

# casein kinase I $\epsilon$ (C-20): sc-6471

## 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. 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  $\alpha\beta\beta 2$  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.

## CHROMOSOMAL LOCATION

Genetic locus: CSNK1E (human) mapping to 22q13.1; Csnk1e (mouse) mapping to 15 E1.

## SOURCE

casein kinase I $\epsilon$  (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of casein kinase I $\epsilon$  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-6471 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-6471 AC, 500  $\mu$ g/0.25 ml agarose in 1 ml.

## APPLICATIONS

casein kinase I $\epsilon$  (C-20) is recommended for detection of casein kinase I $\epsilon$  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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

casein kinase I $\epsilon$  (C-20) is also recommended for detection of casein kinase I $\epsilon$  in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for casein kinase I $\epsilon$  siRNA (h): sc-29914, casein kinase I $\epsilon$  siRNA (m): sc-29915, casein kinase I $\epsilon$  shRNA Plasmid (h): sc-29914-SH, casein kinase I $\epsilon$  shRNA Plasmid (m): sc-29915-SH, casein kinase I $\epsilon$  shRNA (h) Lentiviral Particles: sc-29914-V and casein kinase I $\epsilon$  shRNA (m) Lentiviral Particles: sc-29915-V.

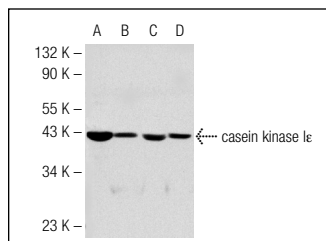
Molecular Weight of casein kinase I $\epsilon$ : 48 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or BJAB whole cell lysate: sc-2207.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



casein kinase I $\epsilon$  (C-20): sc-6471. Western blot analysis of casein kinase I $\epsilon$  expression in HeLa (A), Jurkat (B), BJAB (C) and K-562 (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Lowrey, P.L., et al. 2000. Positional syntenic cloning and functional characterization of the mammalian circadian mutation tau. *Science* 288: 483-492.
- Bryja, V., et al. 2007. Wnt-5a induces Dishevelled phosphorylation and dopaminergic differentiation via a CK1-dependent mechanism. *J. Cell Sci.* 120: 586-595.
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- Modak, C., et al. 2008. Casein kinase I $\epsilon$  positively regulates the Akt pathway in breast cancer cell lines. *Biochem. Biophys. Res. Commun.* 368: 801-807.
- Foldynová-Trantírková, S., et al. 2010. Breast cancer-specific mutations in CK1epsilon inhibit Wnt/ $\beta$ -catenin and activate the Wnt/Rac1/JNK and NFAT pathways to decrease cell adhesion and promote cell migration. *Breast Cancer Res.* 12: R30.
- Bernatik, O., et al. 2011. Sequential activation and inactivation of Dishevelled in the Wnt/ $\beta$ -catenin pathway by casein kinases. *J. Biol. Chem.* 286: 10396-10410.
- Chia, R., et al. 2014. Phosphorylation of LRRK2 by casein kinase 1 $\alpha$  regulates *trans*-Golgi clustering via differential interaction with ARHGEF7. *Nat. Commun.* 5: 5827.

## RESEARCH USE

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

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Try **casein kinase I $\epsilon$  (A-2): sc-373912** or **casein kinase I $\epsilon$  (D-7): sc-365259**, our highly recommended monoclonal alternatives to casein kinase I $\epsilon$  (C-20).