

## **Identification of long noncoding RNAs dysregulated in the midbrain of human cocaine abusers**

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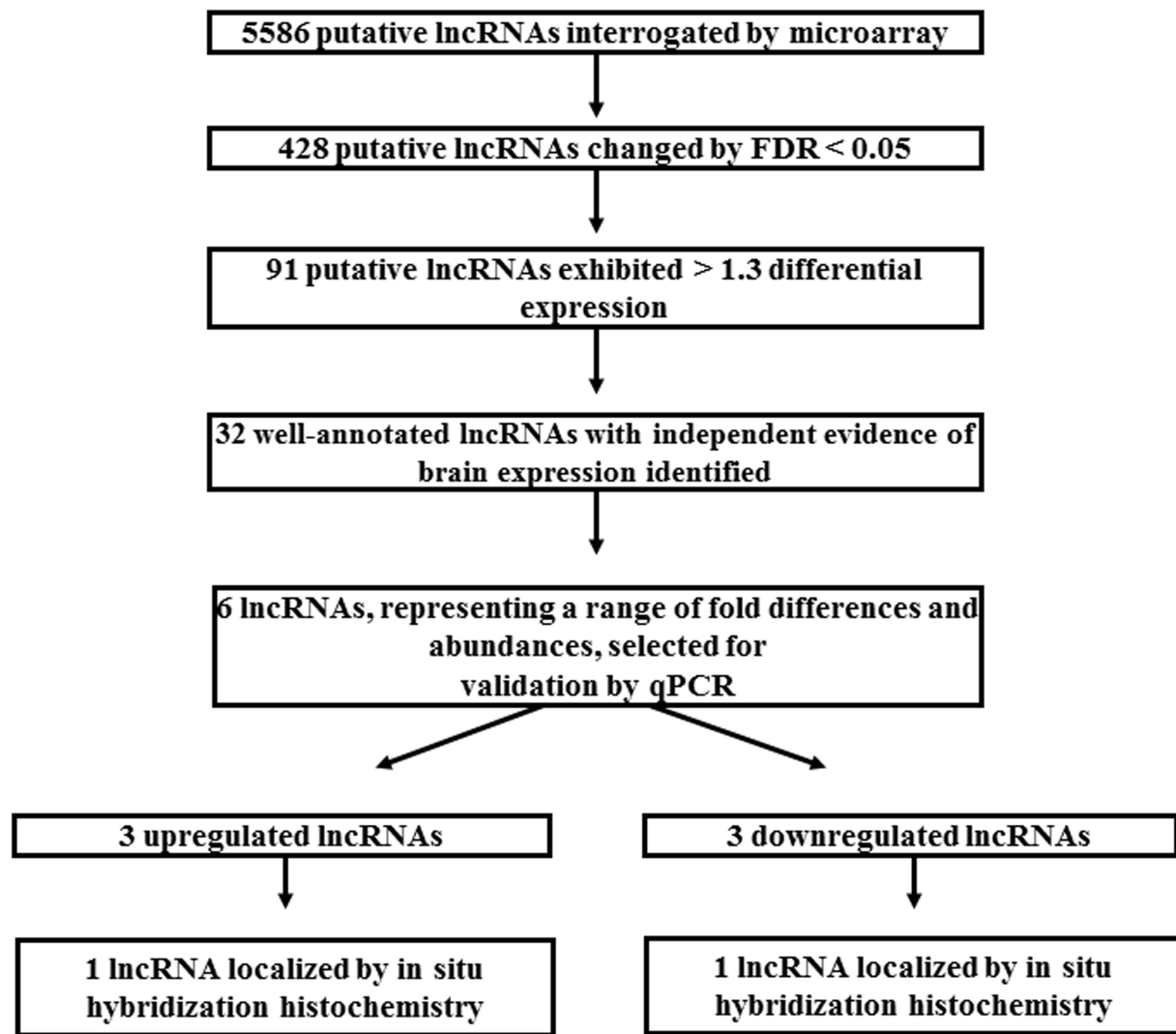
### **Supplementary Information Figures and Tables**

**Figure S1.** Criteria used for selection of lncRNAs for further analyses.

**Table S1.** Sequences of primers used for qPCR validation and of riboprobes used for in situ hybridization histochemistry.

