SANTA CRUZ BIOTECHNOLOGY, INC.

pan Ras (C-4): sc-166691

BACKGROUND

The mammalian c-H-, c-K- and N-Ras proto-oncogenes encode guanine nucleotide-binding proteins that are ubiquitously expressed in vertebrate cells. c-H- and c-K-Ras are cellular homologs of the v-H and v-K-Ras sequences originally isolated from the Harvey and Kirsten strains of rat sarcoma virus. Ras-encoded proteins bind GDP and GTP with high affinity and possess a low level intrinsic GTPase activity that can be stimulated over 100-fold by interaction with cytosolic GTPase activating protein (GAP), a potential effector for Ras p21 function. Point mutations at amino acids 12, 13, 59 and 61 within domains responsible for GTP binding and hydrolysis activate Ras proteins to their oncogenic form and block the ability of the GTPase activity to be stimulated by GAP. Several additional proteins with GAP activity have been identified and shown to interact with p21 Ras or other members of the Ras gene family.

SOURCE

pan Ras (C-4) is a mouse monoclonal antibody raised against amino acids 1-189 representing full length N-Ras of human origin.

PRODUCT

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

pan Ras (C-4) is available conjugated to agarose (sc-166691 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166691 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166691 PE), fluorescein (sc-166691 FITC), Alexa Fluor® 488 (sc-166691 AF488), Alexa Fluor® 546 (sc-166691 AF546), Alexa Fluor® 594 (sc-166691 AF594) or Alexa Fluor® 647 (sc-166691 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166691 AF680) or Alexa Fluor® 790 (sc-166691 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

pan Ras (C-4) is recommended for detection of N-Ras, H-Ras and K-Ras p21 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).

pan Ras (C-4) is also recommended for detection of N-Ras, H-Ras and K-Ras p21 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of pan Ras: 21 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, A-431 whole cell lysate: sc-2201 or A549 cell lysate: sc-2413.

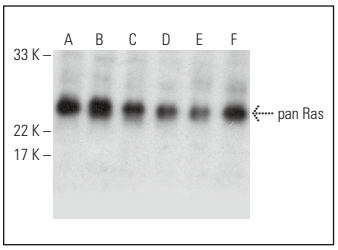
STORAGE

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

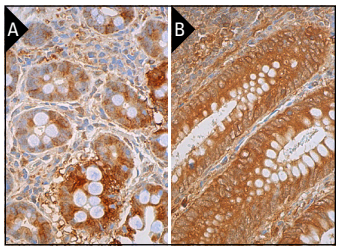
RESEARCH USE

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

DATA



pan Ras (C-4) HRP: sc-166691 HRP. Direct western blot analysis of pan Ras expression in MCF7 (**A**), A-431 (**B**), A549 (**C**), Jurkat (**D**), K-562 (**E**) and NIH/3T3 (**F**) whole cell lysates.



pan Ras (C-4) HRP: sc-166691 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human colon tissue showing cytoplasmic staining of glandular cells, endothelial cells and interstitial cells (**A**). Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (**B**). Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214.

SELECT PRODUCT CITATIONS

1. Tamburini, B.A., et al. 2010. Gene expression profiling identifies inflammation and angiogenesis as distinguishing features of canine hemangiosarcoma. BMC Cancer 10: 619.
2. Siprashvili, Z., et al. 2016. The noncoding RNAs SNORD50A and SNORD50B bind K-Ras and are recurrently deleted in human cancer. Nat. Genet. 48: 53-58.
3. Ahn, S.Y., et al. 2017. Anti-helminthic niclosamide inhibits Ras-driven oncogenic transformation via activation of GSK-3. Oncotarget 8: 31856-31863.
4. Hagiwara, N., et al. 2018. Mevalonate pathway blockage enhances the efficacy of mTOR inhibitors with the activation of retinoblastoma protein in renal cell carcinoma. Cancer Lett. 431: 182-189.
5. Botton, T., et al. 2019. Genetic heterogeneity of BRAF fusion kinases in melanoma affects drug responses. Cell Rep. 29: 573-588.e7.
6. Krishnan, A., et al. 2020. Proteogenomics analysis unveils a TFG-RET gene fusion and druggable targets in papillary thyroid carcinomas. Nat. Commun. 11: 2056.
7. Li, J., et al. 2021. Interaction between Ras and Bcl2L12 in B cells suppresses IL-10 expression. Clin. Immunol. 229: 108775.
8. Cristofani, R., et al. 2022. HSPB8 counteracts tumor activity of BRAF- and NRAS-mutant melanoma cells by modulation of RAS-prenylation and autophagy. Cell Death Dis. 13: 973.
9. Kaehler, M., et al. 2023. Clonal evolution in tyrosine kinase inhibitor-resistance: lessons from *in vitro*-models. Front. Oncol. 13: 1200897.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.