

casein kinase II α (D-10): sc-365762

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 α , γ , δ and ϵ , have been implicated in the control of cytoplasmic and nuclear processes, including DNA replication and repair. casein kinase II is usually expressed as a tetrameric complex consisting of either an $\alpha_2\beta_2$ 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., 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. 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.

CHROMOSOMAL LOCATION

Genetic locus: CSNK2A2 (human) mapping to 16q21, CSNK2A1 (human) mapping to 20p13; Csnk2a2 (mouse) mapping to 8 D1, Csnk2a1 (mouse) mapping to 2 G3.

SOURCE

casein kinase II α (D-10) is a mouse monoclonal antibody raised against amino acids 1-320 of casein kinase II α of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

casein kinase II α (D-10) is recommended for detection of casein kinase II α and casein kinase II α' of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

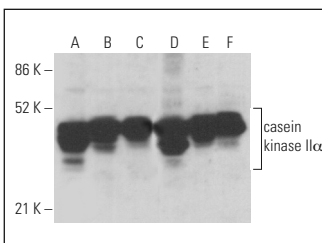
Molecular Weight of casein kinase II α : 42 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HL-60 whole cell lysate: sc-2209 or 3T3-L1 cell lysate: sc-2243.

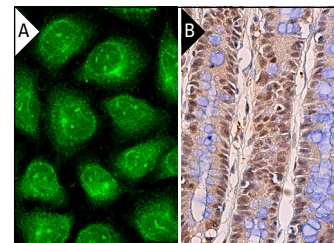
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



casein kinase II α (D-10): sc-365762. Western blot analysis of casein kinase II α expression in Jurkat (A), OVCAR-3 (B), HL-60 (C), 3T3-L1 (D), U-698-M (E) and Caco-2 (F) whole cell lysates.



casein kinase II α (D-10): sc-365762. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human rectum tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Ulreich, K., et al. 2022. High expression of casein kinase 2 α is responsible for enhanced phosphorylation of DNA mismatch repair protein MLH1 and increased tumor mutation rates in colorectal cancer. *Cancers* 14: 1553.
- Hsia, C.R., et al. 2022. Confined migration induces heterochromatin formation and alters chromatin accessibility. *iScience* 25: 104978.

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.

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.