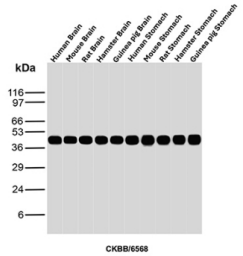
Brain Creatine Kinase Antibody / Creatine kinase B / CKB [clone CKBB/6568] (V4371)

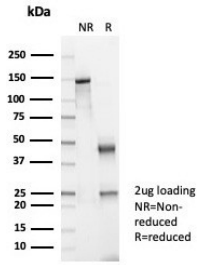
Catalog No.	Formulation	Size
V4371-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4371-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4371SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

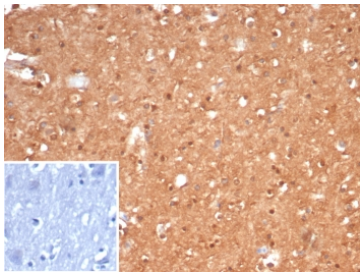
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat, Hamster, Guinea pig
Format	Purified
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	CKBB/6568
Purity	Protein A/G affinity
UniProt	P12277
Localization	Cytoplasm
Applications	ELISA (Order BSA-free Format For Coating) : Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This Brain Creatine Kinase antibody is available for research use only.



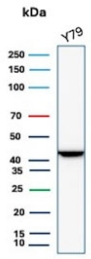
Western blot analysis of Human Brain, Mouse Brain, Rat Brain, Hamster Brain, Guinea pig Brain, Human Stomach, Mouse Stomach, Rat Stomach, Hamster Stomach and Guinea pig Stomach tissue lysates using Brain Creatine Kinase antibody (clone CKBB/6568). Predicted molecular weight ~43 kDa.



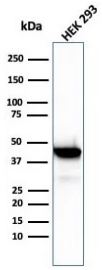
SDS-PAGE analysis of purified, BSA-free Brain Creatine Kinase antibody (clone CKBB/6568) as confirmation of integrity and purity.



IHC staining of FFPE human brain tissue with Brain Creatine Kinase antibody (clone CKBB/6568). Inset: PBS used in place of primary Ab (secondary Ab negative control). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



Western blot testing of human Y79 cell lysate with Brain Creatine Kinase antibody (clone CKBB/6568). Predicted molecular weight ~43 kDa.



Western blot testing of human HEK293 cell lysate with Brain Creatine Kinase antibody (clone CKBB/6568). Predicted molecular weight ~43 kDa.

Description

Brain Creatine kinase antibody detects Creatine kinase B-type, also known as CK-BB or brain-type creatine kinase, an enzyme responsible for sustaining energy homeostasis in cells with high and fluctuating ATP requirements. The UniProt recommended name is Creatine kinase B-type (CKB). This cytosolic enzyme catalyzes the reversible transfer of phosphate between creatine and ATP to form phosphocreatine, serving as an energy buffer system in the brain and other metabolically active tissues.

In neurons, Brain Creatine kinase antibody recognizes an enzyme that enables rapid ATP regeneration to power ion transport, neurotransmission, and vesicle recycling. CKB operates within the phosphocreatine shuttle, transferring phosphate from mitochondria to subcellular sites of energy demand such as Na+/K+-ATPase pumps, synaptic terminals, and actin-based structures. This localized energy delivery supports continuous neural firing and signal transmission even during intense synaptic activity. The CKBB homodimer represents the predominant brain form, while CKMB heterodimers occur in tissues like heart and skeletal muscle.

The CKB gene, located on chromosome 14q32.33, encodes a 381-amino acid cytosolic enzyme belonging to the creatine kinase family of phosphagen kinases. CKB expression is highest in brain and retina, though it is also found in reproductive tissues and certain epithelial cells. The enzyme's catalytic mechanism involves binding ATP and creatine

substrates at adjacent sites, stabilized by magnesium ions. Its activity ensures immediate replenishment of ATP pools under dynamic energy demands. Regulation occurs through oxidative modification, phosphorylation, and cellular redox state adjustments, allowing CKB to respond to metabolic stress.

Clinically, CKBB levels in serum or cerebrospinal fluid serve as biomarkers for neural injury, ischemia, or neurodegeneration. In oncology, elevated CKB expression correlates with aggressive tumor metabolism in cancers such as small-cell lung carcinoma and colorectal adenocarcinoma. By enhancing ATP turnover and cytoskeletal reorganization, CKB promotes survival and motility in rapidly dividing cells. The Brain Creatine kinase antibody is therefore widely used in neuroscience, pathology, and metabolic studies for assessing enzyme distribution, activity, and regulatory dynamics.

Experimental data show that loss of Ckb impairs cognitive performance and energy coupling in neurons, emphasizing its role in maintaining energetic equilibrium. CKB also contributes to photoreceptor signaling, sperm motility, and smooth muscle contraction, highlighting its importance beyond the brain. NSJ Bioreagents provides high-quality Brain Creatine kinase antibody reagents validated for human, mouse, and rat applications, suitable for western blotting, immunohistochemistry, and immunofluorescence research into energy metabolism and cellular resilience.

Application Notes

Optimal dilution of the Brain Creatine Kinase antibody should be determined by the researcher.

Immunogen

Recombinant human full-length protein was used as the immunogen for the Brain Creatine Kinase antibody.

Storage

Aliquot the Brain Creatine Kinase antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.