SANTA CRUZ BIOTECHNOLOGY, INC.

# casein kinase Iα (H-7): sc-74582

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, membrane trafficking, circadian rhythm, cell cycle progression, chromosome segregation, apoptosis and cellular differentiation. Casein kinase Iα, also known as CSNK1A1L, is a 337 amino acid protein that shares a high degree of sequence similarity with the α isoform of casein kinase 1. Casein kinase Iα resides in the cytoplasm and participates in the Wnt signaling pathway. By utilizing ATP within its protein kinase domain, Casein kinase Iα phosphorylates a large number of proteins.

## CHROMOSOMAL LOCATION

Genetic locus: CSNK1A1 (human) mapping to 5q32, CSNK1A1L (human) mapping to 13q13.3; Csnk1a1 (mouse) mapping to 18 E1.

## SOURCE

casein kinase Iα (H-7) is a mouse monoclonal antibody raised against amino acids 281-337 mapping at the C-terminus of casein kinase Iα of human origin.

## PRODUCT

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

casein kinase Iα (H-7) is available conjugated to agarose (sc-74582 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74582 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74582 PE), fluorescein (sc-74582 FITC), Alexa Fluor® 488 (sc-74582 AF488), Alexa Fluor® 546 (sc-74582 AF546), Alexa Fluor® 594 (sc-74582 AF594) or Alexa Fluor® 647 (sc-74582 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74582 AF680) or Alexa Fluor® 790 (sc-74582 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

casein kinase Iα (H-7) is recommended for detection of casein kinase Iα 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); also recommended for detection of CSNK1A1L of human origin.

Suitable for use as control antibody for casein kinase Iα siRNA (h): sc-29912, casein kinase Iα siRNA (m): sc-29913, casein kinase Iα shRNA Plasmid (h): sc-29912-SH, casein kinase Iα shRNA Plasmid (m): sc-29913-SH, casein kinase Iα shRNA (h) Lentiviral Particles: sc-29912-V and casein kinase Iα shRNA (m) Lentiviral Particles: sc-29913-V.

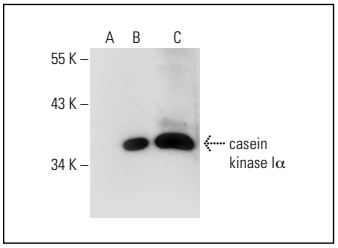
Molecular Weight of casein kinase Iα: 38 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, HeLa whole cell lysate: sc-2200 or KNRK whole cell lysate: sc-2214.

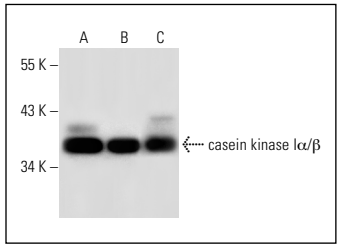
## STORAGE

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

## DATA




casein kinase Iα/β (H-7): sc-74582. Western blot analysis of casein kinase Iα expression in non-transfected 293 (**A**), human casein kinase Iα transfected 293 (**B**) and BJAB (**C**) whole cell lysates.




casein kinase Iα/β (H-7): sc-74582. Western blot analysis of casein kinase Iα/β expression in BJAB (**A**), HeLa (**B**) and KNRK (**C**) whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Cwiek, P., et al. 2015. RNA interference screening identifies a novel role for PCTK1/CDK16 in medulloblastoma with c-Myc amplification. Oncotarget 6: 116-129.
2. Pai, V.C., et al. 2018. ASPM promotes prostate cancer stemness and progression by augmenting Wnt-Dvl-3-β-catenin signaling. Oncogene 38: 1340-1353.
3. Oliveira, L.A., et al. 2019. The canonical Wnt pathway in gastric carcinoma. Arq. Bras. Cir. Dig. 32: e1414.
4. Ren, F., et al. 2020. CK1α-targeting inhibits primary and metastatic colorectal cancer *in vitro, ex vivo,* in cell-line-derived and patient-derived tumor xenograft mice models. Transl. Cancer Res. 9: 1903-1913.
5. Wu, X., et al. 2021. A novel protein encoded by circular SMO RNA is essential for Hedgehog signaling activation and glioblastoma tumorigenicity. Genome Biol. 22: 33.
6. Niu, T., et al. 2021. NLRP3 phosphorylation in its LRR domain critically regulates inflammasome assembly. Nat. Commun. 12: 5862.
7. Fujimoto, M., et al. 2022. HSF1 phosphorylation establishes an active chromatin state via the TRRAP-TIP60 complex and promotes tumorigenesis. Nat. Commun. 13: 4355.
8. Huang, K., et al. 2022. Proto-oncogene FAM83A contributes to casein kinase 1-mediated mitochondrial maintenance and white adipocyte differentiation. J. Biol. Chem. 298: 102339.
9. Gu, M., et al. 2023. Palmitoyltransferase DHHC9 and acyl protein thioesterase APT1 modulate renal fibrosis through regulating β-catenin palmitoylation. Nat. Commun. 14: 6682.


## RESEARCH USE

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