

**Supplementary Table 1.** Full data for overt cerebral metabolism.

Brain Region	Wild-type (+/+)		<i>Myshkin</i> ( <i>Myk</i> /+)	
	mean	SEM	mean	SEM
<i>Cortex</i>				
<b>Frontal (FCTX)</b>	<b>0.85</b>	± <b>0.05</b>	<b>0.66*</b>	± <b>0.04</b>
<b>Caudal Motor (CMCTX)</b>	<b>1.15</b>	± <b>0.06</b>	<b>0.95**</b>	± <b>0.02</b>
Rostral Motor (RMCTX)	1.06	± 0.08	0.98	± 0.02
Somatosensory (SSCTX)	1.12	± 0.09	0.96	± 0.01
Entorhinal (EC)	0.71	± 0.08	0.59	± 0.02
Dorsolateral Entorhinal (DLECTX)	0.89	± 0.11	0.88	± 0.10
<i>Thalamus</i>				
<b>Ventral Anterior Nucleus (VAthal)</b>	<b>1.21</b>	± <b>0.09</b>	<b>0.99*</b>	± <b>0.02</b>
Ventral Anterior Nucleus (VAthal)	1.12	± 0.09	0.97	± 0.01
Ventral Posterolateral Nucleus (VPLthal)	1.34	± 0.08	1.18	± 0.03
<b>Ventral Posteromedial Nucleus (VPMthal)</b>	<b>1.63</b>	± <b>0.07</b>	<b>1.27***</b>	± <b>0.03</b>
<b>Ventromedial Nucleus (VMthal)</b>	<b>1.64</b>	± <b>0.12</b>	<b>1.33**</b>	± <b>0.02</b>
<i>Basal Ganglia</i>				
Rostral Ventromedial Striatum (RVMStr)	1.01	± 0.08	1.01	± 0.02
Rostral Dorsolateral Striatum (RDLStr)	1.19	± 0.09	1.18	± 0.02
Rostral Dorsomedial Striatum (RDMStr)	1.00	± 0.08	1.08	± 0.04
Rostral Ventrolateral Striatum (RVLStr)	1.16	± 0.07	1.07	± 0.02
Caudal Centromedial Striatum (CCMStr)	1.22	± 0.08	1.09	± 0.03
Caudal Dorsolateral Striatum (CDLStr)	1.17	± 0.05	1.05	± 0.03
Caudal Dorsomedial Striatum (CDMStr)	1.06	± 0.07	0.94	± 0.03
Caudal Ventrolateral Striatum (CVLStr)	1.22	± 0.06	1.14	± 0.02
Globus Pallidus (GP)	0.89	± 0.05	0.79	± 0.03
Substantia Nigra pars Reticulata (SNR)	0.73	± 0.06	0.67	± 0.04
<i>Hippocampus</i>				
CA1	0.75	± 0.08	0.64	± 0.02
CA3	0.65	± 0.02	0.75	± 0.04
<i>Auditory</i>				
Auditory (AudC)	0.96	± 0.04	0.88	± 0.02
Dorsal Cortex of the Inferior Colliculus (DCIC)	1.44	± 0.27	0.93	± 0.07
External Cortex of the Inferior Colliculus (ECIC)	1.88	± 0.24	1.99	± 0.19
Medial Geniculate Nucleus (MG)	0.80	± 0.07	0.90	± 0.02
Olivary Body (OB)	0.89	± 0.08	0.88	± 0.07
<i>Visual</i>				
Dorsolateral Geniculate (DLG)	0.83	± 0.04	0.74	± 0.01
Superior Colliculus (SupC)	0.91	± 0.06	0.97	± 0.03
Superficial Grey Layer of the Superior Colliculus (SGSupC)	0.95	± 0.14	1.12	± 0.05
<i>Neuromodulatory</i>				
Median Raphe (MR)	1.43	± 0.14	1.57	± 0.07
Locus Coeruleus (LC)	0.78	± 0.08	0.82	± 0.03
<i>Periaqueductal Grey</i>				
Caudal PAG (CPAG)	0.57	± 0.11	0.80	± 0.04
<b>Dorsomedial PAG (DMPAG)</b>	<b>0.57</b>	± <b>0.08</b>	<b>0.83**</b>	± <b>0.02</b>
<b>Rostral PAG (RPAG)</b>	<b>0.42</b>	± <b>0.10</b>	<b>0.73*</b>	± <b>0.09</b>
<i>Cerebellum</i>				
Superior Cerebellar Peduncle (SupCPed)	0.96	± 0.09	0.75	± 0.03
Paramedian Lobule (PML)	0.95	± 0.04	0.96	± 0.17
Deep Cerebellar Nuclei (DCN)	0.98	± 0.06	0.98	± 0.10
<i>Pons</i>				

	Gigantocellular Reticular Nucleus (GRt)	0.86	±	0.09	0.88	±	0.06
	Caudal Pontine Reticular Nucleus (CPRt)	1.16	±	0.09	1.35	±	0.05
	Pontine Reticular Formation (PRF)	0.82	±	0.06	0.88	±	0.05
<i>Multimodal</i>							
	Red Nucleus Parvocellular (RNPv)	1.02	±	0.07	1.10	±	0.03
	Red Nucleus Magnocellular (RNMn)	1.08	±	0.04	1.09	±	0.04
	Medial Amygdala (MeA)	0.82	±	0.08	0.87	±	0.04
	Medial Vestibular nucleus (MVN)	1.09	±	0.13	1.26	±	0.09

Bold denotes regions showing significantly different overt cerebral metabolism in *Myk*<sup>+/+</sup> as compared to *+/+* mice. \*denotes  $P < 0.05$ , \*\*denotes  $P < 0.01$  and \*\*\*denotes  $P < 0.001$  significant difference from wild-type control (Welch's *t*-test).