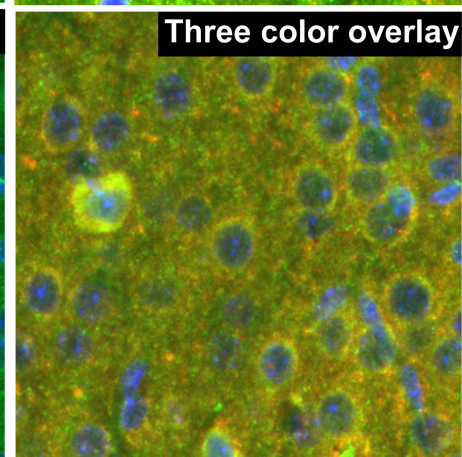
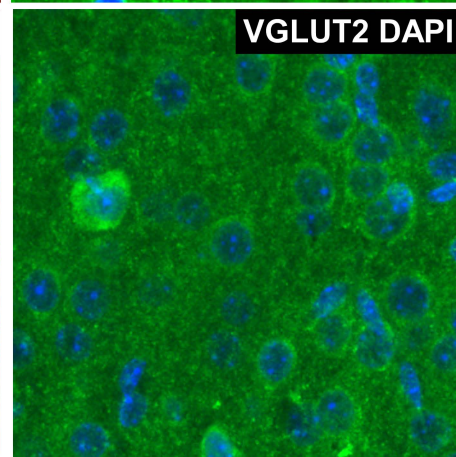
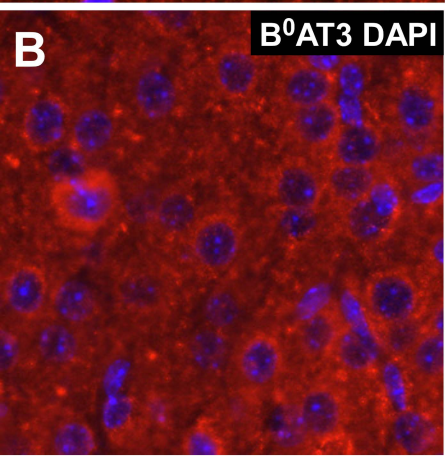
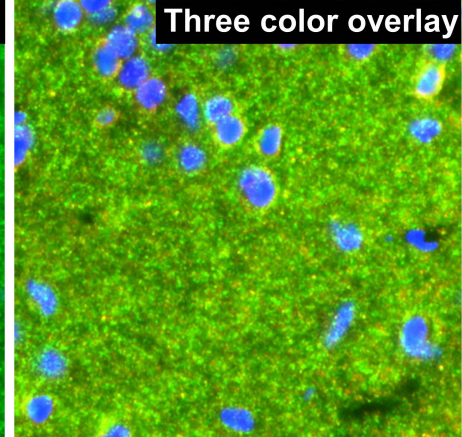
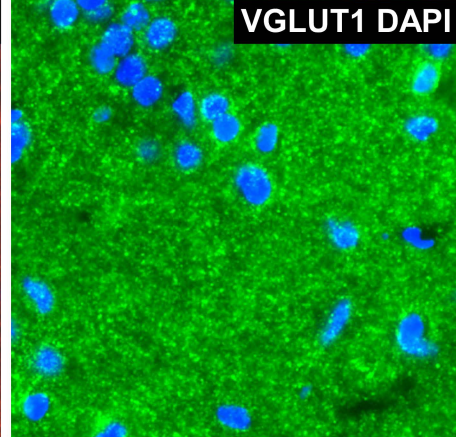
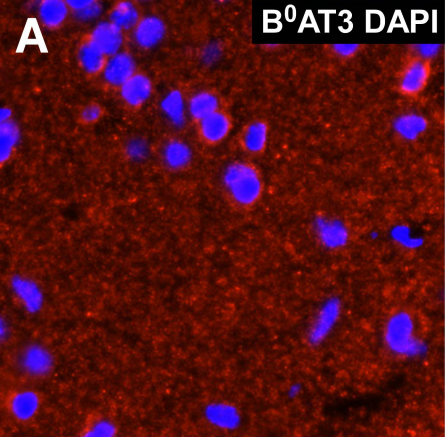


Supplementary Figure 1.

Supplementary Figure 1.

