827
SLC24A6	218749_s_at	0.0193975	104.7148148	38.54703125	74.92272727	52.1006803
slc25a10	218275_at	0.00188337	58.78888889	30.96535699	41.10454545	23.64816468
Slc25a11	207088_s_at	0.0186178	402.9888889	167.6324077	335.5772727	107.9260723
Slc25a11	209003_at	0.02084	870.5037037	213.6418201	682.6227273	230.3825492

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SLC25A23	220182_at	0.0235581	199.7555556	130.1514305	285.7454545	141.5538758
SLC25A36	201919_at	0.00563125	675.8444444	84.74454071	814.6727273	162.8842715
SLC25A6	212085_at	0.00656931	2100.540741	801.2693657	1718.336364	518.5902682
Slc29a3	219344_at	0.015054	167.0888889	57.74234104	141.6045455	60.35941933
SLC2A3P1	221751_at	0.000920538	318.0888889	100.7125969	527.3772727	220.7364102
SLC30A9	202614_at	0.00590046	644.9888889	194.9546246	799.3954545	284.3362387
SLC35A1	203306_s_at	0.00643386	257.3	60.17818414	337.2818182	99.66063194
SLC38A6	214830_at	0.0301941	70.54074074	19.35155051	92.62272727	29.26366074
SLC39A6	202088_at	0.0143281	697.1518519	297.9518848	821.8409091	258.7985881
SLC48A1	48106_at	0.024719	695.237037	206.1407308	558.7363636	142.6981848
SLC5A3	212944_at	0.00288376	449.7296296	136.5649573	635.45	186.7991454
slc5a6	204087_s_at	0.0215306	227.1592593	62.31256361	192.6954545	56.98956026
SLC6A1	205152_at	0.00968363	789.9185185	236.4542012	1014.790909	307.5538418
SLC6A8	210854_x_at	0.0181069	211.2888889	53.12767882	193.1090909	62.76692266
SLC7A11	207528_s_at	0.00608856	60.06666667	23.30414291	84.83181818	37.28826429
SLC7A11	209921_at	0.00835279	335.1407407	113.3587235	464.8409091	181.558847
SLCO2B1	211557_x_at	0.00937296	52.6	32.96843479	31.46363636	12.37957402
SLFN12	219885_at	0.0184714	27.27407407	25.45772654	17.35	12.48624958
Slit2	209897_s_at	0.0252294	362.6740741	80.22567013	402.5590909	83.47473333
SLIT3	203813_s_at	0.0276221	44.94444444	24.66584891	55.29090909	32.4117984
SLITRK5	214930_at	0.0335575	375.1037037	128.3300747	435.9318182	138.8053601
SLK	206875_s_at	0.0304716	170.3851852	66.23012737	217.6590909	75.64408301
SMARCA1	203874_s_at	0.00172156	236.1777778	66.56210133	338.4363636	98.10911101
SMARCA1	218452_at	0.0268626	136.1	53.52470314	96.54545455	32.38245744
smarcd2	201827_at	0.0142955	119.7888889	65.36605408	78.65454545	32.51244051
Smarce1	214871_x_at	0.0301825	63.61111111	26.81730689	47.02272727	19.60048425
SMC2	204240_s_at	0.0184136	35.64814815	24.24889165	63.71818182	44.38002164
smc3	209257_s_at	0.0159244	114.337037	52.4851052	164.55	65.02388389
smc3	209259_s_at	0.011029	128.1592593	45.69951405	170.8818182	48.34005178
SMCHD1	212579_at	0.00104033	97.15185185	26.69326291	139.9	36.64517119
smg5	212147_at	0.00296793	162.9703704	73.0419522	96.08636364	50.12802937
SMURF2	205596_s_at	0.0286433	349.9222222	99.76828282	459	129.8998479
SMYD2	212922_s_at	0.0272316	179.6444444	45.54546615	170.4045455	36.88055982
SNAP91	204953_at	0.0260166	780.9259259	225.7508831	839.5045455	288.8395344
Snape5	213203_at	6.94876E-05	609.7555556	179.9586498	719.3909091	120.9600836
Snca	204467_s_at	0.00339277	825.0703704	232.7009997	1020.077273	311.2142501
snf8	218391_at	0.0179255	582.8148148	109.3283611	483.9636364	110.7080483
SNIP1	219409_at	0.0258706	107.9333333	26.15905491	85.78636364	27.85739699
SNN	218032_at	0.0301682	1886.248148	547.9758609	2398.259091	910.6924831
SNORA21	215224_at	0.0269703	34.25925926	27.82977458	21.56818182	17.60661094

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SNORA25	221580_s_at	0.00523182	315.6222222	106.6645617	397.2272727	96.83555123
SNORA67	211787_s_at	0.0145182	1391.092593	299.6787163	1110.209091	289.6382701
Snrk	209481_at	0.0172163	454.162963	110.2916558	566.9909091	137.5301868
SNRNP25	218493_at	0.0236596	879.5962963	443.8230265	623.5636364	195.9577543
SNRNP27	212440_at	0.0177844	524.437037	121.5219991	645.6590909	139.8058131
snrnp35	205300_s_at	0.00581694	162.6814815	52.52603777	114.0545455	50.09760689
SNRPB	213175_s_at	0.00675977	386.3851852	158.4571811	309.2909091	72.55976131
snta1	203516_at	0.0326674	847.837037	262.3255422	752.0045455	301.0642891
Snx11	53912_at	0.000432617	611.3851852	240.7712667	364.3409091	142.2732169
snx17	200991_s_at	0.00573955	282.9333333	196.5281757	161.6909091	100.631534
SNX27	221006_s_at	0.00119448	409.7296296	78.88469099	540.0954545	164.1766977
snx3	200067_x_at	0.0320088	2276.733333	748.8612606	2745.831818	735.0123338
SNX9	215284_at	0.0110505	65.55925926	22.73171724	91.04090909	43.16050508
SOCS6	206020_at	0.0244783	55.78518519	24.98654567	43.2	21.88036737
SOHLH2	220129_at	0.0260593	73.48518519	48.02705731	105.6136364	54.70201786
SORCS3	215522_at	0.024942	205.4444444	60.59247436	251.9681818	75.88833517
Sort1	212797_at	0.00697636	32.43333333	19.35430781	18.55	22.17340213
Sort1	212807_s_at	0.0049044	340.0888889	143.4278332	228.9363636	74.49280276
SOS1	212780_at	0.0056931	138.2148148	48.828087	178.8454545	57.86930865
SOX5	216561_x_at	0.0289194	57.58518519	20.8775865	46.66363636	22.05878608
sp1	214732_at	0.0300482	19.73703704	12.97607705	28.28181818	19.94011598
SP110	208012_x_at	0.00647725	193.9111111	64.81101125	153.75	35.35889125
SP110	208392_x_at	0.0123237	15.45185185	17.38092169	9.254545455	5.204734774
SP110	209762_x_at	0.00252234	182.2777778	45.33092282	147.9636364	29.68359408
SP3	213168_at	0.00115582	325.662963	82.65240072	433.6590909	88.67532356
SPATA2	204434_at	0.00478097	437.0185185	62.92378196	502.8590909	72.9610115
Spats2	218324_s_at	0.00766788	132.1592593	34.4913619	164.7272727	43.85289459
Spats2l	222154_s_at	0.0114546	673.5592593	138.0405884	789.8727273	129.9736207
SPG11	203513_at	0.0322148	310.1407407	72.49313102	377.9090909	85.55444888
SPG7	214494_s_at	0.0263509	539.3703704	126.2992838	431.7954545	110.9957163
SPRED2	212458_at	0.0298861	150.6444444	49.43353217	209.6136364	72.88317655
Sptlc2	203127_s_at	0.0289528	207.0074074	42.47248816	180.3	58.53943726
sqlE	209218_at	0.00921353	281.262963	70.46006042	332.9318182	98.06905432
SR140	212060_at	0.0121915	91.5	27.25195829	116.4909091	41.65002611
srd5a1	204675_at	0.00634638	275.8666667	93.25292736	301.5090909	77.98501632
srd5a1	211056_s_at	0.00144165	88.36666667	53.93115982	134.2272727	64.44761758
srp54	203605_at	0.0310048	250.5222222	59.02194724	288.5181818	72.75361314
SRPX2	216465_at	0.00973723	31.62592593	26.90805702	19.40454545	12.27973465
SS18L1	213140_s_at	0.00343911	221.837037	71.14737764	287.5590909	62.33855842
SSH1	221752_at	0.0256584	227.037037	53.30548498	275.5318182	42.98188308

