SANTA CRUZ BIOTECHNOLOGY, INC.

pan Ras (F132): sc-32

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

1. Shih, T.Y., et al. 1980. Guanine nucleotide-binding and autophosphorylating activities associated with the p21src protein of Harvey murine sarcoma virus. Nature 287: 686-691.
2. Ellis, R.W., et al. 1981. The p21 src genes of Harvey and Kirsten sarcoma viruses originate from divergent members of a family of normal vertebrate genes. Nature 292: 506-511.
3. Trahey, M. and McCormick, F. 1987. A cytoplasmic protein stimulates normal N-ras p21 GTPase, but does not affect oncogenic mutants. Science 238: 542-545.

SOURCE

pan Ras (F132) is a mouse monoclonal antibody raised against Ras protein.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

pan Ras (F132) is recommended for detection of antigenic determinants common to H-Ras, K-Ras and N-Ras p21 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of pan Ras: 21 kDa.

Positive Controls: HISM cell lysate: sc-2229, PC-3 cell lysate: sc-2220 or A-10 cell lysate: sc-3806.

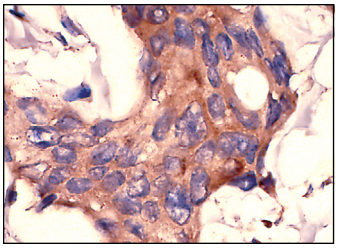
STORAGE

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 (F132): sc-32. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tumor showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Brown, R.D., et al. 1994. The oncoprotein phenotype of plasma cells from patients with multiple myeloma. Leuk. Lymphoma 16: 147-156.
2. Robbs, B.K., et al. 2013. The transcription factor NFAT1 induces apoptosis through cooperation with Ras/Raf/MEK/ERK pathway and upregulation of TNF-α expression. Biochim. Biophys. Acta 1833: 2016-2028.
3. Chan, K.C., et al. 2014. Mulberry water extracts inhibit atherosclerosis through suppression of the Integrin-β3/focal adhesion kinase complex and downregulation of nuclear factor κB signaling *in vivo* and *in vitro.* J. Agric. Food Chem. 62: 9463-9471.
4. Zhang, X., et al. 2015. G protein-coupled receptor 87 (GPR87) promotes cell proliferation in human bladder cancer cells. Int. J. Mol. Sci. 16: 24319-24331.
5. Uberti, F., et al. 2016. Protective effects of vitamin D_3 on fimbrial cells exposed to catalytic iron damage. J. Ovarian Res. 9: 34.
6. Gao, H.W., et al. 2018. Distinct MAPK and PI3K pathway mutations in different melanoma types in Taiwanese individuals. Eur. J. Dermatol. 28: 509-518.
7. Cruz, A.L.S., et al. 2019. Cell cycle progression regulates biogenesis and cellular localization of lipid droplets. Mol. Cell. Biol. 39: e00374-18.
8. Jebali, A., et al. 2021. RICTOR Affects melanoma tumorigenesis and its resistance to targeted therapy. Biomedicines 9: 1498
9. Chen, C.P., et al. 2022. Mulberry polyphenols ameliorate atherogenic migration and proliferation by degradation of K-Ras and downregulation of its signals in vascular smooth muscle cell. Int. J. Med. Sci. 19: 1557-1566.

CONJUGATES

See **pan Ras (C-4): sc-166691** for pan Ras antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.