**Table S2.** Absence of correlation between cocaine metabolite benzoylecgonine and differentially expressed lncRNAs from Table 2.

**Table S3.** Gene ontology terms associated with the lncRNA dataset in Table 2.



**Supplementary Figure 1.** Criteria used for selection for lncRNAs for further analyses.

**Supplementary Table 1.** Sequences of primers used for qPCR validation and of riboprobes used for in situ hybridization histochemistry.

<b>RNA</b>	<b>Forward (5'-3')</b>	<b>Reverse (5'-3')</b>	<b>RefSeq ID</b>
<b>LINC00162</b>	GTCCTTTTCCTTGAGTAGGG	AAACATTTCTCTGTTTTTTCAC	NR_024089.2
<b>LINC01314</b>	GAAGGACAAACAGCCTCTGC	GGATTCTCAGGCAGTGCTTC	NR_120317.1
<b>LOC643764</b>	GCCTCTTTTGTGCTGTGA	GCAACCTGTGCCTTTGAAAT	NR_027378.1
<b>LOC100507534</b>	ACTAAGGAATCTGGGAGCTG	TGAATGGGGTAACCACTATG	NR_110649.1
<b>RP1-212P9.2</b>	ACAGCCTGGAAAGGAAGAAG	ACCACAGCAATGAAGTGGAC	BC042916.1*
<b>TRAF3IP2-AS1</b>	GCTGGGTACAGAGGTGATTC	AAATTAACCAGGTGTGGTGG	NR_34108.1 NR_34109.1
<b>TRAF3IP2</b>	GGGGATGTAGGCTAGAATTG	AGAGATGCTTTTGTCCATGT	NM_000164281.2 NM_001164283.2 NM_147686.3
<b>Riboprobe Sequences (5'-3')</b>			<b>RefSeq ID</b>
<b>LINC00162</b>	AAACAUUUCUCUGUUUUCACUCAUGACUGAGCUUUCUCCAUUCGGCC GUGGCCCCACGUGUAGCAGGCACCUGCAGGCUGCCCAUCUUCAC CACAUGUGCUCUCCACCUAAGCAAUGCAGAGAGGCCCGCUGUGGGG GUCGUCCUACUCAAGGAAAAGGAC		NR_024089.2
<b>SLC6A3 (DAT)</b>	CAAGUGUCCUGCUUGGUUAGCUGUGCAGAAGGUGAAAUGGAGG AAACCACAAAUUC AUGCAAAGUCCUUCUCCGAUGCGUGGCUCCCA GCAGAGGCCGUAAAUGAGCGUUCAGUUGACACAUUGCACACACA GUCUGUUCAGAGGCAU		NM_001044.4
<b>TRAF3IP2-AS1</b>	AAAUUAACCAGGUGUGGUGGUGCAUGCCUGUGGUCCCAACAAUA UGGGAGGCUAAGGUGGGAGGAAGACCUGAUCCCAGGAGGGCAAG GUAGUUGUAUGUCCUGGGAAUCACCUCUGUACCCAGCUCUAGCC CACCAUGCUUACCCAGGCACAUGUUCUCACCCU		NR_34108.1, NR_34109.1
<b>TRAF3IP2</b>	AGAGAUGC UUUUGUCCAUGUCAUUUUAUAAAUGAGUCCCUGGAA UCUAAGAAAAGUUAAGGACUUGC UAAAGGUCAUACAGCUAAU GGUGGUAGAACCAAAAUAAGAACACAGACUACAAUUCUAGCCUAC AUCCCC		NM_000164281.2 NM_001164283.2 NM_147686.3

\*No associated NCBI RefSeq Gene ID.

**Supplementary Table 2.** Absence of correlation between cocaine metabolite benzoylecgonine and the differentially expressed lncRNAs from Table 2.