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Ssh3	219241_x_at	0.0306886	157.4111111	29.46022525	131.8272727	45.33787633
SSNA1	210378_s_at	0.00608688	346.4222222	73.99398278	277.2454545	55.72912146
Sstr2	217455_s_at	0.0283378	105.1444444	48.50031985	137.4818182	52.02486252
SSX2IP	203016_s_at	0.0159346	286.2407407	88.66730062	409.3090909	165.5310931
SSX2IP	210871_x_at	0.00352256	655.837037	173.679174	810.5090909	205.0542388
ST3GAL2	217650_x_at	0.0307694	135.2185185	59.47402172	172.4772727	71.12312551
st3gal5	216075_at	0.00235624	45.4962963	31.16021232	31.3	24.8219373
ST3GAL6	210942_s_at	0.0119542	40.21111111	27.63117433	58.02272727	27.75014254
ST6GALNAC5	220979_s_at	0.0214288	417.2185185	130.5087266	551.2045455	161.2663295
STAG2	209022_at	0.0291132	412.1259259	146.5729107	567.1181818	184.0333656
STAG3L3	209971_x_at	0.00938996	520.137037	79.87077615	430.2409091	78.2101909
Stat3	208991_at	0.0141012	304.9296296	108.1206976	273.2636364	114.1923004
stip1	213330_s_at	0.0328198	261.0814815	108.1249955	229.8863636	67.87772827
stk19	204090_at	0.000836658	185.5074074	85.3360458	94.36363636	57.28873026
stk19	36019_at	0.0155587	402.3962963	69.14446683	345.7181818	100.128335
stt3a	202223_at	0.0138259	170.1777778	37.57022484	149.7045455	36.53382617
STUB1	217934_x_at	0.0054288	2259.574074	485.7299476	1710.590909	443.6795292
STX12	212111_at	0.00336787	939.9740741	273.8102327	741.5	160.1813318
STX4	203530_s_at	0.0333345	299.4481481	59.7389151	244.5363636	73.27785052
STX5	203330_s_at	0.0187008	147.4814815	31.10060644	124.0181818	48.16535641
STX6	212799_at	9.12208E-05	567.5407407	107.0382148	660.4227273	79.14918964
STX7	212632_at	0.027454	525.0074074	121.0883369	617.0363636	148.1573538
Stx8	204690_at	0.0248143	672.5333333	254.7269503	513.6545455	122.7025429
sub1	221727_at	0.0334436	815.3037037	302.1924164	994.3636364	318.5329848
SUCLA2	202930_s_at	0.00929265	407.3481481	103.3932908	475.8454545	138.1164441
Sumo1	211069_s_at	0.00660791	975.6148148	327.469559	1099.631818	263.6162929
supt5h	201480_s_at	0.0215248	643.9259259	130.8494425	557.8363636	111.0754164
SURF1	204295_at	0.032555	1342.111111	259.5652924	1078.577273	331.0203791
Suv39h1	218619_s_at	0.0299124	180.9851852	54.62985028	135.4636364	46.76583557
suv420h1	218242_s_at	0.023489	325.2481481	137.8020553	423.1681818	122.4107309
SUZ12	212287_at	0.0136287	324.7851852	108.1745978	399.0409091	106.7865189
SYDE1	44702_at	0.0109492	215.8111111	71.40380475	179.9954545	31.39993141
SYMPK	202339_at	0.00327042	167.437037	52.37847582	120.4454545	46.95459537
SYMPK	32402_s_at	0.00587749	232.0703704	71.95190602	166.3545455	62.65373266
SYNCRIP	217833_at	0.00238022	362.2111111	73.411445	446.8	77.01801892
SYNPO2L	219804_at	0.0130976	12.16296296	10.97616818	21.29090909	12.97539463
Syt1	203998_s_at	0.000831259	421.6407407	212.0299494	629.05	286.6518857
Syt1	203999_at	0.000496838	2661.822222	803.1452658	3695.681818	1037.786844
Taf5	210053_at	0.0301699	113.9740741	51.92546872	136.5090909	36.59610842
TANC2	208425_s_at	0.0272297	72.55925926	53.06374439	120.0181818	71.7010436

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taok2	204877_s_at	0.0225974	76.95555556	26.0477274	59.42727273	28.06820234
TAPBPL	218747_s_at	0.024048	50.22592593	21.83537343	37.31818182	21.23107867
TARBP1	202813_at	0.00165847	199.0259259	88.86767861	311.2181818	111.9472352
TARBP2	203677_s_at	0.0132493	187.1666667	45.48621938	153.7227273	54.58854696
TARDBP	221264_s_at	0.000902386	296.5481481	93.14714319	379.5818182	69.55184867
tardbp1	216420_at	0.0221385	33.27037037	23.78580402	24.44090909	15.34556424
TAX1BP3	209154_at	0.0301711	580.2481481	225.7735291	432.2954545	128.34003
TBC1D5	201814_at	0.0158395	647.662963	194.6431096	747.0909091	179.4602912
TBC1D9	212956_at	0.00988025	475.9851852	152.3948684	619.8727273	222.9381874
TBCB	201804_x_at	0.0306463	1969.233333	541.1015794	1688.677273	447.5336667
TBCCD1	206451_at	0.0241032	62.40740741	17.46345472	49.89545455	15.05451925
tbcel	222365_at	0.0330744	71.86666667	31.32712022	84.34090909	25.76619526
Tbk1	218520_at	0.00766669	197.3962963	40.23062822	238.9090909	44.46203205
TCEA1	216241_s_at	0.00446744	608.6333333	218.145747	860.0045455	290.9756568
Tceb2	200085_s_at	0.0297175	3945.451852	1130.648613	2972.813636	1245.523046
tcerg1	202396_at	0.000163057	291.3111111	78.16289368	418.7045455	145.2475112
TCF25	213311_s_at	0.00766144	1272.181481	461.2164385	870.5454545	337.2090488
TCF4	212385_at	0.00545579	108.4148148	53.01902927	166.1045455	61.412768
TCF4	212387_at	0.032169	408.4333333	150.4259772	490.9363636	125.14527
TCL6	221054_s_at	0.018116	4.014814815	3.649837057	2.745454545	1.065353629
TCN2	204043_at	0.00531073	207.1777778	45.80899587	172.3227273	52.47287673
TECPR2	204308_s_at	0.0236405	485.7296296	112.3099277	441.2909091	52.13247694
Tecr	208336_s_at	0.00208502	922.1666667	258.8073013	694.7363636	182.3758065
TEK	206702_at	0.00861833	230.5777778	51.56736694	272.9272727	76.52980858
Terf2ip	201174_s_at	0.029403	2091.196296	467.5180223	2251.927273	586.247597
TESC	218872_at	0.00115176	750.6481481	230.1123427	508.2227273	122.0745983
Tex264	218548_x_at	0.0243993	188.1185185	46.20283905	148.6545455	47.01272095
TFAP2A	204654_s_at	0.0160396	27.14074074	18.82470266	16.06818182	12.94108946
TFEB	221866_at	0.0193291	170.962963	101.3760105	110.8772727	61.58302898
TFPT	218996_at	0.00958571	439.1407407	125.609524	316.5363636	95.31967541
TGFB2	220406_at	0.0257858	55.32962963	22.77722909	48.56363636	15.71897687
tgml	211003_x_at	0.00902257	10.48888889	6.393947459	8.318181818	4.205737166
THAP7	218492_s_at	0.000134013	368.3296296	79.62698042	276.5272727	70.55015225
Thoc5	209418_s_at	0.00103453	163.9037037	44.30958814	115.8136364	40.50358356
THOC6	218848_at	0.00601653	58.13703704	29.89618123	40.14545455	27.26144543
thrA	214883_at	0.0316864	37.02962963	27.83490911	22.85454545	18.30635402
thrB	AFFX-r2-Bs-thr-M_s_at	0.0334729	24.59259259	16.38808024	42.74090909	30.85889019
THSD7A	213894_at	0.000503873	133.8222222	44.1778428	220.1863636	86.27337114
THSD7A	214920_at	0.00679477	217.262963	121.5727675	291.2318182	101.036134
Thtpa	214341_at	0.0223473	17.21851852	15.14679547	9.240909091	4.221448532

