SANTA CRUZ BIOTECHNOLOGY, INC.

Raf-B (F-7): sc-5284

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Several serine/threonine protein kinases have been implicated as intermediates in signal transduction pathways. These include ERK/MAP kinases, ribosomal S6 kinase (Rsk) and Raf-1. Raf-1 is a cytoplasmic protein with intrinsic serine/threonine activity. It is broadly expressed in nearly all cell lines tested to date and is the cellular homolog of v-Raf, the product of the transforming gene of the 3,611 strain of murine sarcoma virus. The unregulated kinase activity of the v-Raf protein has been associated with transformation and mitogenesis while the activity of Raf-1 is normally suppressed by a regulatory N-terminal domain. Raf-A, a second member of the Raf gene family of serine/threonine protein kinases, exhibits substantial homology to Raf-1 within the kinase domain of the two molecules, but less homology elsewhere. Expression of Raf-B is highly restricted with highest levels in the cerebrum and testis.

CHROMOSOMAL LOCATION

Genetic locus: BRAF (human) mapping to 7q34; Braf (mouse) mapping to 6 B1.

SOURCE

Raf-B (F-7) is a mouse monoclonal antibody raised against amino acids 12-156 of Raf-B 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.

Raf-B (F-7) is available conjugated to agarose (sc-5284 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-5284 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-5284 PE), fluorescein (sc-5284 FITC), Alexa Fluor® 488 (sc-5284 AF488), Alexa Fluor® 546 (sc-5284 AF546), Alexa Fluor® 594 (sc-5284 AF594) or Alexa Fluor® 647 (sc-5284 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-5284 AF680) or Alexa Fluor® 790 (sc-5284 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Raf-B (F-7) is recommended for detection of Raf-B of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Suitable for use as control antibody for Raf-B siRNA (h): sc-36368, Raf-B siRNA (m): sc-63294, Raf-B siRNA (r): sc-61894, Raf-B shRNA Plasmid (h): sc-36368-SH, Raf-B shRNA Plasmid (m): sc-63294-SH, Raf-B shRNA Plasmid (r): sc-61894-SH, Raf-B shRNA (h) Lentiviral Particles: sc-36368-V, Raf-B shRNA (m) Lentiviral Particles: sc-63294-V and Raf-B shRNA (r) Lentiviral Particles: sc-61894-V.

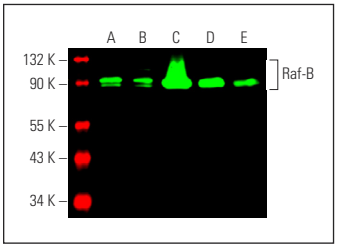
Molecular Weight of Raf-B isoforms: 95/62 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Jurkat whole cell lysate: sc-2204 or RAW 264.7 whole cell lysate: sc-2211.

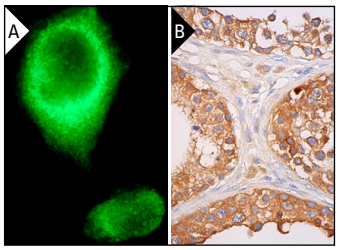
STORAGE

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

DATA



Raf-B (F-7) Alexa Fluor® 680: sc-5284 AF680. Direct near-infrared western blot analysis of Raf-B expression in RAW 264.7 (**A**), NIH/3T3 (**B**), U266 (**C**), Jurkat (**D**) and Hep G2 (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 790: sc-516731.



Raf-B (F-7): sc-5284. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of cells in seminiferous ducts (**B**).

SELECT PRODUCT CITATIONS

1. Calipel, A., et al. 2003. Mutation of Raf-B in human choroidal melanoma cells mediates cell proliferation and transformation through the MEK/ERK pathway. J. Biol. Chem. 278: 42409-42418.
2. Ho, J.C., et al. 2016. Targeting of nucleotide-binding proteins by HAMLET—a conserved tumor cell death mechanism. Oncogene 35: 897-907.
3. Kong, X., et al. 2017. Cancer drug addiction is relayed by an ERK2-dependent phenotype switch. Nature 550: 270-274.
4. Joshi, S.S., et al. 2018. 17-AAG inhibits vemurafenib-associated MAP kinase activation and is synergistic with cellular immunotherapy in a murine melanoma model. PLoS ONE 13: e0191264.
5. Hood, F.E., et al. 2019. Isoform-specific Ras signaling is growth factor dependent. Mol. Biol. Cell 30: 1108-1117.
6. Reischmann, N., et al. 2020. BRAFV600E drives dedifferentiation in small intestinal and colonic organoids and cooperates with mutant p53 and Apc loss in transformation. Oncogene 39: 6053-6070.
7. Yen, I., et al. 2021. ARAF mutations confer resistance to the RAF inhibitor belvarafenib in melanoma. Nature 594: 418-423.
8. Sala-Gaston, J., et al. 2022. HERC2 deficiency activates C-RAF/MKK3/p38 signalling pathway altering the cellular response to oxidative stress. Cell. Mol. Life Sci. 79: 548.
9. Ren, J.G., et al. 2023. RAB27B controls palmitoylation-dependent NRAS trafficking and signaling in myeloid leukemia. J. Clin. Invest. 133: e165510.

RESEARCH USE

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