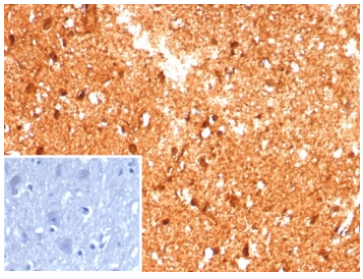
Creatine phosphokinase BB Antibody / CKBB / CKB [clone CKBB/8609R] (V4386)

Catalog No.	Formulation	Size
V4386-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4386-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4386SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

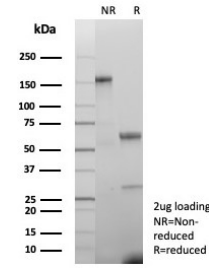
Recombinant RABBIT MONOCLONAL

Bulk quote request

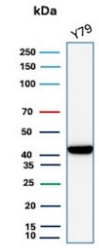
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	CKBB/8609R
Purity	Protein A/G affinity
UniProt	P12277
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT Western Blot : 2-4ug/ml
Limitations	This Creatine phosphokinase BB antibody is available for research use only.



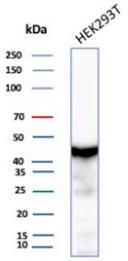
IHC staining of FFPE human brain tissue with Creatine phosphokinase BB antibody (clone CKBB/8609R). Inset: PBS used in place of primary Ab (secondary Ab negative control). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



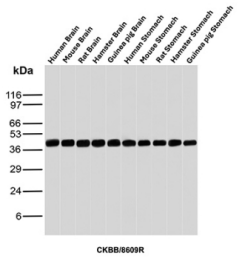
SDS-PAGE analysis of purified, BSA-free Creatine phosphokinase BB antibody (clone CKBB/8609R) as confirmation of integrity and purity.



Western blot testing of human Y79 cell lysate with Creatine phosphokinase BB antibody (clone CKBB/8609R). Predicted molecular weight ~43 kDa.



Western blot testing of human HEK293 cell lysate with Creatine phosphokinase BB antibody (clone CKBB/8609R). 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 Creatine phosphokinase BB antibody (clone CKBB/8609R). Predicted molecular weight ~43 kDa.

Description

Creatine phosphokinase BB antibody detects Creatine kinase B-type, also known as CKBB or CKB, an enzyme essential for maintaining intracellular ATP balance through the reversible transfer of phosphate between ATP and creatine. The UniProt recommended name is Creatine kinase B-type (CKB). This cytosolic enzyme forms the core of the phosphocreatine energy system that buffers and distributes high-energy phosphate bonds to sustain cellular metabolism in high-demand tissues such as brain and smooth muscle.

Functionally, Creatine phosphokinase BB antibody identifies a 43 kDa enzyme that catalyzes the interconversion of ATP and creatine to form phosphocreatine and ADP. This process provides an immediate energy reserve and supports ATP regeneration during intense metabolic activity. In neurons, CKB is concentrated near Na+/K+-ATPase pumps, synaptic vesicles, and cytoskeletal elements, where it rapidly replenishes ATP consumed during electrical signaling and neurotransmission. Its activity is fundamental to preserving membrane potential and maintaining neurotransmitter cycling under high-energy load conditions.

The CKB gene, located on chromosome 14q32.33, encodes a 381-amino-acid cytosolic protein that functions primarily as a homodimer (CKBB). Each subunit contains conserved catalytic residues responsible for binding ATP and creatine. CKB is expressed abundantly in brain, retina, and other excitable tissues but can also be found in reproductive organs and

endocrine cells. Under pathophysiological conditions such as hypoxia, stroke, or trauma, elevated CKBB levels in cerebrospinal fluid or serum indicate neuronal injury or metabolic stress. In oncology, CKB upregulation has been observed in cancers including lung, colorectal, and prostate carcinoma, where it supports tumor bioenergetics and growth by sustaining ATP turnover.

Creatine phosphokinase BB antibody is widely used for detecting and quantifying CKB in western blotting, immunohistochemistry, and ELISA assays. Research applications include studies of neuronal energy metabolism, tumor progression, and oxidative stress response. CKB functions in coordination with mitochondrial creatine kinase to transfer phosphate between energy production and utilization sites, forming the phosphocreatine shuttle system. This mechanism allows rapid ATP replenishment at subcellular regions requiring immediate energy support.

Beyond the nervous system, CKB contributes to energy control in smooth muscle contraction, sperm motility, and photoreceptor function. Its enzymatic activity is influenced by magnesium concentration, pH, and oxidative modifications, allowing fine metabolic regulation. Dysregulation of CKB leads to decreased ATP buffering capacity and impaired cellular performance. By targeting this critical enzyme, Creatine phosphokinase BB antibody enables researchers to explore the molecular mechanisms of energy distribution, cellular stress adaptation, and disease-related metabolic imbalance. NSJ Bioreagents provides antibodies validated for research applications across metabolism, neuroscience, and cancer biology.

Application Notes

Optimal dilution of the Creatine phosphokinase BB antibody should be determined by the researcher.

Immunogen

Recombinant human full-length protein was used as the immunogen for the Creatine phosphokinase BB antibody.

Storage

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

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