

TRAIL (hBA-FL): sc-4547

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 TNF β , lymphotoxin β (LT β), CD40L, CD30L, CD27L, O α 40L, 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. Cosman, D. 1994. A family of ligands for the TNF receptor superfamily. *Stem Cells* 12: 440-455.
2. Smith, C.A., Farrah, T. and Goodwin, R.G. 1994. The TNF receptor superfamily of cellular and viral proteins: activation, costimulation, and death. *Cell* 76: 959-962.
3. Cleveland, J.L. and Ihle, J.N. 1995. Contenders in FasL/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., Schooley, K., Smolak, P.J., Din, W.S., Huang, C.P., Nicholl, J.K., Sutherland, G.R., Smith, T.D., Rauch, C., Smith, C.A. and Goodwin, R.G. 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., Marsters, S.A., Ruppert, S., Donahue, C.J., Moore, A. and Ashkenazi, A. 1996. Induction of apoptosis by Apo-2 ligand, a new member of the tumor necrosis factor cytokine family. *J. Biol. Chem.* 271: 12687-12690.

SOURCE

TRAIL (hBA-FL) is produced in *E. coli* as 46 kDa biologically active, GST-tagged fusion protein corresponding 168 amino acids of TRAIL of human origin.

PRODUCT

TRAIL (hBA-FL) is purified from bacterial lysates (>98%); supplied as 50 μ g purified protein.

BIOLOGICAL ACTIVITY

TRAIL (hBA-FL) is biologically active as determined by stimulation of IL-8 production by human PBMC.

Expected ED₅₀: 10-20 ng/ml.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

SELECT PRODUCT CITATIONS

1. Vertrees, R.A., Das, G.C., Coscio, A.M., Xie, J., Zwischenberger, J.B. and Boor, P.J. 2005. A mechanism of hyperthermia-induced apoptosis in ras-transformed lung cells. *Mol. Carcinog.* 44: 111-121.
2. Basile, A., Zeppa, R., Pasquino, N., Arra, C., Ammirante, M., Festa, M., Barbieri, A., Giudice, A., Pascale, M., Turco, M.C. and Rosati, A. 2011. Exposure to 50Hz electromagnetic field raises the levels of the anti-apoptotic protein BAG3 in melanoma cells. *J. Cell. Physiol.* 226: 2901-2907.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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

PROTOCOLS

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