

RASSF1 (3F3): sc-58470

BACKGROUND

Activated Ras proteins may induce senescence, apoptosis and terminal differentiation, though they are often associated with stimulating growth and transformation. The Ras association domain family 1 (RASSF1) gene is located at the human lung tumor suppressor locus 3p21.31. It consists of two major alternative transcripts, RASSF1A and RASSF1C. RASSF1 binds Ras in a GTP-dependent manner, both *in vivo* and *in vitro*. Activated Ras enhances and dominant negative Ras inhibits cell death induced by transient transfection of RASSF1 into 293-T cells, suggesting that RASSF1 tumor suppressor may serve as a Ras effector that mediates the apoptotic effects of oncogenic Ras. RASSF1A undergoes epigenetic inactivation in lung and breast cancers through hypermethylation of the CpG island of its promoter region. Mutant RASSF1A has significantly reduced growth suppression activity. Thus, RASSF1A is a potential tumor suppressor gene that plays an important role in a variety of tumor pathogenesis.

REFERENCES

- Vos, M.D., et al. 2000. Ras uses the novel tumor suppressor RASSF1 as an effector to mediate apoptosis. *J. Biol. Chem.* 275: 35669-35672.
- Dammann, R., et al. 2000. Epigenetic inactivation of a RAS association domain family protein from the lung tumour suppressor locus 3p21.3. *Nat. Genet.* 25: 315-319.

CHROMOSOMAL LOCATION

Genetic locus: RASSF1 (human) mapping to 3p21.31; Rassf1 (mouse) mapping to 9 F1.

SOURCE

RASSF1 (3F3) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 1-340 of RASSF1 of human origin, with epitope mapping to the C1 domain (52-101).

PRODUCT

Each vial contains 50 µg IgG₁ kappa light chain in 500 µl of PBS with < 0.1% sodium azide, 0.1% gelatin and 1% glycerol.

APPLICATIONS

RASSF1 (3F3) is recommended for detection of RASSF1 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for RASSF1 siRNA (h): sc-44070, RASSF1 siRNA (m): sc-41864, RASSF1 shRNA Plasmid (h): sc-44070-SH, RASSF1 shRNA Plasmid (m): sc-41864-SH, RASSF1 shRNA (h) Lentiviral Particles: sc-44070-V and RASSF1 shRNA (m) Lentiviral Particles: sc-41864-V.

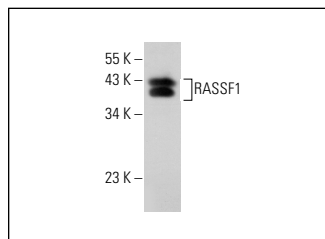
Molecular Weight of RASSF1: 40 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

STORAGE

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

DATA



RASSF1 (3F3): sc-58470. Western blot analysis of RASSF1 expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

- Romano, D., et al. 2010. Proapoptotic kinase MST2 coordinates signaling crosstalk between RASSF1A, Raf-1, and Akt. *Cancer Res.* 70: 1195-1203.
- Solomon, D.A., et al. 2011. Mutational inactivation of STAG2 causes aneuploidy in human cancer. *Science* 333: 1039-1043.
- de Fraipont, F., et al. 2012. An apoptosis methylation prognostic signature for early lung cancer in the IFC2-002 trial. *Clin. Cancer Res.* 18: 2976-2986.
- Santoro, A., et al. 2013. BRAF mutation and RASSF1A expression in thyroid carcinoma of southern Italy. *J. Cell. Biochem.* 114: 1174-1182.
- Donninger, H., et al. 2015. The RASSF1A tumor suppressor regulates XPA-mediated DNA repair. *Mol. Cell. Biol.* 35: 277-287.
- Chen, X., et al. 2018. Synergetic and antagonistic molecular effects mediated by the feedback loop of p53 and JNK between saikosaponin D and SP600125 on lung cancer A549 cells. *Mol. Pharm.* 15: 4974-4984.
- Papaspyropoulos, A., et al. 2018. RASSF1A uncouples Wnt from Hippo signalling and promotes YAP mediated differentiation via p73. *Nat. Commun.* 9: 424.
- Pefani, D.E., et al. 2018. MST2 kinase suppresses rDNA transcription in response to DNA damage by phosphorylating nucleolar Histone H2B. *EMBO J.* 37: e98760.
- Zhang, S., et al. 2019. EBNA3C facilitates RASSF1A downregulation through ubiquitin-mediated degradation and promoter hypermethylation to drive B-cell proliferation. *PLoS Pathog.* 15: e1007514.
- Ceccarelli, V., et al. 2020. Molecular mechanisms underlying eicosapentaenoic acid inhibition of HDAC1 and DNMT expression and activity in carcinoma cells. *Biochim. Biophys. Acta Gene Regul. Mech.* 1863: 194481.
- Lee, Y.H., et al. 2020. Tricistronic expression of MOAP-1, Bax and RASSF1A in cancer cells enhances chemo-sensitization that requires BH3L domain of MOAP-1. *J. Cancer Res. Clin. Oncol.* 146: 1751-1764.

RESEARCH USE

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