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Tia1	201448_at	0.0293655	197.1555556	62.99907407	250.3863636	91.86499046
Tia1	201450_s_at	0.025008	59.76296296	29.90931355	82.58181818	30.66571898
tiam1	213135_at	0.00127537	1328.459259	264.1897064	1596.977273	248.9540901
TIMM8B	218357_s_at	0.025885	1753.7	411.0389173	1421.927273	395.0783155
timp2	203167_at	0.00804426	78.6037037	48.28683115	39.07727273	24.86879728
tjp3	213412_at	0.0168323	5.840740741	2.883542061	6.586363636	2.319543357
tjp3	35148_at	0.00939516	16.03703704	13.1719734	11.95909091	9.426844096
tkl	208700_s_at	0.00639801	716.9481481	171.1281984	541.3954545	158.9258092
TLE3	212770_at	0.00446909	129.3666667	51.05231856	102.1636364	44.37538513
Tlk1	202606_s_at	0.00131336	329.3074074	103.0569892	475.2545455	142.3301117
TLL2	215008_at	0.0185792	72.21111111	35.59233208	93.40454545	40.56883013
TLN2	212701_at	0.00965175	381.7444444	119.1775674	495.4227273	133.6424367
tm2d3	221702_s_at	0.0204884	1285.714815	221.7147539	1348.363636	314.5282084
TM9SF3	217758_s_at	3.75087E-05	351.5555556	109.7138668	450.5727273	103.1120573
TMBIM1	217730_at	0.000660687	382.1481481	155.7616433	252.0409091	91.8193706
TMED3	208837_at	0.0262332	348.3925926	71.93848294	280.7636364	52.74746255
TMEM109	201361_at	0.0288586	333.0444444	96.58864137	306.3090909	79.58486282
Tmem111	217882_at	0.0262273	973.2037037	323.7001218	802.3681818	205.4093298
TMEM132A	218834_s_at	0.0231728	506.1037037	100.6797416	443.2818182	109.3252101
tmem161a	43977_at	0.0233562	502.1407407	162.3298263	403.6363636	94.92535185
TMEM204	219315_s_at	0.00103346	245.3962963	70.68895835	194.5045455	57.3549805
TMEM30A	217743_s_at	0.00107115	400.7777778	144.0964296	564.1681818	182.6881037
TMEM47	209655_s_at	0.00999784	402.0888889	155.4806798	662.8272727	327.3299401
TMEM5	204807_at	0.00441938	86.40740741	28.27817759	113.9227273	35.96340643
TMEM97	214283_at	0.00940393	152.7592593	52.46854193	124.3545455	54.7924806
TMPRSS3	220177_s_at	0.00148597	126.7518519	37.14802376	114.6363636	38.33781604
tmub2	218419_s_at	0.0255014	156.5518519	35.86398848	143.6590909	30.4330281
TMX4	201580_s_at	0.00578378	485.262963	95.83793672	628.7227273	188.5762873
TNFRSF1B	203508_at	0.00338978	88.55925926	31.21513759	70.86818182	34.82671917
Tnfsf12	209499_x_at	0.0134724	181.2740741	82.23566788	174.1363636	64.59201296
TNIK	211828_s_at	0.00185758	364.1962963	109.4893724	484.8863636	102.2415874
Tnip1	207196_s_at	0.00371947	253.4814815	56.57621841	185.4227273	65.61507472
tnks	202561_at	0.0270499	532.762963	93.78602138	635.8090909	146.6162659
tnpo1	212635_at	0.0164314	198.5148148	57.82078215	246.9045455	85.65932789
toe1	204080_at	0.000963247	182.0296296	41.39264906	131.2363636	47.73941713
TOM1	202807_s_at	0.0088126	237.1888889	55.13373484	191.2545455	51.78887293
TOMM20	200662_s_at	0.0147042	2555.659259	520.6821334	2825.963636	731.398221
TOMM70A	201519_at	0.00249119	2987.892593	1047.346992	3578.268182	1018.039736
TOP1	208901_s_at	0.00404954	555.1518519	193.4572848	712.8909091	166.0828018
TOP2B	211987_at	0.0123999	546.7740741	153.2530451	642.3954545	159.3930765

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
TOPBP1	202633_at	0.0123297	165.6037037	40.27257591	222.8272727	81.27983515
Tox4	201684_s_at	0.00713643	567.9	167.2710306	446.9636364	124.3554259
TPD52	201690_s_at	0.0022044	700.6037037	174.5370745	931.9863636	270.249388
TPK1	221218_s_at	0.00719709	103.8148148	27.55048099	127.3772727	21.03461845
tpp2	203374_s_at	0.0120161	108.5518519	30.84644812	139.85	44.77614958
tpp2	203375_s_at	0.0137442	134.9481481	41.79478593	161.0454545	37.95059103
TPSB2	210084_x_at	0.0132307	12.27777778	3.220049371	16.15	7.498809429
TPST2	204079_at	0.0264188	186.7037037	59.0014438	165.9318182	47.51593604
TRAF3IP2	215411_s_at	0.00281089	126.3740741	70.29380973	85.23181818	47.71618859
TRAF5	204352_at	0.0232273	224.4518519	98.19579879	266.4318182	82.27738442
TRAK1	202080_s_at	0.0012657	281.837037	81.99355579	366.4636364	124.3489045
TRAPPC2P1	219351_at	0.00999296	197.7333333	39.06630458	237.7090909	50.47283955
TRAPPC6A	204985_s_at	0.0149588	320.1148148	82.10290777	252.6818182	77.79520512
TRAV8-6	217170_at	0.0307067	23.11851852	23.63286559	15.12727273	5.119540699
trex1	205875_s_at	0.00590211	77.15925926	31.46275282	45.86818182	26.0837367
trex1	34689_at	0.0123801	301.3814815	62.45119964	255.2409091	66.10484212
Trex2	207891_s_at	0.00296204	132.8555556	48.7340296	99.97727273	39.4436057
Trex2	213334_x_at	0.0017878	387.5259259	113.3114177	287.2818182	71.76518347
trgv7	215345_x_at	0.00294764	35.31111111	24.56334563	63.98636364	30.62604393
TRHDE	219937_at	0.0273926	32.45555556	15.5514613	52.60454545	41.20549521
trim23	204732_s_at	0.00939474	211.7148148	70.45530882	261.0318182	91.33060503
TRIM24	213301_x_at	0.0295629	187.3814815	52.49994166	220.5909091	49.44012164
trim33	212435_at	0.00333983	333.937037	110.1238224	469.4045455	120.6931034
TRIM37	213009_s_at	0.00367474	1267.185185	169.8526527	1458.918182	275.9562071
TRIM52	221897_at	0.00593215	133.437037	37.4488076	174.2363636	49.98332622
TRIO	215406_at	0.00383363	13.86296296	12.57892463	7.963636364	4.054456156
Trmt1	210463_x_at	0.00974714	198.0592593	68.95324647	145.5545455	54.58718433
trmt5	221952_x_at	0.0133916	1439.888889	638.2427591	1138.113636	343.3741279
Trmt61a	221907_at	0.00266229	343.6777778	110.6634862	237.8772727	63.7302943
Tro	205028_at	0.00754477	38.64074074	18.84089781	55.82272727	21.78201381
Trpc1	205803_s_at	0.0315371	145.137037	53.84328505	204.35	90.76883118
TSC1	209390_at	0.03112	585.4481481	93.37418672	645.85	70.88436425
TSC22D2	204094_s_at	0.0169594	214.2222222	50.51945043	267.1045455	80.77756924
TSFM	214331_at	0.0068804	57.75555556	38.24259942	87.08636364	37.01467271
Tsga10	213411_at	0.000412132	501.1481481	185.2020983	661.5954545	137.0767824
TSPAN3	200972_at	0.0227419	1692.411111	332.2454842	1967.659091	445.6177656
Tspan31	203227_s_at	0.0270001	789.6259259	241.5127845	596.3272727	212.672841
TSPAN7	202242_at	0.00754576	3250.818519	1039.142047	3967.131818	742.5828723
tspO	202096_s_at	0.00823776	272.5888889	74.91604703	207.2136364	77.01523841
Tspy1	217160_at	0.0256114	15.27777778	7.514362317	15.92727273	7.507024128

