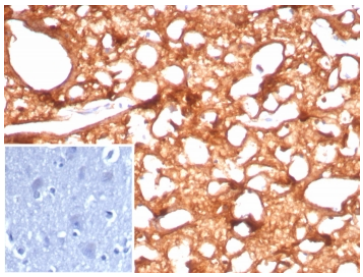
Brain Creatine Kinase Antibody / CKBB [clone CKBB/8843R] (V4380)

Catalog No.	Formulation	Size
V4380-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4380-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4380SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

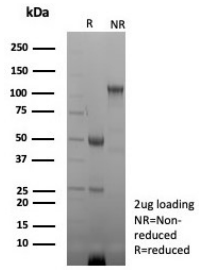
Recombinant RABBIT MONOCLONAL

Bulk quote request

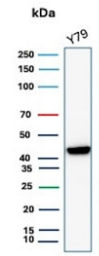
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat, Hamster, Guinea pig
Format	Purified
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	CKBB/8843R
Purity	Protein A/G affinity
UniProt	P12277
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT Western Blot : 2-4ug/ml
Limitations	This Brain Creatine Kinase antibody is available for research use only.



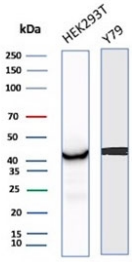
IHC staining of FFPE human brain tissue with Brain Creatine Kinase antibody (clone CKBB/8843R). Inset: PBS used in place of primary Ab (secondary Ab negative control). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



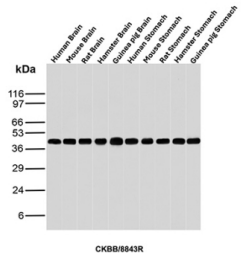
SDS-PAGE analysis of purified, BSA-free Brain Creatine Kinase antibody (clone CKBB/8843R) as confirmation of integrity and purity.



Western blot testing of human Y79 cell lysate with Brain Creatine Kinase antibody (clone CKBB/8843R). Predicted molecular weight ~43 kDa.



Western blot testing of human HEK293 and Y79 cell lysate with Brain Creatine Kinase antibody (clone CKBB/8843R). Predicted molecular weight ~43 kDa.



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/8843R). Predicted molecular weight ~43 kDa.

Description

Brain Creatine kinase antibody detects Creatine kinase B-type, also known as CKBB or brain-type creatine kinase, an ATP-regenerating enzyme that sustains cellular energy homeostasis in neurons and other tissues with high metabolic demand. The UniProt recommended name is Creatine kinase B-type (CKB). This enzyme catalyzes the reversible transfer of phosphate between ATP and creatine, forming phosphocreatine and ADP to maintain a steady ATP supply for critical cellular processes.

In neural tissue, Brain Creatine kinase antibody recognizes the major cytosolic isoform responsible for local ATP regeneration near ion pumps, synaptic vesicles, and cytoskeletal assemblies. CKB functions within the phosphocreatine shuttle, which transfers energy from mitochondria to ATP-utilizing regions of the cell. This mechanism enables neurons to sustain ion transport through Na+/K+-ATPase, support synaptic transmission, and maintain membrane excitability under intense activity. The enzyme's high turnover rate allows rapid adaptation to fluctuating energy needs during neuronal signaling.

The CKB gene, located on chromosome 14q32.33, encodes a 381-amino-acid enzyme that operates as a homodimer. Each monomer contains conserved active-site residues essential for ATP and creatine binding, with magnesium serving as a catalytic cofactor. CKBB is particularly abundant in brain and retina but is also present in testis, kidney, and certain

epithelial tissues. Elevated CKBB levels in cerebrospinal fluid or plasma are clinical indicators of neural damage, stroke, or hypoxic stress. Dysregulated CKB expression has also been associated with tumor progression, as cancer cells exploit its energy-buffering function to sustain proliferation and migration.

Brain Creatine kinase antibody is an essential tool for studies involving neuronal metabolism, oxidative stress, and energy transfer. The enzyme interacts with cytoskeletal elements, ensuring that ATP regeneration occurs precisely where energy demand is highest. Experimental inhibition or deletion of Ckb leads to diminished phosphocreatine reserves, impaired neurotransmission, and increased vulnerability to metabolic stress. These characteristics establish CKB as a fundamental component of cellular resilience and bioenergetic regulation.

Outside the central nervous system, CKB contributes to energy-dependent processes such as sperm motility, smooth muscle contraction, and photoreceptor signaling. It is regulated by redox state, phosphorylation, and transcription factors including CREB and NRF1. Through its role in maintaining intracellular energy balance, CKB supports normal physiological performance across diverse tissues. NSJ Bioreagents provides Brain Creatine kinase antibody reagents validated for research applications in metabolism, neuroscience, and cancer biology.

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.