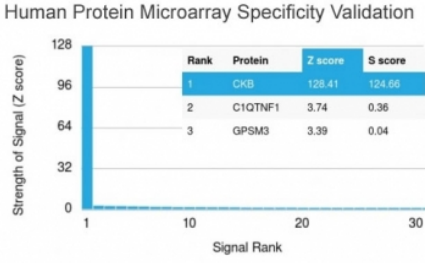
Creatine kinase B Antibody [clone CKB/1268] (V7681)

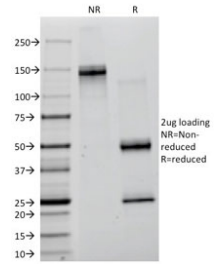
Catalog No.	Formulation	Size
V7681-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V7681-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V7681SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	CKB/1268
Purity	Protein G affinity chromatography
UniProt	P12277
Localization	Cytoplasmic
Applications	ELISA (order BSA-free Format For Coating) :
Limitations	This Creatine kinase B antibody is available for research use only.



Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using Creatine kinase B antibody (clone CKB/1268). These results demonstrate the foremost specificity of the CKB/1268 mAb.
Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.



SDS-PAGE analysis of purified, BSA-free Creatine kinase B antibody (clone CKB/1268) as confirmation of integrity and purity.

Description

Creatine kinase B antibody detects Creatine kinase B-type, an ATP-regenerating enzyme that maintains cellular energy balance by catalyzing the reversible conversion of creatine and ATP to phosphocreatine and ADP. The UniProt recommended name is Creatine kinase B-type (CKB), and it is also referred to as brain creatine kinase, CK-BB, or cytosolic creatine phosphokinase B. CKB belongs to the phosphagen kinase family, serving as a critical energy buffer in tissues with fluctuating energy requirements such as the brain, retina, and smooth muscle.

Within neurons, Creatine kinase B antibody identifies a cytosolic enzyme that localizes near sites of high ATP consumption, including synaptic terminals and ion transport systems. CKB couples energy transfer between mitochondria and localized cellular processes, sustaining rapid energy turnover required for neurotransmission and membrane excitability. By replenishing ATP from phosphocreatine stores, CKB ensures that Na+/K+-ATPase pumps, vesicle recycling, and neurotransmitter release remain uninterrupted during periods of intense neuronal activity. In glial cells, it contributes to metabolic support of neurons by maintaining phosphocreatine equilibrium across energy compartments.

The enzyme forms homodimers (CKBB) or heterodimers with the M-type subunit (CKMB), depending on tissue context. Each subunit contains an ATP-binding pocket and a creatine-binding domain that coordinate phosphate transfer through a conserved catalytic cysteine residue. The Creatine kinase B antibody is widely used in western blot, immunohistochemistry, and immunofluorescence assays to quantify protein expression and localization. Elevated CKBB levels in serum or cerebrospinal fluid indicate neuronal injury or hypoxic stress, making it a valuable biomarker for conditions such as stroke, trauma, and neurodegenerative disease.

The CKB gene, located on chromosome 14q32.33, encodes a 381-amino acid cytosolic enzyme that shares high sequence similarity with creatine kinase M-type (CKM). CKB expression is especially strong in brain and neural crest-derived cells, but it is also present in the retina, testis, and certain epithelial tissues. Transcriptional regulation of CKB occurs through CREB and Sp1 motifs responsive to neuronal activity, hormones, and oxidative conditions. CKBÃ¢Â€Â™s tight association with actin and membrane structures positions it to rapidly buffer ATP/ADP ratios in energy-demanding regions of the cell.

Clinical and experimental research links CKB dysregulation to several pathologies. Overexpression of CKB has been observed in certain tumors, including small-cell lung carcinoma, colorectal adenocarcinoma, and gliomas, where it enhances cancer cell proliferation by supporting energy flux and cytoskeletal rearrangement. Conversely, reduced CKB expression impairs synaptic efficiency and cognitive performance. Mice lacking Ckb exhibit defects in motor coordination, reduced phosphocreatine reserves, and heightened sensitivity to ischemic injury. In cardiac and neural studies, Creatine kinase B antibody serves as a specific marker for brain-type energy metabolism and neuroendocrine tumor characterization.

Structurally, CKB exhibits an N-terminal catalytic core and C-terminal regulatory region arranged in a dimeric interface that enables substrate channeling. Post-translational modifications, including phosphorylation and oxidation, modulate enzyme activity in response to metabolic stress. The enzymeÃ¢Â€Â™s localization to plasma membranes, mitochondria, and cytoskeletal scaffolds facilitates spatially directed ATP regeneration. The Creatine kinase B antibody is therefore widely used for metabolic and structural studies of energy compartmentalization in neurons, muscle, and proliferative cell models.

Beyond its energy transfer function, CKB contributes to redox balance and cellular protection under oxidative stress by stabilizing mitochondrial membrane potential and supporting ATP synthesis. It also plays roles in reproductive and auditory systems where energy coupling is vital for motility and mechanotransduction. NSJ Bioreagents provides validated Creatine kinase B antibody reagents optimized for detecting native and denatured protein forms in human, mouse, and rat tissues. These reagents are suitable for immunocytochemistry, western blotting, and enzyme localization studies across neuroscience and oncology applications.

Application Notes

Optimal dilution of the Creatine kinase B antibody should be determined by the researcher.

Immunogen

Recombinant human full-length protein was used as the immunogen for the Creatine kinase B antibody.

Storage

Store the Creatine kinase B antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).