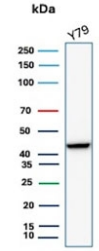
Recombinant CKBB Antibody / Creatine kinase B [clone rCKBB/8842] (V4374)

Catalog No.	Formulation	Size
V4374-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4374-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4374SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

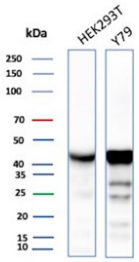
Recombinant | MOUSE MONOCLONAL

Bulk quote request

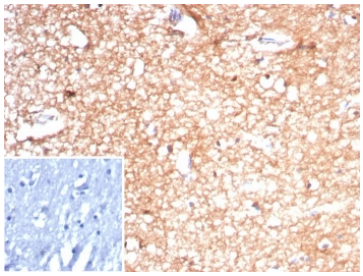
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat, Hamster, Guinea pig
Format	Purified
Host	Mouse
Clonality	Recombinant Mouse Monoclonal
Isotype	Mouse IgG1, kappa
Clone Name	rCKBB/8842
Purity	Protein A/G affinity
UniProt	P12277
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT Western Blot : 2-4ug/ml
Limitations	This recombinant CKBB antibody is available for research use only.



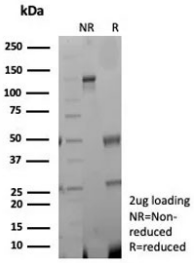
Western blot analysis of Human Brain, Mouse Brain, Rat Brain, Hamster Brain, Guinea pig Brain, Human Stomach, Mouse Stomach, Rat Stomach, Hamster Stomach and Guinea pig Stomach tissue lysates using recombinant CKBB antibody (clone rCKBB/8842). Predicted molecular weight ~43 kDa.



Western blot testing of human HEK293 and Y79 cell lysate with recombinant CKBB antibody. Predicted molecular weight ~43 kDa.



IHC staining of FFPE human brain tissue with recombinant CKBB antibody (clone rCKBB/8842). 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 CKBB antibody (clone rCKBB/8842) as confirmation of integrity and purity.

Description

Recombinant CKBB antibody detects Creatine kinase B-type, also known as brain-type creatine kinase or CKB, an ATP-buffering enzyme that maintains cellular energy stability in tissues with rapid and fluctuating energy needs. The UniProt recommended name is Creatine kinase B-type (CKB). This cytosolic phosphotransferase catalyzes the reversible reaction of ATP and creatine to form phosphocreatine and ADP, providing an immediate source of high-energy phosphate to sustain essential cellular processes.

Functionally, Recombinant CKBB antibody recognizes a 43 kDa enzyme that forms homodimers (CKBB) and cooperates with mitochondrial creatine kinases to transfer phosphate groups between energy-producing and energy-consuming sites. Within neurons, CKB is positioned near Na+/K+-ATPase pumps, vesicle membranes, and cytoskeletal assemblies, ensuring continuous ATP regeneration for neurotransmission and membrane potential maintenance. Its role in the phosphocreatine shuttle enables fast recycling of energy during periods of intense synaptic activity and protects cells from ATP depletion under metabolic stress.

The CKB gene is located on chromosome 14q32.33 and encodes a 381-amino acid enzyme highly conserved across mammals. CKB expression is most prominent in brain, retina, and other excitable tissues, though detectable levels occur in smooth muscle, endocrine cells, and reproductive organs. Elevated CKBB concentrations in serum or cerebrospinal fluid indicate neuronal injury, ischemia, or neurodegeneration. Overexpression of CKB has also been linked to tumor progression in small-cell lung carcinoma, colorectal cancer, and glioblastoma, where it supports ATP turnover and enhances cell motility.

Recombinant CKBB antibody is produced using recombinant expression technology to ensure high purity, reproducibility, and reduced cross-reactivity compared with conventional polyclonal antibodies. It is validated for western blotting, immunofluorescence, immunohistochemistry, and ELISA applications. This reagent is ideal for analyzing brain metabolism, oxidative stress response, and bioenergetic adaptation. Studies using Ckb knockout models demonstrate severe deficits in cognitive performance, impaired energy buffering, and increased sensitivity to hypoxia, confirming the

enzyme's essential function in neural physiology.

Outside the nervous system, CKB supports energy coupling in sperm flagella, retinal photoreceptors, and smooth muscle cells. Regulation occurs through phosphorylation, oxidation, and transcriptional control by CREB, NRF1, and Sp1. By providing reliable detection of this energy-regulating enzyme, Recombinant CKBB antibody is a powerful tool for investigating metabolic resilience, mitochondrial communication, and cancer cell energetics. NSJ Bioreagents supplies this recombinant antibody fully validated for use in human, mouse, and rat samples across metabolic and neurological research fields.

Application Notes

Optimal dilution of the recombinant CKBB antibody should be determined by the researcher.

Immunogen

Recombinant human full-length protein was used as the immunogen for the recombinant CKBB antibody.

Storage

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