	<b>AC083843.1</b>	<b>AFAP1AS1</b>	<b>AP001505.9</b>	<b>HOTAIRM1</b>	<b>LINC00162</b>	<b>LINC00403</b>	<b>LINC00540</b>	<b>LINC00645</b>
Correlation Coefficient	-.144	.220	.270	-.402	.349	-.119	-.427	.229
p-value 2 tailed	.672	.517	.422	.221	.293	.728	.190	.499
	<b>RNF219-AS1</b>	<b>RP11-109G23.3</b>	<b>RP11-23P13.6</b>	<b>RP11-309G3.3</b>	<b>RP11-388C12.1</b>	<b>RP11-421016.2</b>	<b>RP11-49I11.1</b>	<b>RP11-539L10.3</b>
Correlation Coefficient	.085	.150	-.446	.248	-.346	-.533	-.397	-.342
p-value 2 tailed	.805	.660	.169	.462	.297	.092	.227	.303
	<b>LINC01010</b>	<b>LINC01314</b>	<b>LOC100507140</b>	<b>LOC100507534</b>	<b>LOC101929176</b>	<b>LOC400548</b>	<b>LOC643763</b>	<b>PRKCQ-AS1</b>
Correlation Coefficient	.698*	.180	.472	-.248	-.409	-.191	.160	.221
p-value 2 tailed	.017	.596	.142	.463	.211	.573	.638	.513
	<b>RP11-552F3.9</b>	<b>RP11-553L6.5</b>	<b>RP1-212P9.2</b>	<b>RP4-809F18.2</b>	<b>RPPH1</b>	<b>STX18-AS1</b>	<b>TRAF3IP2-AS1</b>	<b>WDR11-AS1</b>
Correlation Coefficient	-.297	.210	-.346	-.425	.094	.459	-.044	-.578
p-value 2 tailed	.375	.535	.298	.192	.783	.156	.899	.063

\* p &lt; 0.05 level (2-tailed).

**Supplementary Table 3.** Gene ontology terms associated with the lncRNA dataset in Table 2.

<b>GO term name</b>	<b>P-value</b>	<b>Corrected P-value</b>
<b>Cellular Component</b>		
synapse	5.5196E-19	3.2587E-15
synapse part	4.3166E-18	2.3361E-14
neuron part	1.4826E-15	6.8774E-12
cell projection	3.4645E-14	1.2500E-10
neuron projection	4.9304E-14	1.5290E-10
synaptic membrane	2.5252E-13	6.5598E-10
integral to plasma membrane	5.8535E-12	1.4621E-08
intrinsic to plasma membrane	6.8151E-11	1.4277E-07
postsynaptic membrane	1.0176E-10	2.0651E-07
ion channel complex	1.6452E-09	2.7397E-06
plasma membrane	2.2484E-09	3.6504E-06
cell projection part	2.8257E-09	4.4759E-06
cell periphery	2.9574E-09	4.5730E-06
synaptic vesicle	5.5280E-09	8.1592E-06
nucleosome	3.3163E-08	3.7133E-05
synaptic vesicle membrane	5.2706E-08	5.7048E-05
axon	8.0479E-08	8.1665E-05
acrosomal vesicle	1.3674E-07	1.3455E-04
plasma membrane part	2.9958E-07	2.7794E-04
chromatoid body	3.1370E-07	2.8694E-04
<b>Molecular Function</b>		
passive transmembrane transporter activity	7.9432E-15	3.2241E-11
channel activity	7.9432E-15	3.2241E-11
substrate-specific channel activity	1.7975E-14	6.8669E-11
ion channel activity	3.9326E-14	1.3442E-10
gated channel activity	2.4321E-13	6.5598E-10
ion gated channel activity	2.4321E-13	6.5598E-10
metal ion transmembrane transporter activity	2.2322E-10	4.3929E-07
GABA receptor activity	3.2193E-10	6.1491E-07
voltage-gated ion channel activity	7.3777E-10	1.3309E-06
voltage-gated channel activity	7.3777E-10	1.3309E-06
GABA-A receptor activity	1.4608E-09	2.4965E-06
ion transmembrane transporter activity	5.4990E-09	8.1592E-06
voltage-gated cation channel activity	1.0745E-08	1.4241E-05
inorganic cation transmembrane transporter activity	2.5887E-08	3.0021E-05
cation channel activity	2.5625E-08	3.0021E-05
transmembrane transporter activity	2.8241E-08	3.2177E-05
monovalent inorganic cation transmembrane transporter	7.7443E-08	8.1037E-05
sodium ion transmembrane transporter activity	1.2624E-07	1.2613E-04
substrate-specific transmembrane transporter activity	2.0601E-07	1.9675E-04
transmembrane signaling receptor activity	6.4895E-07	5.3348E-04

Results obtained using the LncRNA2Function database (See Materials and Methods). Top 20 terms are shown.