Characterization of the B⁰AT3 antibody. The antibody specificity was investigated by immunohistochemistry on mouse CNS tissues. Double immunohistochemistry with the custom made polyclonal B⁰AT3 antibody made in rabbit (red) and the commercial available B⁰AT3 antibody made in mouse (green) on brain (row A) and spinal cord (row B) tissue. The cell nucleus marker DAPI was stained in blue. **(A)** Co-localization of B⁰AT3 antibodies in cells in cerebral cortex in brain (Bregma -1.06). **(B)** Co-localization of B⁰AT3 antibodies in motor neurons and other cells in spinal cord (L2). Scale bar: 10 μm. The immunohistochemistry indicated that the custom made polyclonal B⁰AT3 antibody was epitope specific.



Supplementary Figure 2.

Protein localization of B⁰AT3 to glutamatergic neurons and vesicles. Red staining is B⁰AT3, green staining is VGLUT1 and VGLUT2 respectively and blue is DAPI. **(A)** Overlapping expression between B⁰AT3 and VGLUT1 in cerebral cortex in the brain. **(B)** Overlapping expression for the vesicular marker VGLUT2 and B⁰AT3 in in cerebral cortex in the brain.

Supplementary Table 1. CNS expression of *Slc6a17* mRNA in mouse brain. The scale of estimated *Slc6a17* mRNA expression in the table; (+++) high expression, (++) medium expression, (+) low expression, and (-) not detected.

Tissue	<i>Slc6a17</i> expression
Striatum	
Caudate putamen (striatum) (CPu)	+
Nucleus accumbens, core (NAccC)	+
Septum	
Lateral septal nucleus, dorsal part (LSD)	+++
Lateral septal nucleus, intermediate part (LSI)	+++
Lateral septal nucleus, ventral part (LSV)	++
Septofimbrial nucleus (SFi)	++
Ventral pallidum (VP)	++
Medial forebrain bundle (mfb)	++
Olfactory tubercle (Tu)	++
Nucleus of the vertical limb of the diagonal band (VDB)	+
Islands of Calleja (ICj)	++
Hippocampus	
Pyramidal cell layer of the hippocampus (Py)	+++
Granule cell layer of the dentate gyrus (GrDG)	+++
Cerebral cortex	
Layer 1	-
Layer 2	++
Layer 3	++
Layer 4	+
Layer 5	+++
Layer 6	+

Piriform cortex (Pir)	+++
Indusium griseum (IG)	+++
Thalamus	
Medial habenular nucleus (MHb)	++
Lateral habenular nucleus (LHb)	++
Mediodorsal thalamic nucleus (MD)	++
Laterodorsal thalamic nucleus, dorsomedial part (LDDM)	++
Laterodorsal thalamic nucleus, ventrolateral part (LDVL)	+
Central medial thalamic nucleus (CM)	+
Ventromedial thalamic nucleus (VM)	+
Ventrolateral thalamic nucleus (VL)	+
Ventral posteromedial thalamic nucleus (VPM)	+
Reticular thalamic nucleus (Rt)	+
Bed nucleus of the stria terminalis (BNST)	++
Submedius thalamic nucleus (Sub)	++
Zona incerta (ZI)	+
Hypothalamus	
Septohypothalamic nucleus (SHy)	++
Dorsomedial hypothalamic nucleus (DMH)	++
Ventromedial hypothalamic nucleus, dorsomedial part (VMHDM)	+++
Ventromedial hypothalamic nucleus, central part (VMHC)	++
Ventromedial hypothalamic nucleus, ventrolateral part (VMHVL)	++
Lateral hypothalamus (LH)	++
Arcuate hypothalamic nucleus (Arc)	+++
Paraventricular hypothalamic nucleus (Pa)	+
Anterior hypothalamic area, posterior part (AHP)	+
Amygdala	

Lateral amygdaloid nucleus, dorsolateral part (LaDL)	++
Lateral amygdaloid nucleus, ventrolateral part (LaVL)	++
Basolateral amygdaloid nucleus, anterior part (BLA)	+++
Basolateral amygdaloid nucleus, ventral part (BLV)	+++
Bed nucleus of the stria terminalis, intraamygdaloid (STIA)	+++
Basomedial amygdaloid nucleus, anterior part (BMA)	++
Dorsal endopiriform nucleus (DEn)	++
Ventral endopiriform claustrum (VEn)	++
Medial amygdaloid nucleus, posterodorsal part (MePD)	+
Medial amygdaloid nucleus, posteroventral part (MePV)	+
Central amygdaloid nucleus (Ce)	+
Pons	
Lateral parabrachial nucleus (LPB)	+
Medial parabrachial nucleus (MPB)	++
Locus coeruleus (LC)	++
Barrington's nucleus (Bar)	++
Laterodorsal tegmental nucleus (LDTg)	+
Cerebellum	
Purkinje layer of cells	++
Spinal cord	+