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Tssc4	218612_s_at	0.017909	172.7333333	81.64530699	104.3909091	73.46130766
TST	209605_at	0.0165474	471.8888889	273.6859055	248.9318182	142.2258612
TSTA3	201644_at	0.00566554	125.1111111	65.42768958	84.75	52.9106232
TSTA3	36936_at	0.000192799	254.1259259	46.29046747	199.1318182	42.77607683
TTC19	217964_at	0.0199738	705.6259259	194.1410601	824.7636364	233.7186252
TTC23	219838_at	0.0193358	175.7962963	61.98194825	156.8409091	28.8754247
TTC3L	208073_x_at	0.00340674	2556.162963	1087.086514	3095.254545	906.6540574
TTC3L	208662_s_at	0.013273	1699.225926	684.6547651	2135.536364	558.3064584
TTC3L	210645_s_at	0.000369541	1578.844444	755.745375	2260.818182	672.5731227
TTLL12	216251_s_at	0.0320202	351.7777778	66.17353836	327.2227273	71.15306728
TTLL2	217423_at	0.0274217	69.63333333	22.95138675	85.28181818	33.82264156
Ttrap	202266_at	0.0196666	537.962963	158.7122581	674.1045455	163.0853369
TUBA1A	209118_s_at	0.0108849	13395.14815	4094.189989	10504.56364	2883.881605
TUBA4A	212242_at	0.00837219	1559.77037	419.8757562	1053.495455	401.1128763
tuba4b	207490_at	0.00717941	144.962963	42.06923916	109.6772727	34.65293132
tubB	209026_x_at	0.0302107	2262.051852	1240.967858	1732.781818	568.7787516
TUBB2C	208977_x_at	0.0292469	3559.981481	1125.63266	3025.627273	723.7293852
TUBB2C	213726_x_at	0.0328768	3685.396296	1052.060177	3124.8	756.2563354
Tubgcp2	202477_s_at	0.00259609	523.5740741	160.7832669	400.7909091	103.4777036
TUBGCP3	203690_at	0.00582442	129.3555556	64.42354642	158.1090909	64.3871838
TUG1	212337_at	0.00732772	251.9037037	67.82631371	366.4590909	138.6094673
TUG1	222244_s_at	0.00487616	566.6407407	174.1385793	789.7772727	229.1776976
TULP4	218184_at	0.0271218	699.3148148	222.2317254	850.35	167.7894024
tusc2	203272_s_at	0.0104785	320.037037	131.7549244	231.3818182	75.44445851
TUSC3	213423_x_at	0.00918922	629.8777778	249.1908449	780.0318182	318.6895106
TUSC3	209228_x_at	0.0226419	470.2814815	183.659122	577.5818182	237.3666134
tut1	218965_s_at	0.0201963	51.48888889	31.61314641	34.42272727	24.21190049
TXN2	209077_at	0.0148984	620.5555556	131.2739717	538.4	139.7800858
TXN2	209078_s_at	0.0248944	246.762963	96.62827325	204.2454545	55.97364794
TXNIP	201010_s_at	0.00747403	663.4	320.9738343	536.2454545	129.0777312
TXNRD1	201266_at	0.00473555	363.0925926	112.0749094	487.3772727	116.9913222
TYROBP	204122_at	0.0263843	188.1407407	90.32902787	139.6954545	58.113407
UAP1	209340_at	0.0232591	214.0518519	52.11542198	253.9272727	60.46085851
Ubp2l	210500_at	0.003925	34.18148148	18.80713934	26.50909091	18.11571034
ube2b	211763_s_at	0.0144462	710.8518519	223.0481896	810.5863636	212.2256622
ube2d4	65521_at	0.0149258	307.5	73.7273042	288.5454545	72.28066149
UBE2W	218521_s_at	0.00176128	112.9962963	34.42535382	175.8045455	67.1398787
Ube3a	213128_s_at	0.00296664	316.4148148	95.39390685	381.4318182	77.74252612
ubl3	201534_s_at	0.0144802	300.2592593	136.0306845	504.2454545	243.134393
ubl3	201535_at	0.000944736	1510.259259	464.5635911	2071.377273	538.1374058

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UBR2	212756_s_at	0.00121967	110.6296296	28.43487586	140.1409091	26.02018738
UBR2	212760_at	0.000469393	389.8111111	86.14732164	527.5727273	113.0019856
Ubxn1	201871_s_at	0.00468229	662.0074074	192.4238949	479.8	155.2057283
UBXN2B	212934_at	0.0257356	255.9925926	61.86028256	305.6318182	60.29507116
ubxn6	220757_s_at	0.0138757	488.5	164.8197244	355.5954545	119.496545
UHL5	219960_s_at	0.033514	176.0962963	48.78645368	212.25	59.51533416
UHL5	220083_x_at	0.0219701	49.28518519	21.0694402	54.58636364	18.90321957
UFM1	218050_at	0.00326291	314.9851852	107.9867574	417.0681818	111.2988614
UGCG	204881_s_at	0.0135013	493.7703704	112.7269022	633.9772727	193.5841959
Ugt1a1	204532_x_at	0.0272067	156.0518519	67.97333397	125.6727273	50.11935451
Ulk2	204063_s_at	0.0301525	206.137037	39.44844882	239.1	53.53543553
Uqrc1	201903_at	0.0255149	1733.266667	652.80003	1230.268182	494.7246366
Use1	219348_at	0.003412	287.6777778	81.26534569	198.5409091	72.92525632
Use1	221706_s_at	0.0223701	212.3222222	56.31578091	171.4772727	50.86913117
USF2	202152_x_at	0.00788682	882.5555556	214.9151627	676.5409091	173.8573653
USF2	214879_x_at	0.014785	654.8703704	132.580512	508.3454545	161.9561985
USO1	201831_s_at	0.0134451	169.5407407	75.90509894	223.3181818	71.62301197
USO1	201832_s_at	0.00659763	398.6666667	127.3622937	499.7045455	148.7538218
USP15	209475_at	0.000319714	319.037037	69.29271328	428.7590909	93.62485252
USP21	218367_x_at	0.0100722	203.7518519	61.48684268	261.7590909	93.63841631
usp25	220419_s_at	0.0096959	437.4148148	71.98737445	521.7227273	114.9864503
usp33	212513_s_at	0.0100122	657.1407407	136.9770482	763.8136364	189.710989
USP34	212066_s_at	0.00802915	638.0740741	218.5493125	801.1318182	280.7197999
USP46	203870_at	0.000601231	297.2703704	93.25797477	465.1136364	147.836484
usp48	220078_at	0.00597493	132.7296296	66.14395614	152.8409091	43.64118478
usp6	206405_x_at	0.00675432	440.9444444	95.9793621	574.7772727	168.4121501
Usp7	201498_at	0.0112964	704.3074074	274.9891186	772.4909091	205.100593
usp8	202745_at	0.0246361	157.0444444	47.75317415	206.0272727	66.09821827
USP9X	201100_s_at	0.000935802	357.4925926	92.00330231	443.5	117.9872875
UTP14C	203614_at	0.0122794	442.0777778	116.2727574	530.7227273	124.9283449
UXT	218495_at	0.0153182	652.4222222	218.7204527	480.4772727	155.5791758
Vamp4	213480_at	0.0110426	485.7703704	130.6162666	587.4909091	108.0980944
vamp5	204929_s_at	8.31834E-05	173.3222222	59.69652311	121.3227273	55.0211382
Vamp8	202546_at	0.00524412	46.70740741	40.60850542	13.70909091	16.64397243
vat1	208626_s_at	0.00518372	614.7888889	145.1441361	512.7954545	156.2231386
vbp1	201472_at	0.00424551	1142.155556	284.3965181	1280.804545	208.1109674
VENTXP1	216726_at	0.0223493	9.992592593	3.553863112	8.640909091	3.242377007
VKORC1	217949_s_at	0.0214861	302.037037	79.94794532	275.4	68.55435105
VPS13A	214785_at	0.00194966	105.4962963	35.44745278	166.9772727	59.844934
Vps26a	201807_at	0.0209255	1120	268.6817591	1284.104545	214.3307535

