

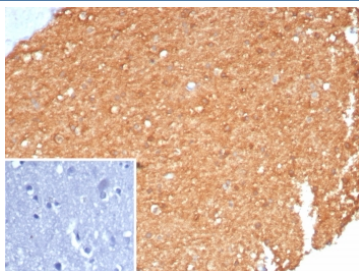
## Recombinant Brain Creatine Kinase Antibody / CKBB / CKB [clone CKBB/8310R] (V4376)

Catalog No.	Formulation	Size
V4376-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4376-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4376SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

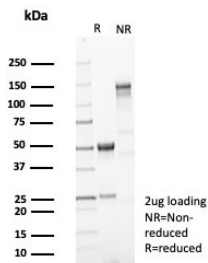
Recombinant **RABBIT MONOCLONAL**

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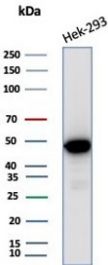
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	CKBB/8310R
Purity	Protein A/G affinity
UniProt	P12277
Localization	Cytoplasm
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This recombinant Brain Creatine Kinase antibody is available for research use only.



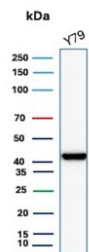
IHC staining of FFPE human brain tissue with recombinant Brain Creatine Kinase antibody (clone CKBB/8310R). Inset: PBS used in place of primary Ab (secondary Ab negative control). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



SDS-PAGE analysis of purified, BSA-free recombinant Brain Creatine Kinase antibody (clone CKBB/8310R) as confirmation of integrity and purity.



Western blot testing of human HEK293 cell lysate with recombinant Brain Creatine Kinase antibody (clone CKBB/8310R). Predicted molecular weight ~43 kDa.



Western blot testing of human Y79 cell lysate with recombinant Brain Creatine Kinase antibody (clone CKBB/8310R). Predicted molecular weight ~43 kDa.

## Description

Recombinant Brain Creatine kinase antibody detects Creatine kinase B-type, also known as CKB or CK-BB, an ATP-regenerating enzyme essential for maintaining energy homeostasis in neurons and other metabolically active cells. The UniProt recommended name is Creatine kinase B-type (CKB). This cytosolic phosphotransferase catalyzes the reversible conversion of ATP and creatine into phosphocreatine and ADP, forming a critical high-energy phosphate reserve for rapid ATP replenishment.

Functionally, Recombinant Brain Creatine kinase antibody identifies a key component of the phosphocreatine shuttle that transfers energy from mitochondria to ATP-utilizing cellular domains. In neural tissue, CKB is concentrated near synaptic vesicles, Na<sup>+</sup>/K<sup>+</sup>-ATPase pumps, and cytoskeletal elements, ensuring localized energy supply for neurotransmission and ion transport. The CKBB isoform predominates in brain and smooth muscle, while the CKMB heterodimer is more common in cardiac and skeletal muscle. This enzyme's strategic distribution allows precise control of energy flux under conditions of high metabolic demand.

The CKB gene is located on chromosome 14q32.33 and encodes a 381-amino acid enzyme highly conserved across species. Structurally, CKB functions as a homodimer, with each subunit containing binding sites for ATP and creatine. Magnesium ions serve as cofactors, stabilizing the transition state during phosphate transfer. CKB expression peaks in neurons and glial cells, reflecting its vital role in brain metabolism. Elevated CKBB levels in cerebrospinal fluid or serum are considered biomarkers for neural damage, hypoxia, and certain neurodegenerative conditions.

Recombinant Brain Creatine kinase antibody is developed using recombinant expression technology to ensure consistent quality and specificity. It is widely used in research investigating cellular energy regulation, neuroprotection, and tumor bioenergetics. Overexpression of CKB has been documented in various cancers, including small-cell lung carcinoma and colorectal adenocarcinoma, where it enhances ATP turnover and supports cell survival under metabolic stress. In contrast, reduced CKB expression impairs neuronal function and contributes to synaptic fatigue and cognitive decline.

Beyond the brain, CKB is expressed in tissues such as retina, testis, and smooth muscle, where it supports energy-dependent activities like contraction and phototransduction. The enzyme is regulated by oxidative state, phosphorylation, and hormonal signaling, adapting to cellular energy fluctuations. Through its role in buffering ATP availability, CKB helps cells maintain functional stability during metabolic stress. NSJ Bioreagents provides Recombinant Brain Creatine kinase antibody validated for research use in studies of metabolism, oxidative stress, and neurological disorders.

## Application Notes

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

## Immunogen

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

## Storage

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