

# casein kinase II $\beta$ (51): sc-135856

## BACKGROUND

Casein kinase I (also designated CKI) and casein kinase II (CKII) compose a family of serine/threonine protein kinases which are present in all eukaryotes examined to date. Casein kinase I family members, which include casein kinase I $\alpha$ , I $\gamma$ , I $\delta$  and I $\epsilon$ , have been implicated in the control of cytoplasmic and nuclear processes, including DNA replication and repair. CKII is usually expressed as a tetrameric complex consisting of either an  $\alpha$ 2 $\beta$ 2 or an  $\alpha\alpha\beta$ 2 structure. The  $\alpha$  catalytic subunit is stimulated by the  $\beta$  regulatory subunit, which undergoes autophosphorylation. Casein kinase II activity is high in the cytosol and nucleus of proliferating and differentiating cells. Casein kinase II is known to phosphorylate more than 100 different substrates including nuclear oncoproteins, transcription factors and enzymes involved in DNA metabolism.

## REFERENCES

- Lozeman, F.J., et al. 1990. Isolation and characterization of human cDNA clones encoding the  $\alpha$  and the  $\beta$  subunits of casein kinase II. *Biochemistry* 29: 8436-8447.
- Tuazon, P.T., et al. 1991. Casein kinase I and II—multipotential serine protein kinases: structure, function, and regulation. *Adv. Second Messenger Phosphoprotein Res.* 23: 123-164.
- Litchfield, D.W., et al. 1993. Casein kinase II in signal transduction and cell cycle regulation. *Mol. Cell. Biochem.* 127-128: 187-199.
- Graves, P.R., et al. 1993. Molecular cloning, expression, and characterization of a 49 kDa casein kinase I isoform from rat testis. *J. Biol. Chem.* 268: 6394-6401.
- Zhai, L., et al. 1995. Casein kinase I $\gamma$  subfamily. Molecular cloning, expression, and characterization of three mammalian isoforms and complementation of defects in the *Saccharomyces cerevisiae* YCK genes. *J. Biol. Chem.* 270: 12717-12724.
- Fish, K.J., et al. 1995. Isolation and characterization of human casein kinase I $\epsilon$  (CKI), a novel member of the CKI gene family. *J. Biol. Chem.* 270: 14875-14883.
- Allende, J.E., et al. 1995. Protein kinases 4. Protein kinase CKII: an enzyme with multiple substrates and a puzzling regulation. *FASEB J.* 9: 313-323.

## CHROMOSOMAL LOCATION

Genetic locus: CSNK2B (human) mapping to 6p21.33; Csnk2b (mouse) mapping to 17 B1.

## SOURCE

casein kinase II $\beta$  (51) is a mouse monoclonal antibody raised against amino acids 21-215 of casein kinase II $\beta$  of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

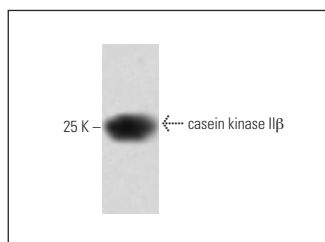
casein kinase II $\beta$  (51) is recommended for detection of casein kinase II $\beta$  of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

Suitable for use as control antibody for casein kinase II $\beta$  siRNA (h): sc-29916, casein kinase II $\beta$  siRNA (m): sc-29917, casein kinase II $\beta$  shRNA Plasmid (h): sc-29916-SH, casein kinase II $\beta$  shRNA Plasmid (m): sc-29917-SH, casein kinase II $\beta$  shRNA(h) Lentiviral Particles: sc-29916-V and casein kinase II $\beta$  shRNA (m) Lentiviral Particles: sc-29917-V.

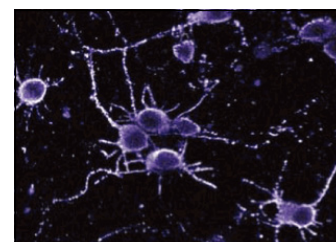
Molecular Weight of casein kinase II $\beta$ : 28 kDa.

Positive Controls: rat brain extract: sc-2392, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

## DATA



casein kinase II $\beta$  (51): sc-135856. Western blot analysis of casein kinase II $\beta$  expression in rat brain tissue extract.



casein kinase II $\beta$  (51): sc-135856. Immunofluorescence staining of rat neuron cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Wang, L., et al. 2018. Changes in potassium channel modulation may underlie afterhyperpolarization plasticity in oxytocin neurons during late pregnancy. *J. Neurophysiol.* 119: 1745-1752.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **casein kinase II $\beta$  (6D5): sc-12739** for casein kinase II $\beta$  antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.