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VPS28	218679_s_at	0.00141662	987.6148148	296.7682594	710.6636364	245.41215
vwf	202112_at	0.000428275	530.5777778	164.4143086	370.4272727	135.4692802
WAPAL	212267_at	0.0289065	201.4777778	61.04415384	250.9181818	59.07322846
wars	200629_at	0.0224606	679.062963	127.5056353	554.0045455	131.4769959
WAS	205400_at	0.0160786	39.82222222	27.65264396	30.28181818	23.67762931
WASF1	204165_at	0.000680754	1685.466667	425.9593309	2213.122727	559.026804
Wasf2	221725_at	0.0197768	268.1555556	81.30900382	217.3090909	66.00837544
WASL	205810_s_at	0.0124701	21.46666667	11.22147666	16.65454545	9.6033589
WASL	205809_s_at	0.0204074	433.2962963	205.9408102	555.2136364	222.9582543
WBP4	203599_s_at	0.00549544	272.9777778	76.74717902	354.9545455	96.71402975
Wbscr22	207628_s_at	0.0232891	501.8333333	72.57037963	421.1681818	112.7363354
WDFY3	212602_at	0.0316105	153	54.91066171	212.8863636	82.10275383
WDR11	218090_s_at	0.0326525	164.7074074	41.97149148	195.0272727	65.67508901
WDR37	211383_s_at	0.0253173	222.6888889	47.26943502	256.7409091	55.4649152
WDR44	219297_at	0.00769219	149.3703704	38.47099622	193.1681818	53.91045827
Wdr61	215156_at	0.0213316	137.4111111	78.58058741	176.4772727	77.47856805
WDR7	212880_at	3.39459E-06	817.9666667	199.3419077	1121.981818	258.7248118
WDR74	218278_at	0.00527549	152.4407407	45.38513192	121.5636364	42.28974372
WDR74	221712_s_at	0.00309645	241.2962963	63.54866386	186.8409091	51.23034498
WLS	221958_s_at	0.00379368	312.862963	107.3721965	278.3863636	91.33623542
wnt10b	206213_at	0.0122596	233.8740741	138.6098637	338.8136364	115.7779907
wnt5b	221029_s_at	0.0196637	71.48518519	27.55921881	52.62727273	23.85188785
WRAP53	220258_s_at	0.0136701	30.20740741	24.41180241	15.83636364	7.709891325
wrnip1	218015_s_at	0.0116457	57.97777778	25.51956012	41.08636364	15.06166042
WSB1	201295_s_at	0.0008641	30.44814815	18.91188821	54.94090909	24.53079035
WSCD1	213157_s_at	0.00471431	120.9074074	42.29856268	92.50909091	38.17895093
wt1	216953_s_at	0.00412562	15.71851852	13.09204212	8.154545455	3.601683108
WWP1	212638_s_at	0.00270123	664.0666667	212.9157237	868.7636364	278.1709521
XK	206698_at	0.0144717	146.962963	36.13920892	179.2090909	39.78975591
XPNPEP1	217380_s_at	0.0180335	22.2037037	18.24072961	35.52272727	20.45552508
Xrcc4	210812_at	0.0275037	9.962962963	4.269313415	16.00909091	13.90111024
XRCC6	200792_at	0.00641846	2623.803704	609.9806961	2050.536364	589.8275701
YEATS2	221203_s_at	0.000175753	305.5148148	72.01524253	354.5227273	80.3922167
YIF1A	202418_at	0.00116263	374.8851852	72.83478514	302.5818182	73.14860046
YIPF6	212343_at	0.0248701	241.4074074	87.58557102	313.3772727	84.65407442
YME1L1	201351_s_at	0.0180795	289.6962963	78.51493969	350.4409091	89.85087465
YME1L1	201352_at	0.0272755	630.7444444	232.2870478	777.4181818	254.6257153
YME1L1	216304_x_at	0.0238153	263.3888889	72.6101727	314.7636364	82.16085005
Ythdc2	213077_at	0.0187208	143.8296296	49.09235265	195.1318182	56.18762265
ZAK	218833_at	0.0303535	61.15185185	22.53826439	49.97272727	25.66882827

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zap70	214032_at	0.0118965	27.69259259	20.96394205	40.42272727	25.42550148
zbtb11	204847_at	0.0142097	237.8	66.92939449	309.7454545	97.49615244
ZBTB16	205883_at	0.00431488	179.7037037	72.83101876	140.7818182	49.16403676
ZBTB20	205383_s_at	0.014745	1189.114815	487.795828	1518.372727	390.8758385
Zc3h14	213064_at	0.0113061	282.8888889	97.66539948	374.8	111.468441
ZC3H15	201595_s_at	0.00386158	389.4148148	92.20435374	484.5681818	119.4561501
ZCCHC11	212704_at	0.0271465	210.8777778	77.65543883	288.9954545	90.04090328
ZCCHC14	212655_at	0.030493	206.1925926	89.7430517	273.7863636	61.3696163
zcchc8	218478_s_at	0.00173967	121.237037	28.26967862	171.75	48.4756861
ZDHHC17	212982_at	0.00016695	523.5666667	181.4280786	779.6272727	213.0665941
ZEB1	212758_s_at	0.00508386	321.0481481	120.838498	438.2954545	134.647821
ZEB1	212764_at	0.00261663	519.262963	178.0729823	837.9590909	343.3511886
Zfc3h1	213065_at	0.000387699	292.7296296	80.01711747	415.2545455	96.96460683
ZFHX3	208033_s_at	0.00931097	20.95555556	13.74765248	39.94545455	26.01226318
ZFP36L2	201368_at	0.0192862	364.5407407	85.62639896	497.6090909	209.8911507
ZFPL1	209428_s_at	0.0181403	155.8481481	79.85701342	120.4681818	52.51699395
ZFX	214678_x_at	0.0118258	37.42962963	13.3289683	50.36818182	21.47260461
zgpat	221848_at	0.0013476	92.18148148	53.15345012	41.10454545	30.35779459
zgpat	57539_at	0.00465174	151.637037	56.21522616	104.6	28.83268648
ZMAT4	219877_at	0.00196716	132.3962963	98.4273433	174.4136364	86.71956607
Zmiz1	212124_at	0.028589	582.3407407	100.597795	705.5227273	153.8963131
zmpste24	202939_at	0.0321296	504.7925926	146.5846223	620.65	143.1739926
Zmym4	202051_s_at	0.0205659	336.0555556	61.3489034	420.9409091	98.92595432
zmynd11	202136_at	0.0278584	2068.962963	594.0927143	2441.245455	568.908974
ZNF12	217488_x_at	0.0312498	13.3962963	4.299953621	19.38181818	12.32514412
ZNF12	219571_s_at	0.0281365	167.537037	61.42986713	207.5681818	49.67665339
ZNF131	221842_s_at	0.0277117	126.2222222	42.73185025	177.0909091	69.55167938
ZNF148	203319_s_at	0.00633545	227.8888889	92.85603552	334.5181818	135.1482101
ZNF174	205252_at	0.0302011	187.8	24.57163781	170.1636364	27.90797028
ZNF204P	214823_at	0.0118793	156.2888889	40.94101135	188.5909091	44.6347602
ZNF211	205437_at	0.0175218	103.2925926	37.11392985	128.2136364	34.91809867
znf292	212368_at	0.00167699	465.6962963	151.4499295	669.3954545	181.6426987
ZNF32	209538_at	0.0239884	321.237037	69.16640552	259.1954545	60.62603148
ZNF394	214714_at	0.0238605	106.1740741	67.23184109	78.65909091	34.77397301
ZNF408	219224_x_at	0.000540605	189.6037037	94.40258912	103.5227273	50.71111395
ZNF440	215892_at	0.0206329	38.32592593	21.50712928	47.64090909	27.74030348
ZNF45	222028_at	0.00296503	131.0111111	42.84563826	144.8727273	28.20351518
ZNF460	216273_at	0.00666527	52.64814815	32.70651982	28.85454545	17.60591695
ZNF500	41113_at	0.00559496	93.81851852	27.04893055	82.51818182	21.67993666
ZNF529	215307_at	0.00164618	271.1148148	74.48821643	353.4363636	116.5552701

