

casein kinase II α (2-320): sc-4454 WB

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 $\alpha\alpha'\beta$ 2 structure. The α 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

- Lozeman, F.J., Litchfield, D.W., Piening, C., Takio, K., Walsh, K.A. and Krebs, E.G. 1990. Isolation and characterization of human cDNA clones encoding the α and the α' subunits of casein kinase II. *Biochem.* 29: 8436-8447.
- 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., Haas, D.W., Hagedorn, C.H., DePaoli-Roach, A.A. and Roach, P.J. 1993. Molecular cloning, expression, and characterization of a 49 kDa casein kinase I isoform from rat testis. *J. Biol. Chem.* 268: 6394-6401.
- Litchfield, D.W. and Luscher, B. 1993. Casein kinase II in signal transduction and cell cycle regulation. *Mol. Cell. Biochem.* 127-128: 187-199.
- Zhai, L., Graves, P.R., Robinson, L.C., Italiano, M., Culbertson, M.R., Rowles, J., Cobb, M.H., DePaoli-Roach, A.A. and Roach, P.J. 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.
- Fish, K.J., Cegielska, A., Getman, M.E., Landes, G.M. and Virshup, D.M. 1995. Isolation and characterization of human casein kinase I ϵ (CKI), a novel member of the CKI gene family. *J. Biol. Chem.* 270: 14875-14883.
- Allende, J.E. and Allende, C.C. 1995. Protein kinases. 4. Protein kinase CK2: an enzyme with multiple substrates and a puzzling regulation. *FASEB J.* 9: 313-323.

SOURCE

casein kinase II α (2-320) is expressed in *E. coli* as a 63 kDa tagged fusion protein corresponding to amino acids 2-320 of casein kinase II α of human origin.

PRODUCT

casein kinase II α (2-320) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

casein kinase II α (2-320) is suitable as a Western blotting control for sc-6480, sc-9030 and sc-12738.

Molecular Weight of casein kinase II α : 42 kDa.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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