

casein kinase I ϵ (D-7): sc-365259

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 α , I γ , I δ and I ϵ , 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 α 2 β 2 or an α α ' β 2 structure. The 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 I 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 α and the α' 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.
- 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.
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CHROMOSOMAL LOCATION

Genetic locus: CSNK1E (human) mapping to 22q13.1.

SOURCE

casein kinase I ϵ (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 393-415 at the C-terminus of casein kinase I ϵ of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365259 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

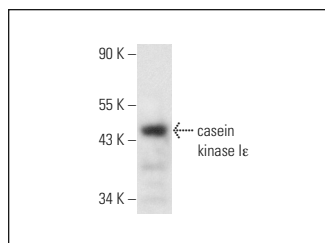
casein kinase I ϵ (D-7) is recommended for detection of casein kinase I ϵ of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for casein kinase I ϵ siRNA (h): sc-29914, casein kinase I ϵ shRNA Plasmid (h): sc-29914-SH and casein kinase I ϵ shRNA (h) Lentiviral Particles: sc-29914-V.

Molecular Weight of casein kinase I ϵ : 48 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or BJAB whole cell lysate: sc-2207.

DATA



casein kinase I ϵ (D-7): sc-365259. Western blot analysis of casein kinase I ϵ expression in K-562 whole cell lysate.

SELECT PRODUCT CITATIONS

- Hutchinson, J.A., et al. 2011. Regulation of ribosomal protein S6 phosphorylation by casein kinase 1 and protein phosphatase 1. *J. Biol. Chem.* 286: 8688-8696.
- Shanware, N.P., et al. 2011. Casein kinase 1-dependent phosphorylation of familial advanced sleep phase syndrome-associated residues controls PERIOD 2 stability. *J. Biol. Chem.* 286: 12766-12774.
- Wang, L., et al. 2014. Regulation of the phosphorylation and nuclear import and export of β -catenin by APC and its cancer-related truncated form. *J. Cell Sci.* 127: 1647-1659.
- Wu, R., et al. 2021. Phosphorylation of *trans*-active response DNA-binding protein-of 43 kDa promotes its cytoplasmic aggregation and modulates its function in Tau mRNA stability and exon 10 alternative splicing. *J. Neurochem.* 158: 766-778.

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.