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
znf574	218762_at	0.0130369	55.20740741	31.94805792	41.03181818	23.38056552
znf574	221844_x_at	0.0210736	923.9481481	338.1187028	1036.154545	273.7183167
ZNF587	219981_x_at	0.0241338	451.7740741	187.2390381	511.1954545	105.8590099
znf593	204175_at	0.013153	311.9333333	103.3476582	209.3454545	60.44092533
ZNF688	213527_s_at	0.00652331	221.3888889	77.60553774	169.5227273	49.34869065
ZNF688	213529_at	0.0034678	53.78518519	24.12352353	33.59090909	25.3574993
ZNF747	206180_x_at	0.00728677	265.6407407	90.73563993	215.8409091	84.78859795
ZNF75D	214813_at	0.00686269	63.93703704	27.80471941	77.47727273	23.60516352
ZNF768	218916_at	0.023467	153.4111111	51.90699029	113.7818182	40.65942913
ZNF804A	215767_at	0.0106307	186.6851852	65.64769434	244.2318182	78.95668726
znf84	204453_at	0.0128237	39.56296296	26.46616342	53.75	27.45855318
ZNF91	206059_at	0.0190582	509.1333333	159.8225699	715.6181818	258.8677115
Znhit1	201541_s_at	0.00678464	566.437037	141.7956687	418.6227273	154.9160078
ZNHIT6	218932_at	0.0215171	235.4296296	67.0943699	274.2136364	43.88338763
ZWILCH	218349_s_at	0.00248835	20.27407407	18.45352984	44.50909091	26.37421015
ZXDB	215263_at	0.00720609	55.67777778	25.09146857	45.19545455	20.85860511
	214376_at	0.00916607	394.9222222	95.61148279	435.6	89.70484937
	207371_at	0.0124008	5.433333333	5.429265427	16.38181818	15.85273407
	208187_s_at	0.0154991	86.67777778	36.45429523	63.85	23.54154888
	208340_at	0.015611	14.59259259	11.53329381	20.52727273	13.78174023
	213156_at	0.017336	213.2518519	104.7797998	299.4181818	91.56385561
	213904_at	0.00149499	1287.144444	487.0809634	1838.972727	588.4411312
	214809_at	0.0135727	30.5962963	15.58748219	44.64090909	21.20549478
	215149_at	0.00128211	143.0444444	44.45982917	226.7363636	92.45282733
	215287_at	0.0087822	134.9185185	44.39718492	187.1045455	72.17460625
	215423_at	0.00225659	253.6148148	83.73964094	344.8227273	101.3045147
	215469_at	0.00108163	42.47777778	22.04372112	72.54090909	31.61602455
	216151_at	0.00850791	15.05925926	18.82601022	7.627272727	10.90042296
	216384_x_at	0.000632713	1110.633333	473.1983516	661.2909091	228.6952285
	216518_at	0.00425202	53.41481481	26.84470588	86.01818182	41.61537761
	216565_x_at	0.019365	201.3592593	111.8266559	170.5227273	74.00315265
	216715_at	0.011029	62.72592593	36.43184989	42.98181818	23.94560575
	217313_at	0.00153461	167.7111111	54.74258175	116.0954545	52.23112078
	217322_x_at	0.0036469	78.17407407	28.70861024	65.44090909	22.09970177
	217435_x_at	0.00185407	47.84074074	27.37027106	73.39090909	46.49840662
	217695_x_at	0.00200642	47.68888889	14.5507952	69.13636364	23.68768106
	220697_at	0.00364399	18.33333333	16.90172954	31.36818182	13.96800379
	220809_at	0.0148045	7.181481481	4.143209183	13.13181818	10.48379186
	AFFX-r2-Bs-phe-5_at	0.0136151	5.822222222	7.672595255	11.86818182	10.56838891
	207879_at	0.0236475	6.040740741	5.353737678	10.10909091	9.906991715

Gene symbol	Probeset	P value	Mean Control	STDEV Control	Mean Heroin	STDEV Heroin
	208278_s_at	0.0273766	7.333333333	3.401244116	10.33181818	6.060204803
	209733_at	0.0273327	164.7777778	48.51633613	200.5863636	55.99195772
	215182_x_at	0.030908	94.75185185	74.66667144	69.18636364	32.87338329
	216406_at	0.0321011	9.914814815	10.9434808	16.91818182	16.37828517
	216527_at	0.0197785	52.81111111	40.40106942	44.42272727	20.9168406
	216794_at	0.0223754	29.27037037	28.26386406	52.05	35.42499454
	216806_at	0.0305296	146.5814815	58.78966443	120.0318182	42.58277526
	216861_at	0.026026	4.822222222	5.495685954	3.55	2.22512707
	217459_at	0.0206226	30.23703704	36.19196838	19.08181818	15.88241425
	217498_at	0.0275511	31.41481481	21.55487993	46.49545455	21.77174834
	220906_at	0.0251465	76.45555556	30.61270894	97.69545455	28.52296447
	220912_at	0.0323135	49.41481481	21.05081222	59.45454545	17.5506811
	221973_at	0.0289132	134.8777778	65.94514231	190.7090909	82.99621282
	222145_at	0.0230974	16.71481481	19.87881949	33.47272727	25.4544632
	222312_s_at	0.0287244	54.75925926	23.81420486	72.62727273	20.24721455

Supplemental Table S4. The most significantly enriched cluster from the gene ontology analysis (Database for Annotation, Visualization and Integrated Discovery v6.7) related to synaptic function.

Annotation Cluster 1	Enrichment Score: 4.638400628756887										
Category	Term	Count	%	PValue	List Total	Pop Hits	Pop Total	Fold Enrichment	Bonferroni	Benjamini	FDR
GOTERM_CC_FAT	GO:0045202~synapse	46	4.590818363	9.27E-08	696	355	12782	2.379682694	4.49E-05	4.49E-05	1.33E-04
GOTERM_CC_FAT	GO:0044456~synapse part	34	3.393213573	1.39E-06	696	246	12782	2.538244089	6.73E-04	2.24E-04	0.001992408
GOTERM_CC_FAT	GO:0014069~postsynaptic density	16	1.596806387	4.89E-06	696	71	12782	4.138578598	0.002363952	5.92E-04	0.007009323
SP_PIR_KEYWORDS	synapse	28	2.794411178	1.26E-05	984	213	19235	2.569659147	0.006523746	5.45E-04	0.018253938
SP_PIR_KEYWORDS	postsynaptic cell membrane	18	1.796407186	4.18E-05	984	110	19235	3.198725055	0.021447983	0.001444378	0.06045516
SP_PIR_KEYWORDS	cell junction	39	3.892215569	1.73E-04	984	399	19235	1.910683721	0.085803097	0.004971451	0.249903844
GOTERM_CC_FAT	GO:0045211~postsynaptic membrane	19	1.896207585	3.70E-04	696	135	12782	2.584695615	0.163804673	0.016131476	0.528423673
GOTERM_CC_FAT	GO:0030054~cell junction	44	4.391217565	0.003685232	696	518	12782	1.559956508	0.832529311	0.074751885	5.154765208

Supplemental Table S5. List of differentially expressed genes related to glutamatergic neurotransmission from the human nucleus accumbens microarray.

