SANTA CRUZ BIOTECHNOLOGY, INC.

TRAIL (RIK-2): sc-56246

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The Power to Question

BACKGROUND

Proteins belonging to the tumor necrosis factor (TNF) superfamily are potent mediators of inflammation and of the immune system. Members of the TNF superfamily include TNFβ, lymphotoxin β (LTβ), CD40L, CD30L, CD27L, Ox40L, 4-1BBL and FAS-L (APO-1). Most TNF family members are type II transmembrane proteins that are proteolytically processed at their carboxy-terminal extracellular domain to form a soluble homotrimeric molecule. The extracellular domain of an additional TNF family member, designated TNF-related apoptosis-inducing ligand (TRAIL) or APO-2L, exhibits 14-28% homology with other members of the TNF family. Like soluble FAS-L, soluble TRAIL will induce apoptosis. The morphological and cellular changes caused by the introduction of soluble TRAIL to Jurkat cells are indistinguishable from those caused by the introduction of soluble FAS-L. Unlike FAS-L, whose expression is more or less restricted to activated T cells, significant levels of TRAIL are observed in many tissues and it is constitutively expressed by some cell lines.

REFERENCES

1. Smith, C.A., et al. 1994. The TNF receptor superfamily of cellular and viral proteins: activation, costimulation, and death. Cell 76: 959-962.
2. Cosman, D. 1994. A family of ligands for the TNF receptor superfamily. Stem Cells 12: 440-455.
3. Cleveland, J.L. and Ihle, J.N. 1995. Contenders in FAS-L/TNF death signaling. Cell 81: 479-482.
4. Nagata, S. and Golstein, P. 1995. The FAS death factor. Science 267: 1449-1456.
5. Wiley, S.R., et al. 1995. Identification and characterization of a new member of the TNF family that induces apoptosis. Immunity 3: 673-682.
6. Baker, S.J. and Reddy, E.P. 1996. Transducers of life and death: TNF receptors superfamily and associated proteins. Oncogene 12: 1-9.
7. Pitti, R.M., et al. 1996. Induction of apoptosis by APO-2 ligand, a new member of the tumor necrosis factor cytokine family. J. Biol. Chem. 271: 12687-12690.
8. Plasilova, M., et al. 2002. TRAIL (APO-2L) suppresses growth of primary human leukemia and myelodysplasia progenitors. Leukemia 16: 67-73.
9. Hyer, M.L., et al. 2005. Synthetic triterpenoids cooperate with tumor necrosis factor-related apoptosis-inducing ligand to induce apoptosis of breast cancer cells. Cancer Res. 65: 4799-4808.

CHROMOSOMAL LOCATION

Genetic locus: TNFSF10 (human) mapping to 3q26.31.

SOURCE

TRAIL (RIK-2) is a mouse monoclonal antibody raised against TRAIL of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TRAIL (RIK-2) is available conjugated to either phycoerythrin (sc-56246 PE) or fluorescein (sc-56246 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

TRAIL (RIK-2) is recommended for detection of TRAIL of human origin by flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for TRAIL siRNA (h): sc-36719, TRAIL shRNA Plasmid (h): sc-36719-SH and TRAIL shRNA (h) Lentiviral Particles: sc-36719-V.

Molecular Weight of TRAIL: 34 kDa.

Molecular Weight of soluble TRAIL: 20 kDa.

Positive Controls: A549 cell lysate: sc-2413, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

SELECT PRODUCT CITATIONS

1. Fecker, L.F., et al. 2011. Efficient melanoma cell killing and reduced melanoma growth in mice by a selective replicating adenovirus armed with tumor necrosis factor-related apoptosis-inducing ligand. Hum. Gene Ther. 22: 405-417.
2. Braun, F.K., et al. 2012. Nonsteroidal anti-inflammatory drugs induce apoptosis in cutaneous T-cell lymphoma cells and enhance their sensitivity for TNF-related apoptosis-inducing ligand. J. Invest. Dermatol. 132: 429-439.
3. Al-Yacoub, N., et al. 2012. Apoptosis induction by SAHA in cutaneous T-cell lymphoma cells is related to downregulation of c-FLIP and enhanced TRAIL signaling. J. Invest. Dermatol. 132: 2263-2274.
4. Talekar, M.K., et al. 2015. ONC201 induces cell death in pediatric non-Hodgkin's lymphoma cells. Cell Cycle 14: 2422-2428.
5. Prabhu, V.V., et al. 2015. Small-molecule ONC201/TIC10 targets chemotherapy-resistant colorectal cancer stem-like cells in an Akt/Foxo3a/TRAIL-dependent manner. Cancer Res. 75: 1423-1432.
6. Zhang, M., et al. 2017. Transmembrane TNF-α promotes activation-induced cell death by forward and reverse signaling. Oncotarget 8: 63799-63812.
7. Lulla, A.R., et al. 2022. miR-3132 upregulates surface TRAIL to induce apoptotic cell death in cancer cells. Am. J. Cancer Res. 12: 315-326.

RESEARCH USE

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

PROTOCOLS

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