SANTA CRUZ BIOTECHNOLOGY, INC.

RASSF1 (N-15): sc-18722

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The Power to Question

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 that 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

1. 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.
2. 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.
3. Agathanggelou, A., et al. 2001. Methylation associated inactivation of RASSF1A from region 3p21.3 in lung, breast and ovarian tumors. Oncogene 20: 1509-1518.
4. Dammann, R., et al. 2001. The CpG island of the novel tumor suppressor gene RASSF1A is intensely methylated in primary small cell lung carcinomas. Oncogene 20: 3563-3567.
5. Burbee, D.G., et al. 2001. Epigenetic activation of RASSF1A in lung and breast cancers and malignant phenotype suppression. J. Natl. Cancer Inst. 93: 691-699.

CHROMOSOMAL LOCATION

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

SOURCE

RASSF1 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of RASSF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18722 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

RASSF1 (N-15) is recommended for detection of RASSF1A, RASSF1D, RASSF1F and RASSF1G of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RASSF1 (N-15) is also recommended for detection of RASSF1A, RASSF1D, RASSF1F and RASSF1G in additional species, including equine, canine and porcine.

Molecular Weight of RASSF1: 40 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Fenton, S.L., et al. 2004. Identification of the E1A-regulated transcription factor p120 E4F as an interacting partner of the RASSF1A candidate tumor suppressor gene. Cancer Res. 64: 102-107.
2. Peters, I., et al. 2007. RASSF1A promoter methylation and expression analysis in normal and neoplastic kidney indicates a role in early tumorigenesis. Mol. Cancer 6: 49.
3. Kuck, D., et al. 2010. Nanaomycin A selectively inhibits DNMT3B and reactivates silenced tumor suppressor genes in human cancer cells. Mol. Cancer Ther. 9: 3015-3023.
4. Korah, R., et al. 2013. Epigenetic silencing of RASSF1A deregulates cytoskeleton and promotes malignant behavior of adrenocortical carcinoma. Mol. Cancer 12: 87.

RESEARCH USE

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