Symbol	Gene Name	Function related to Glutamate	Probe ID	Fold Diff	p value	CoM	CoSTD	He M	He STD
ALDH1L1	aldehyde dehydrogenase 1 family, member L1	Glutamine synthesis, glutamate metabolism	205208_at	0.719519882	0.00262464	504.8	123.2	363.2	161.4
STX12	syntaxin 12	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	212111_at	0.788851544	7.40E-11	940.0	273.8	741.5	160.2
LYN	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog	Interacts with glutamate receptors to regulate glutamate-mediated signaling	210754_s_at	0.838678193	0.00128792	86.9	26.1	72.9	30.5
PHGDH	phosphoglycerate dehydrogenase	Glutamine synthesis	201397_at	0.759535939	0.00117179	797.7	286.5	605.9	217.9
asl	argininosuccinate lyase	Glutamine synthesis	204608_at	0.775041829	0.00177278	163.0	35.9	126.3	41.7
PLEKHG3	pleckstrin homology domain containing, family G (with RhoGef domain) member 3	Part of the post-synaptic density	217044_s_at	0.712391775	0.00200988	100.8	59.5	71.8	37.8
HOMER3	homer homolog 3 (Drosophila)	Part of the post-synaptic density	204647_at	0.718056919	2.38E-05	226.4	111.3	162.6	57.5
Cps1	carbamoyl-phosphate synthetase 1, mitochondrial	Glutamine synthesis, glutamate metabolism	217564_s_at	0.683418506	0.00016964	31.6	22.5	21.6	19.9
PLEKH01	pleckstrin homology domain containing, family O member 1	Part of the post-synaptic density	218223_s_at	0.801755853	0.0904817	292.7	88.3	234.7	79.5
Lin7b	lin-7 homolog B (C. elegans)	forms a complex with Dlg (discs large)	219760_at	0.746894325	0.0593337	600.2	172.2	448.3	165.3
STX5	syntaxin 5	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	203330_s_at	0.840906808	0.0857359	147.5	31.1	124.0	48.2
FAH	fumarylacetoacetate hydrolase (fumarylacetoacetase)	Glutamine synthesis	202862_at	0.866001341	0.00216767	154.1	38.1	133.5	47.5
agxt	alanine-glyoxylate aminotransferase	Glutamate metabolism	206957_at	0.708797143	0.000305463	23.4	17.8	16.6	25.7
ctps2	CTP synthase II	Glutamine synthesis	219080_s_at	0.868562831	0.0331049	62.4	27.6	54.2	23.9
FPGS	folypolyglutamate synthase	Glutamate synthesis	202945_at	0.804266298	0.00049188	214.9	54.5	172.9	60.6
LYN	v-yes-1 Yamaguchi sarcoma viral related oncogene homolog	Interacts with glutamate receptors to regulate glutamate-mediated signaling	202625_at	0.825857405	0.00743143	42.4	22.4	35.1	14.8
Ppp1ca	protein phosphatase 1, catalytic subunit, alpha isoform	involved in DARPP32 signaling downstream of glutamate receptor activation	200846_s_at	0.720161402	4.63E-05	634.6	351.7	457.0	207.5
PPP3CC	protein phosphatase 3 (formerly 2B), catalytic subunit, gamma isoform	involved in DARPP32 signaling downstream of glutamate receptor activation	207000_s_at	0.834488644	0.000308712	57.6	21.7	48.1	24.6
Psd4	pleckstrin and Sec7 domain containing 4	Part of the post-synaptic density	215923_s_at	0.801976447	0.00212004	36.0	30.6	28.9	21.4
Qpctl	glutaminyl-peptide cyclotransferase-like	Glutamine/glutamate synthesis	220438_at	0.600366501	6.59E-05	48.0	33.4	28.8	16.1
slc1a4	solute carrier family 1 (glutamate/neutral amino acid transporter), member 4	Glutamate transport	209610_s_at	0.889414673	0.000452779	978.1	434.6	870.0	213.8
STX4	syntaxin 4	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	203530_s_at	0.816623396	0.012235	299.4	59.7	244.5	73.3
Stx8	syntaxin 8	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	204690_at	0.763760724	0.00298378	672.5	254.7	513.7	122.7
Abi1	abl-interactor 1	Localized to the PSD and regulates dendrite formation	209028_s_at	1.286532678	0.0323768	321.1	70.8	413.1	142.5
STX6	syntaxin 6	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	212799_at	1.16365695	0.00043935	567.5	107.0	660.4	79.1
Grm5	glutamate receptor, metabotropic 5	receptor	214217_at	1.602996384	0.00109434	418.6	146.7	671.0	246.9
Syt1	synaptotagmin I	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	203999_at	1.388402947	1.06E-05	2661.8	803.1	3695.7	1037.8
Syt1	synaptotagmin I	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	203998_s_at	1.491909911	6.03E-07	421.6	212.0	629.1	286.7
GRIA2	glutamate receptor, ionotropic, AMPA 2	receptor	205358_at	1.405584094	7.29E-05	2856.0	1135.3	4014.3	1071.3
PSD3	pleckstrin and Sec7 domain containing 3	Part of the post-synaptic density	218613_at	1.331289189	1.13E-07	1174.6	380.5	1563.7	376.0
Akap9	A kinase (PRKA) anchor protein (yotiao) 9	Postsynaptic excitatory synapses; scaffolding proteins that ensure protein kinase target specificity	210962_s_at	1.352397695	0.000276254	269.8	98.9	364.8	101.5
ErbB4	v-erb-a erythroblastic leukemia viral oncogene homolog 4 (avian)	Interacts with neuregulin to modulate NMDA receptors by causing them to be "hypophosphorylated"	214053_at	1.361420346	0.000834179	764.9	233.1	1041.3	338.9

Symbol	Gene Name	Function related to Glutamate	Probe ID	Fold Diff	p value	CoM	CoSTD	He M	He STD
nlg1	neuroligin 1	participates in organization of glutamatergic synapses	205893_at	1.378519933	0.00647114	160.8	37.0	221.7	68.7
DNM3	dynamin 3	Interacts with homer; controls vesicle trafficking	209839_at	1.446917436	0.000899122	710.3	237.7	1027.7	382.6
DLGAP2	discs, large (Drosophila) homolog-associated protein 2	Participate in organization of synapses by regulated cell-cell junctions	216916_s_at	1.300596244	3.54E-08	13.9	4.1	18.1	6.3
Gad1	glutamate decarboxylase 1 (brain, 67kDa)	Glutamine synthesis, glutamate metabolism	205278_at	1.181962338	0.000115257	2835.5	613.6	3351.4	1060.6
Igi1	leucine-rich, glioma inactivated 1	Downregulates glutamatergic synapse function; an epilepsy candidate gene	206349_at	1.318023214	0.000277323	840.7	275.9	1108.0	263.5
DLGAP2	discs, large (Drosophila) homolog-associated protein 2	Participate in organization of synapses by regulated cell-cell junctions	210227_at	1.339679089	6.90E-05	454.7	147.0	609.1	160.6
GLS	glutaminase	Glutamine/glutamate synthesis	203159_at	1.234400475	0.00391125	1492.9	447.5	1842.8	442.3
PPP1R12A	protein phosphatase 1, regulatory (inhibitor) subunit 12A	involved in DARPP32 signaling downstream of glutamate receptor activation	201603_at	1.313608291	0.000151867	248.9	96.8	326.9	108.9
PSD3	pleckstrin and Sec7 domain containing 3	Part of the post-synaptic density	203354_s_at	1.754131769	0.00388377	892.9	343.8	1566.3	892.4
PLCB1	phospholipase C, beta 1 (phosphoinositide-specific)	involved in signaling downstream of glutamate receptor activation	213222_at	1.30651601	0.00890285	1710.0	694.1	2234.1	933.7
PCLO	piccolo (presynaptic cytomatrix protein)	Scaffolding protein that provides structural organization presynaptically for excitatory synapses	213558_at	1.272503679	0.00199762	1164.0	447.8	1481.2	323.3
SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11	Glutamate transport	207528_s_at	1.41229442	0.000895507	60.1	23.3	84.8	37.3
ADCY1	adenylate cyclase 1 (brain)	Calcium sensitive AC that will get activated after excitatory neurotransmission	213245_at	1.259410845	0.0172213	342.6	164.7	431.4	202.5
Nrxn3	neurexin 3	Interact with neuroligins; participates in organization of glutamatergic synapses	205795_at	1.565932158	0.00786083	98.9	61.5	154.9	77.0
PLEKHA5	pleckstrin homology domain containing, family A member 5	Part of the post-synaptic density	220952_s_at	1.229388834	9.22E-05	592.9	303.1	728.9	241.1
Rab11fip2	RAB11 family interacting protein 2 (class I)	involved in recycling of glutamate transporters	203883_s_at	1.33646037	0.0057209	350.9	103.7	468.9	137.0
GFPT1	glutamine-fructose-6-phosphate transaminase 1	Glutamine synthesis, glutamate metabolism	202722_s_at	1.185841251	0.106597	118.0	29.5	140.0	36.0
AKAP5	A kinase (PRKA) anchor protein 5	Postsynaptic excitatory synapses; scaffolding proteins that ensure protein kinase target specificity	207800_at	1.518209193	0.00692543	71.3	33.6	108.3	36.1
SLC7A11	solute carrier family 7, (cationic amino acid transporter, y+ system) member 11	Glutamate transport	209921_at	1.387002094	0.000538279	335.1	113.4	464.8	181.6
ABI2	abl interactor 2	Localized to the PSD and regulates dendrite formation	216113_at	2.253919801	0.00213138	22.2	20.8	50.1	30.7
SLC1A1	solute carrier family 1 (neuronal/epithelial high affinity glutamate transporter, system Xag), member 1	Glutamate transport	213664_at	1.240760306	0.000155762	469.1	134.6	582.1	164.1
ppp3ca	protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform	involved in DARPP32 signaling downstream of glutamate receptor activation	202429_s_at	1.267543295	0.00115464	4333.9	1627.7	5493.4	1593.9
PRKACB	protein kinase, cAMP-dependent, catalytic, beta	involved in signaling downstream of glutamate receptor activation	202741_at	1.226359778	0.059965	5028.7	998.0	6166.9	1534.3
SHANK2	SH3 and multiple ankyrin repeat domains 2	PSD, scaffolding protein at glutamatergic synapses	213308_at	1.512379844	0.000295425	365.1	118.0	552.2	206.2
sdcbp	syndecan binding protein (syntenin)	Binds glutamate receptors; involved in LTP	200958_s_at	1.196817807	0.0352174	1846.5	518.5	2210.0	593.2
AKAP7	A kinase (PRKA) anchor protein 7	Postsynaptic excitatory synapses; scaffolding proteins that ensure protein kinase target specificity	205771_s_at	1.252085322	0.0489185	193.6	55.2	242.4	46.3
Nrxn3	neurexin 3	Interact with neuroligins; participates in organization of glutamatergic synapses	215021_s_at	1.703620955	0.00888573	10.9	5.5	18.6	11.8
Canx	calnexin	Colocalizes with glutamate receptors in ER compartments in dendrites	200068_s_at	1.137466405	0.00556841	2168.6	305.6	2466.7	431.8
CALM3	calmodulin 3 (phosphorylase kinase, delta); calmodulin 2 (phosphorylase kinase, delta); calmodulin 1 (phosphorylase kinase, delta)	Calcium sensitive kinase that will get activated in response to glutamate receptor stimulation	211984_at	1.214846752	9.39E-05	6565.4	1642.4	7976.0	2144.5
GRM3	glutamate receptor, metabotropic 3	receptor	205814_at	1.156044618	0.00655383	1286.7	429.3	1487.5	371.3
camk4	calcium/calmodulin-dependent protein kinase IV	Calcium sensitive kinase that will get activated in response to glutamate receptor stimulation	210349_at	1.319657031	0.0112823	142.2	46.8	187.6	51.2
ppp3ca	protein phosphatase 3 (formerly 2B), catalytic subunit, alpha isoform	involved in DARPP32 signaling downstream of glutamate receptor activation	202457_s_at	1.219414715	0.00304166	5360.5	2052.2	6536.7	1670.0
GPHN	gephyrin	PSD, scaffolding protein at glutamatergic synapses	215578_at	1.468750236	0.00716162	44.6	24.0	65.5	21.5

