SANTA CRUZ BIOTECHNOLOGY, INC.

casein kinase Iε (A-2): sc-373912

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Iα, Iγ, Iδ and Iε, 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 a catalytic subunit is stimulated by the β 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

1. Lozeman, F.J., et al. 1990. Isolation and characterization of human cDNA clones encoding the α and the α' subunits of casein kinase II. Biochemistry 29: 8436-8447.
2. 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, expresion, and characterization of a 49 kDa casein kinase I isoform from rat testis. J. Biol. Chem. 268: 6394-6401.
5. Allende, J.E., et al. 1995. Protein kinases. 4. Protein kinase CK2: an enzyme with multiple substrates and a puzzling regulation. FASEB J. 9: 313-323.

CHROMOSOMAL LOCATION

Genetic locus: CSNK1D (human) mapping to 17q25.3, CSNK1E (human) mapping to 22q13.1; Csnk1d (mouse) mapping to 11 E2, Csnk1e (mouse) mapping to 15 E1.

SOURCE

casein kinase Iε (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 371-402 near the C-terminus of casein kinase Iε of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-373912 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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 Iε (A-2) is recommended for detection of casein kinase Iδ and casein kinase Iε of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

casein kinase Iε (A-2) is also recommended for detection of casein kinase Iδ and casein kinase Iε in additional species, including equine, canine, porcine and avian.

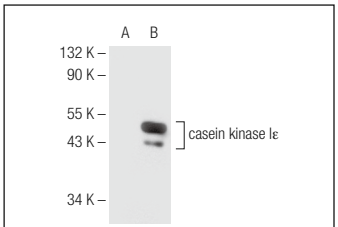
Molecular Weight of casein kinase Iε: 48 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, K-562 whole cell lysate: sc-2203 or casein kinase Iε (h3): 293 Lysate: sc-159784.

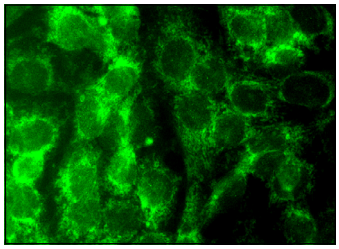
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Iε (A-2): sc-373912. Western blot analysis of casein kinase Iε expression in non-transfected: sc-110760 (**A**) and human casein kinase Iε transfected: sc-159784 (**B**) 293 whole cell lysates.



casein kinase Iε (A-2): sc-373912. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Shen, S., et al. 2018. Induction of Huh-7 cell apoptosis by HCV core proteins via CK1α-p53-Bid signaling pathway. Mol. Med. Rep. 17: 7559-7566.
2. Sharma, M., et al. 2021. Dishevelled-1 DIX and PDZ domain lysine residues regulate oncogenic Wnt signaling. Oncotarget 12: 2234-2251.
3. Sato, F., et al. 2022. Differential immunohistochemical expression of DEC1, CK-1ε, and CD44 in oral atypical squamous epithelium and carcinoma *in situ*. Mol. Med. Rep. 25: 159.

RESEARCH USE

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