Supplementary Table 1. Cocaine-responsive Putative Targeted Genes of selected miRNAs (from in silico miRNA Target Prediction). Representation of cocaine-specific putative miRNA targeted genes. Arrows (↑) represents genes up-regulated after cocaine administration and (↓) represents genes suppressed. CREB: cAMP-responsive element Binding Protein; SEMA4C and SEMA6A: semaphorin 4C and 6A; BDNF: brain-derived neurotrophic factor; NAC1: nucleus accumbens protein-1; MAP2K4: map-kinase-4; NRP2: Neuropilin-2; PI4K2B: phosphatidyl-inositol-4-kinase-2B; μ-OPIOD R: μ-opioid receptor; GRM5: metabotropic glutamate receptor-5; GRIA2: ionotropic glutamate AMPA-receptor-2.

Supplementary Table 1. Cocaine-responsive Putative Targeted Genes of selected miRNAs (from *in silico* miRNA Target Prediction).

Results of *in silico* micro-RNA target prediction							
miRNA	Targeted Cocaine-responsive Genes						
miR-124	CREB ↑	DAD2R ↑	BDNF ↑	NAC1 ↑	MAP2K4 ↑	SEMA6A ↑	NRP2 ↑
let-7d	μ-Opioid R ↑	DAD3R ↑	PLAU ↑	SEMA4C ↑	MAP2K4 ↑	SEMA6A ↑	NRP2 ↑
miR-181a	PI4K2B ↓	RGS4 ↓	GRM5 ↓	GRIA2 ↓	Per2 ↑		

Supplementary Table 2. in situ hybridization analysis of expression pattern of miRNA. Representative results of the in situ experiment; (−) represents down-regulation, (+) represents up-regulation and (N) represents no change. (−) or (+): $P < 0.05$; (−−) or (++): $P < 0.01$; (−−−) or (+++): $P < 0.001$ by two-way ANOVA, Bonferroni post hoc tests. Normalization was done with saline-treated samples (see Fig. 6).

Supplementary Table 2. In situ hybridization analysis of expression patterns of miRNAs in rat brain.

Brain region	miR-124	let-7d	miR-181a
Olfactory system			
Nucleus of lateral olfactory tract (lateral)	N	N	N
Islands of Calleja	N	N	+++
Cortex			
Piriformcortex (Pir)	---	---	+++
Basal ganglia			
Striatum (Caudate putamen)	---	N	+++
Nucleus accumbens, shell	---	---	++
Nucleus accumbens, core	---	---	+
Ventral pallidum	N	N	N
Hippocampus			
Dentate gyrus (DG)	N	-	+++
CA1	---	---	+++
CA2	---	N	N
CA3	---	--	N
Hippocampus pyramidal layers	---	N	N
Amygdala and extended amygdala			
Posterolateral cortical amygdaloid nucleus (PMCo)	---	N	N
basomedial amyg nucleus, posterior (BMP)	---	N	N
basolateral amyg nucleus, posterior (BLP)	--	N	N
medial posterodorsal nuclei of the amygdala (MePD)	N	--	N
Amygdala	---	---	+++
Midbrain			
Substantia nigra (SN)	---	---	N
Ventral tegmental area (VTA)	N	---	++
Hypothalamus			
Arcuate nucleus (Arc)	N	---	N