Symbol	Gene Name	Function related to Glutamate	Probe ID	Fold Diff	p value	CoM	CoSTD	He M	He STD
DLG1	discs, large homolog 1 (Drosophila)	Participate in organization of synapses by regulated cell-cell junctions	202515_at	1.147480908	0.0165006	1497.5	339.3	1718.4	316.4
GRIA1	glutamate receptor, ionotropic, AMPA 1	receptor	209793_at	1.195609808	0.0017351	475.5	121.9	568.5	171.9
Pikfyve	phosphoinositide kinase, FYVE finger containing	Regulates the glutamate transporter	213111_at	1.310251492	2.99E-05	205.7	69.5	269.6	74.0
NBEA	neurobeachin	Scaffolding protein involved in membrane trafficking and signaling	221207_s_at	1.177247591	0.00268495	628.2	299.3	739.6	302.9
ITSN1	intersectin 1 (SH3 domain protein)	Scaffolding protein that regulates vesicle trafficking and neurotransmission by participating in MAPK signaling pathways	209297_at	1.510251052	0.000730752	159.8	94.2	241.4	106.3
PRKCB	protein kinase C, beta	involved in signaling downstream of glutamate receptor activation	207957_s_at	1.242494185	0.0141362	1944.0	939.4	2415.4	962.4
AFTPH	aftiphilin	Enriched in synapses and believed to function in vesicle turnover	217939_s_at	1.136021361	0.0273739	586.3	88.9	666.0	119.7
AKAP6	A kinase (PRKA) anchor protein 6	Postsynaptic excitatory synapses; scaffolding proteins that ensure protein kinase target specificity	205359_at	1.215891748	0.00541697	223.3	52.7	271.5	68.0
ALDH5A1	aldehyde dehydrogenase 5 family, member A1	Glutamine synthesis, glutamate metabolism	203608_at	1.266378599	8.01E-05	698.9	194.1	885.1	290.6
GLS	glutaminase	Glutamine/glutamate synthesis	203157_s_at	1.36392504	1.34E-06	260.7	130.1	355.6	139.4
HOMER1	homer homolog 1 (Drosophila)	Part of the post-synaptic density	213793_s_at	1.168204332	0.00192353	732.0	313.7	855.2	194.6
Jak2	Janus kinase 2	Can modulate activity of glutamate transporters	205842_s_at	1.299821158	0.0305009	77.4	24.3	100.6	32.0
phlda1	pleckstrin homology-like domain, family A, member 1	Part of the post-synaptic density	217997_at	1.183115298	0.128618	433.9	90.0	513.3	134.9
plekha1	pleckstrin homology domain containing, family A (phosphoinositide binding specific) member 1	Part of the post-synaptic density	219024_at	1.188787491	0.00725253	118.6	46.6	141.0	51.8
PLEKHA5	pleckstrin homology domain containing, family A member 5	Part of the post-synaptic density	214989_x_at	1.289713798	8.02E-07	453.5	205.9	584.9	211.4
PPP1R12A	protein phosphatase 1, regulatory (inhibitor) subunit 12A	involved in DARPP32 signaling downstream of glutamate receptor activation	201602_s_at	1.260153765	0.0440252	264.9	118.6	333.8	107.8
PPP1R12A	protein phosphatase 1, regulatory (inhibitor) subunit 12A	involved in DARPP32 signaling downstream of glutamate receptor activation	201604_s_at	1.438086589	0.00151884	93.1	45.4	133.8	57.6
PRKACB	protein kinase, cAMP-dependent, catalytic, beta	involved in signaling downstream of glutamate receptor activation	202742_s_at	1.485478246	0.0268617	944.5	332.0	1403.0	722.4
PRKCB	protein kinase C, beta	involved in signaling downstream of glutamate receptor activation	209685_s_at	1.305990326	0.0147041	1100.8	465.3	1437.6	620.9
PSD3	pleckstrin and Sec7 domain containing 3	Part of the post-synaptic density	203355_s_at	1.23652891	0.0336106	384.0	112.8	474.9	162.7
Rab11fip2	RAB11 family interacting protein 2 (class I)	involved in recycling of glutamate transporters	203884_s_at	1.232237028	0.0100236	279.3	73.3	344.1	92.6
STX7	syntaxin 7	Part a presynaptic membrane complex that releases neurotransmitters from vesicles	212632_at	1.175290777	0.000133108	525.0	121.1	617.0	148.2

Supplemental Table S6. WGCNA analysis. Means of module eigengenes (ME) in control and heroin groups with p and FDR values.

Module	ME: Mean (Control)	ME: Mean (Heroin)	P	FDR
turquoise	-0.06782162	0.07105122	0.000980476	0.00907793
orange	-0.070895165	0.07427112	0.001249632	0.027820049
yellow	0.069764495	-0.07308661	0.001918624	0.03623932
darkgreen	0.064165704	-0.0672212	0.004464288	0.042366086
darkgrey	-0.06305456	0.06605715	0.014723554	0.057396612
greenyellow	-0.054679703	0.057283502	0.015570099	0.0645047
brown	-0.0544336	0.05702568	0.015720095	0.06642123
darkred	-0.054894987	0.057509035	0.015901145	0.067237024
lightcyan	0.058256924	-0.06103106	0.020291066	0.07974015
purple	0.0513953	-0.053842682	0.023439059	0.08797327
red	-0.050776374	0.053194292	0.024768976	0.08830003
grey60	0.038824543	-0.040673338	0.09092399	0.21302246
black	0.038207356	-0.04002675	0.095492825	0.21973296
royalblue	-0.03649535	0.038233224	0.111575164	0.23111999
darkturquoise	0.035128392	-0.036801178	0.12756357	0.23610274
lightgreen	0.0347273	-0.036380976	0.13026358	0.2466229
lightyellow	-0.03287303	0.034438413	0.15236562	0.25554046
white	0.032399148	-0.03394197	0.15861131	0.25991783
skyblue	0.030406438	-0.031854365	0.18607543	0.28400987
tan	-0.02993788	0.031363495	0.196988	0.2856326
magenta	0.024661606	-0.025835969	0.28582183	0.39470634
darkorange	-0.017637515	0.0184774	0.45368692	0.59804183
grey	-0.013198874	0.013827395	0.57154423	0.69391483
midnightblue	-0.01297216	0.013589883	0.57427436	0.72064275
blue	0.011410135	-0.011953481	0.62367165	0.7234591
green	-0.009361117	0.009806885	0.6852034	0.7623411
salmon	0.008571279	-0.008979434	0.70976585	0.7642653
cyan	0.003298298	-0.00345536	0.8882256	0.919948
pink	-0.00122521	0.001283554	0.95784897	0.95784897

Supplemental Table S7. WGCNA analysis. Estimated module membership for each gene using module eigengenes across all modules is shown. MM shows Pearson's correlation and p.MM shows corresponding p values.

(see separate Excel file)

Supplemental References

1. Sullivan SE, Whittard JD, Jacobs MM, Ren Y, Mazloom AR, Caputi FF, et al. (2013): ELK1 transcription factor linked to dysregulated striatal mu opioid receptor signaling network and OPRM1 polymorphism in human heroin abusers. *Biol Psychiatry*. 74:511-519.
2. Buenrostro JD, Wu B, Chang HY, Greenleaf WJ (2015): ATAC-seq: A Method for Assaying Chromatin Accessibility Genome-Wide. *Curr Protoc Mol Biol*. 109:21 29 21-29.