SANTA CRUZ BIOTECHNOLOGY, INC.

PKC ζ (B-7): sc-393218

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Members of the protein kinase C (PKC) family play a key regulatory role in a variety of cellular functions, including cell growth and differentiation, gene expression, hormone secretion and membrane function. PKCs were originally identified as serine/threonine protein kinases whose activity was dependent on calcium and phospholipids. Diacylglycerols (DAG) and tumor promoting phorbol esters bind to and activate PKC. PKCs can be subdivided into at least two major classes, including conventional (c) PKC isoforms (α, βI, βII and γ) and novel (n) PKC isoforms (δ, ε, ζ, η, θ, λ/ι, μ and ν). Patterns of expression for each PKC isoform differ among tissues and PKC family members exhibit clear differences in their cofactor dependencies. For instance, the kinase activities of PKC δ and ε are independent of Ca^{2+}. On the other hand, most of the other PKC members possess phorbol ester-binding activities and kinase activities.

CHROMOSOMAL LOCATION

Genetic locus: PRKCZ (human) mapping to 1p36.33; Prkcz (mouse) mapping to 4 E2.

SOURCE

PKC ζ (B-7) is a mouse monoclonal antibody raised against amino acids 309-592 mapping at the C-terminus of PKC ζ 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.

PKC ζ (B-7) is available conjugated to agarose (sc-393218 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393218 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393218 PE), fluorescein (sc-393218 FITC), Alexa Fluor® 488 (sc-393218 AF488), Alexa Fluor® 546 (sc-393218 AF546), Alexa Fluor® 594 (sc-393218 AF594) or Alexa Fluor® 647 (sc-393218 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393218 AF680) or Alexa Fluor® 790 (sc-393218 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PKC ζ (B-7) is recommended for detection of PKC ζ 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), 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).

PKC ζ (B-7) is also recommended for detection of PKC ζ in additional species, including equine, canine, bovine and porcine.

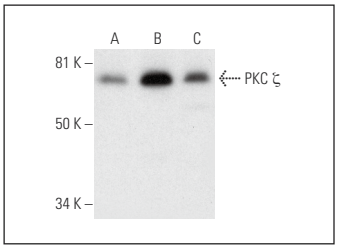
Suitable for use as control antibody for PKC ζ siRNA (h): sc-29451, PKC ζ siRNA (m): sc-36254, PKC ζ shRNA Plasmid (h): sc-29451-SH, PKC ζ shRNA Plasmid (m): sc-36254-SH, PKC ζ shRNA (h) Lentiviral Particles: sc-29451-V and PKC ζ shRNA (m) Lentiviral Particles: sc-36254-V.

Molecular Weight of PKC ζ: 80 kDa.

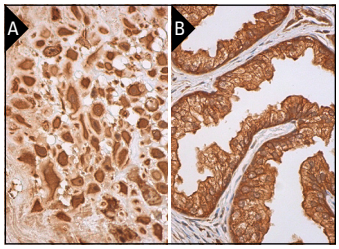
STORAGE

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

DATA



PKC ζ (B-7): sc-393218. Western blot analysis of PKC ζ expression in AML-193 (**A**), 3611-RF (**B**) and NIH/3T3 (**C**) whole cell lysates.



PKC ζ (B-7): sc-393218. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and nuclear staining of decidual cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing cytoplasmic, membrane and nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Miura, T., et al. 2018. O-GlcNAc on PKC ζ inhibits the FGF4-PKCζ-MEK-ERK1/2 pathway via inhibition of PKC ζ phosphorylation in mouse embryonic stem cells. Stem Cell Reports 10: 272-286.
2. Zhang, Z., et al. 2019. TLR4 counteracts BVRA signaling in human leukocytes via differential regulation of AMPK, mTORC1 and mTORC2. Sci. Rep. 9: 7020.
3. Yang, Q., et al. 2019. CD157 confers host resistance to *Mycobacterium tuberculosis* via TLR2-CD157-PKCζ-induced reactive oxygen species production. MBio 10: e01949-19.
4. Tramutola, A., et al. 2020. Brain Insulin resistance triggers early onset Alzheimer disease in Down syndrome. Neurobiol. Dis. 137: 104772.
5. Koundouros, N., et al. 2020. Metabolic fingerprinting links oncogenic PIK3CA with enhanced arachidonic acid-derived eicosanoids. Cell 181: 1596-1611.e27.
6. Lanzillotta, C., et al. 2021. Insulin resistance, oxidative stress and mitochondrial defects in Ts65dn mice brain: a harmful synergistic path in down syndrome. Free Radic. Biol. Med. 165: 152-170.

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.