SANTA CRUZ BIOTECHNOLOGY, INC.

casein kinase IIα' (D-7): sc-514403

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. Casein kinase II is usually expressed as a tetrameric complex consisting of either an α2β2 or an αα'β2 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

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: CSNK2A2 (human) mapping to 16q21; Csnk2a1 (mouse) mapping to 2 G3.

SOURCE

casein kinase IIα' (D-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 327-350 at the C-terminus of casein kinase IIα' of human origin.

PRODUCT

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

casein kinase IIα' (D-7) is available conjugated to agarose (sc-514403 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514403 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514403 PE), fluorescein (sc-514403 FITC), Alexa Fluor® 488 (sc-514403 AF488), Alexa Fluor® 546 (sc-514403 AF546), Alexa Fluor® 594 (sc-514403 AF594) or Alexa Fluor® 647 (sc-514403 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514403 AF680) or Alexa Fluor® 790 (sc-514403 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514403 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

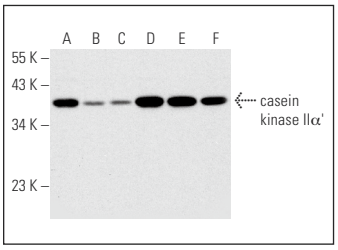
casein kinase IIα' (D-7) is recommended for detection of casein kinase IIα' of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution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

Suitable for use as control antibody for casein kinase IIα' siRNA (h): sc-38963, casein kinase IIα' siRNA (m): sc-38964, casein kinase IIα' shRNA Plasmid (h): sc-38963-SH, casein kinase IIα' shRNA Plasmid (m): sc-38964-SH, casein kinase IIα' shRNA (h) Lentiviral Particles: sc-38963-V and casein kinase IIα' shRNA (m) Lentiviral Particles: sc-38964-V.

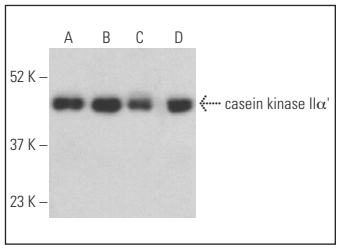
Molecular Weight of casein kinase IIα': 42 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

DATA



casein kinase IIα' (D-7): sc-514403. Western blot analysis of casein kinase IIα' expression in K-562 (**A**) and Jurkat (**B**) nuclear extracts and HeLa (**C**), K-562 (**D**), MOLT-4 (**E**) and MCF7 (**F**) whole cell lysates.



casein kinase IIα' (D-7) HRP: sc-514403 HRP. Direct western blot analysis of casein kinase IIα' expression in K-562 (**A**), MOLT-4 (**B**) and Raji (**D**) whole cell lysates and K-562 nuclear extract (**C**).

SELECT PRODUCT CITATIONS

1. Padilla-Benavides, T., et al. 2017. Casein kinase 2-mediated phosphorylation of Brahma-related gene 1 controls myoblast proliferation and contributes to SWI/SNF complex composition. J. Biol. Chem. 292: 18592-18607.
2. D'Amore, C., et al. 2020. Deciphering the role of protein kinase CK2 in the maturation/stability of CFTR F508del. Biochim. Biophys. Acta Mol. Basis Dis. 1866: 165611.
3. Pinto, M.C., et al. 2020. Regulation of TMEM16A by CK2 and its role in cellular proliferation. Cells 9: 1138.
4. Chojnowski, J.E., et al. 2022. Copper modulates the catalytic activity of protein kinase CK2. Front. Mol. Biosci. 9: 878652.
5. Borgo, C., et al. 2023. Analysis of the phosphoproteome of CK2α$^{(-/-)}$/Δα' C2C12 myoblasts compared to the wild-type cells. Open Biol. 13: 220220.
6. Luo, Y., et al. 2023. CX-4945 inhibits fibroblast-like synoviocytes functions through the CK2-p53 axis to reduce rheumatoid arthritis disease severity. Int. Immunopharmacol. 119: 110163.

RESEARCH USE

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