

# casein kinase II $\alpha$ (N-18): sc-6480

## BACKGROUND

Casein kinase I (also designated CKI) and casein kinase II (also designated CKII) compose a family of serine/threonine protein kinases which are present in all eukaryotes examined to date. CKI family members, which include CKI $\alpha$ ,  $\gamma$ ,  $\epsilon$  and  $\delta$ , 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  $\alpha$ 2 $\beta$ 2 or an  $\alpha$  $\alpha$ ' $\beta$ 2 structure. The  $\alpha$  catalytic subunit is stimulated by the  $\beta$  regulatory subunit, which undergoes autophosphorylation. CKII activity is high in the cytosol and nucleus of proliferating and differentiating cells. CKII 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  $\alpha$  and the  $\alpha'$  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.
- Fish, K.J., et al. 1995. Isolation and characterization of human casein kinase I $\epsilon$  (CKI), a novel member of the CKI gene family. *J. Biol. Chem.* 270: 14875-14883.
- 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.

## CHROMOSOMAL LOCATION

Genetic locus: CSNK2A1 (human) mapping to 20q13; Csnk2a1 (mouse) mapping to 2 G3.

## SOURCE

casein kinase II $\alpha$  (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of casein kinase II $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6480 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-6480 AC, 500 $\mu$ g/0.25 ml agarose in 1 ml.

## 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 II $\alpha$  (N-18) is recommended for detection of casein kinase II $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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); may cross-react with casein kinase II $\alpha'$ . casein kinase II $\alpha$  (N-18) is also recommended for detection of casein kinase II $\alpha$  in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for casein kinase II $\alpha$  siRNA (h): sc-29918, casein kinase II $\alpha$  siRNA (m): sc-29919, casein kinase II $\alpha$  shRNA Plasmid (h): sc-29918-SH, casein kinase II $\alpha$  shRNA Plasmid (m): sc-29919-SH, casein kinase II $\alpha$  shRNA (h) Lentiviral Particles: sc-29918-V and casein kinase II $\alpha$  shRNA (m) Lentiviral Particles: sc-29919-V.

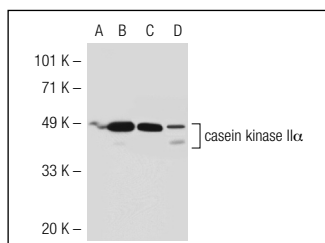
Molecular Weight of casein kinase II $\alpha$ : 42 kDa.

Positive Controls: casein kinase II $\alpha$  (h2): 293T Lysate: sc-117423, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

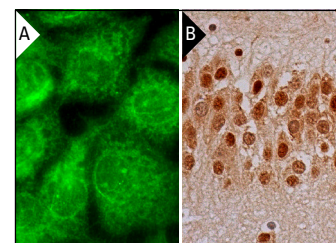
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



casein kinase II $\alpha$  (N-18): sc-6480. Western blot analysis of casein kinase II $\alpha$  expression in non-transfected 293T: sc-117752 (A), human casein kinase II $\alpha$  transfected 293T: sc-116435 (B), human casein kinase II $\alpha$  transfected 293T: sc-117423 (C) and HeLa (D) whole cell lysates.



casein kinase II $\alpha$  (N-18): sc-6480-R. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing nuclear and cytoplasmic staining of neuronal cells and glial cells (B).

## RESEARCH USE

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