

# casein kinase I $\alpha$ (D-9): sc-74583

## 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, membrane trafficking, circadian rhythm, cell cycle progression, chromosome segregation, apoptosis and cellular differentiation. Casein kinase I isoform  $\alpha$ -like (CSNK1A1L) is a 337 amino acid protein that shares a high degree of sequence similarity with the  $\alpha$  isoform of casein kinase 1. CSNK1A1L resides in the cytoplasm and participates in the Wnt signaling pathway. By utilizing ATP within its protein kinase domain, CSNK1A1L phosphorylates a large number of proteins.

## REFERENCES

- Tuazon, P.T. and Traugh, J.A. 1991. Casein kinase I and II-multipotential serine protein kinases: structure, function and regulation. *Adv. Second Messenger Phosphoprotein Res.* 23: 123-164.
- 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.
- Knippschild, U., et al. 2005. The role of the casein kinase 1 (CK1) family in different signaling pathways linked to cancer development. *Onkologie* 28: 508-514.
- SWISS-PROT/TrEMBL (Q8N752). World Wide Web URL: <http://www.uniprot.org/uniprot/Q8N752>

## CHROMOSOMAL LOCATION

Genetic locus: CSNK1A1 (human) mapping to 5q32, CSNK1A1L (human) mapping to 13q13.3; Csnk1a1 (mouse) mapping to 18 E1.

## SOURCE

casein kinase I $\alpha$  (D-9) is a mouse monoclonal antibody raised against amino acids 281-337 mapping at the C-terminus of casein kinase I $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain 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 I $\alpha$  (D-9) is recommended for detection of casein kinase I $\alpha$  of mouse and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); also recommended for detection of CSNK1A1L of human origin.

casein kinase I $\alpha$  (D-9) is also recommended for detection of casein kinase I $\alpha$  in additional species, including avian.

Suitable for use as control antibody for casein kinase I $\alpha$  siRNA (h): sc-29912, casein kinase I $\alpha$  siRNA (m): sc-29913, casein kinase I $\alpha$  shRNA Plasmid (h): sc-29912-SH, casein kinase I $\alpha$  shRNA Plasmid (m): sc-29913-SH, casein kinase I $\alpha$  shRNA (h) Lentiviral Particles: sc-29912-V and casein kinase I $\alpha$  shRNA (m) Lentiviral Particles: sc-29913-V.

Molecular Weight of casein kinase I $\alpha$ : 38 kDa.

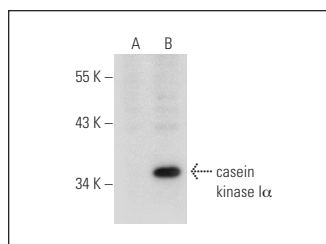
Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or BJAB whole cell lysate: sc-2207.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:

- Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.
- Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



casein kinase I $\alpha$ / $\beta$  (D-9): sc-74583. Western blot analysis of casein kinase I $\alpha$  expression in non-transfected (A) and human casein kinase I $\alpha$  transfected (B) 293 whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

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