# SANTA CRUZ BIOTECHNOLOGY, INC.

# casein kinase IIβ (FL-215): sc-20710



The Power to Question

#### BACKGROUND

Casein kinase I (also designated CKI) and casein kinase II (also designated CKI) 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. Casein kinase II 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

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- 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.
- 3. Litchfield, D.W., et al. 1993. Casein kinase II in signal transduction and cell cycle regulation. Mol. Cell. Biochem. 127-128: 187-199.
- 4. 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.
- 5. Zhai, L., et al. 1995. Casein kinase I γ 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.
- 6. 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.

### CHROMOSOMAL LOCATION

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

#### SOURCE

casein kinase II $\beta$  (FL-215) is a rabbit polyclonal antibody raised against amino acids 1-215 representing full length casein kinase II $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## **STORAGE**

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

## APPLICATIONS

casein kinase II $\beta$  (FL-215) is recommended for detection of casein kinase II $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffinembedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

casein kinase II $\beta$  (FL-215) is also recommended for detection of casein kinase II $\beta$  in additional species, including equine, canine, bovine, porcine and avian.

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 IIB: 28 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or Hep G2 cell lysate: sc-2227.

## DATA





dase staining of formalin fixed, paraffin-embedded

mouse embryo tissue showing nuclear localization (A).

Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (B)

casein kinase II $\beta$  (FL-215): sc-20710. Western blot analysis of casein kinase II $\beta$  expression in HeLa (A), MCF7 (B), Hep G2 (C) and K-562 (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- 1. Claudio, P.P., et al. 2006. Cdk9 phosphorylates p53 on serine 392 independently of CKII. J. Cell. Physiol. 208: 602-612.
- Gramann, M., et al. 2008. Prominent collagen type VI expression in juvenile angiofibromas. Histochem. Cell Biol. 131: 155-164.
- 3. Chong, R., et al. 2009. Regulatory mimicry in *Listeria monocytogenes* actin-based motility. Cell Host Microbe 6: 268-278.
- 4. Lin, K.Y., et al. 2010. Overexpression of nuclear protein kinase CK2  $\beta$  subunit and prognosis in human gastric carcinoma. Ann. Surg. Oncol. 17: 1695-1702.

#### **RESEARCH USE**

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