

casein kinase II α / α' (31): sc-136281

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 $\alpha\alpha'$ 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 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. *Biochemistry* 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., DePaoliRoach, 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., DePaoliRoach, 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.

CHROMOSOMAL LOCATION

Genetic locus: CSNK2A1 (human) mapping to 20p13, CSNK2A2 (human) mapping to 16q13; Csnk2a1 (mouse) mapping to 2 G3, Csnk2a2 (mouse) mapping to 8 D1.

SOURCE

casein kinase II α / α' (31) is a mouse monoclonal antibody raised against amino acids 1-123 of casein kinase II α of rat origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol, and 0.04% stabilizer protein.

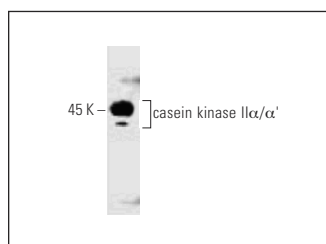
APPLICATIONS

casein kinase II α / α' (31) is recommended for detection of casein kinase II α / α' of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Molecular Weight of casein kinase II α / α' : 42/38 kDa.

Positive Controls: rat cerebellum extract: sc-2398.

DATA



casein kinase II α / α' (31): sc-136281. Western blot analysis of casein kinase II α / α' expression in rat cerebellum tissue extract.

SELECT PRODUCT CITATIONS

- Xu, W., Chen, Q., Wang, Q., Sun, Y., Wang, S., Li, A., Xu, S., Roe, O.D., Wang, M., Zhang, R., Yang, L. and Zhou, J. 2014. JWA reverses cisplatin resistance via the CK2-XRCC1 pathway in human gastric cancer cells. *Cell Death Dis.* 5: e1551.
- Golden, D. and Cantley, L.G. 2015. Casein kinase 2 prevents mesenchymal transformation by maintaining Foxc2 in the cytoplasm. *Oncogene* 34: 4702-4712.

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. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **casein kinase II α (E-7): sc-373894** for casein kinase II α antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.