SANTA CRUZ BIOTECHNOLOGY, INC.

TEM8 (H-140): sc-15406

BACKGROUND

The tripartite toxin secreted by *Bacillus anthraci* is the causative agent of anthrax evading the immune system and killing the host during a systemic infection. Two components of the toxin, odemema factor (OF) and lethal factor (LF) enzymatically modify substrates within the cytosol of mammalian cells. The third component, protective antigen (PA), binds to a cellular receptor, which mediates the delivery of the enzymatic components to the cytosol. TEM8 (tumor endothelial marker 8) is one of the tumor specific endothelial markers (TEMs) whose N-terminus encodes this receptor designated ATR (anthrax toxin receptor). TEM8 is highly expressed in tumor endothelial cells but not in normal endothelial cells. TEMs have elevated expression during tumor angiogenesis. Four TEM genes, TEM1, TEM5, TEM7 and TEM8, encode the TEM proteins, which contain putative transmembrane domains. ATR is a type I membrane protein with an extracellular von Willebrand factor A domain that binds directly to PA. The first 364 amino acids of ATR protein are identical to those of TEM8. However, the C-terminal ends of the ATR and TEM8 proteins are different, presumably due to alternative splicing. A soluble version of von Willebrand factor A domain seems to protect cells from the toxin action.

REFERENCES

1. Leppla, S.H. 1982. Anthrax toxin edema factor: a bacterial adenylate cyclase that increases cAMP concentration in eukaryotic cells. Proc. Natl. Acad. Sci. USA 79: 3162-3166.
2. O'Brien, J., et al. 1985. Effects of anthrax toxin components on human neutrophils. Infect. Immun. 47: 306-310.
3. Duesbery, N.S., et al. 1998. Proteolytic inactivation of MAP-kinase-kinase by anthrax lethal factor. Science 280: 734-737.
4. Pellizzari, R., et al. 1999. Anthrax lethal factor cleaves MKK3 in macrophages and inhibits the LPS/IFNγ-induced release of NO and TNFα. FEBS Lett. 462: 199-204.
5. St. Croix, B., et al. 2000. Genes expressed in human tumor endothelium. Science 289: 1197-1202.
6. Bradley, K.A., et al. 2001. Identification of the cellular receptor for anthrax toxin. Nature 414: 225-229.
7. Carson-Walter, E.B., et al. 2001. Cell surface tumor endothelial markers are conserved in mice and humans. Cancer Res. 61: 6649-6655.

CHROMOSOMAL LOCATION

Genetic locus: ANTXR1 (human) mapping to 2p13.1; Antxr1 (mouse) mapping to 6 D1.

SOURCE

TEM8 (H-140) is a rabbit polyclonal antibody raised against amino acids 201-340 of TEM8 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.

APPLICATIONS

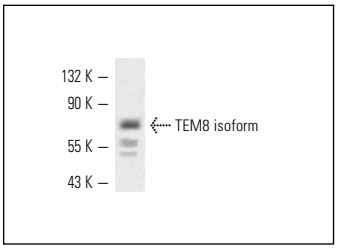
TEM8 (H-140) is recommended for detection of TEM8 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TEM8 siRNA (h): sc-44144, TEM8 siRNA (m): sc-40201, TEM8 shRNA Plasmid (h): sc-44144-SH, TEM8 shRNA Plasmid (m): sc-40201-SH, TEM8 shRNA (h) Lentiviral Particles: sc-44144-V and TEM8 shRNA (m) Lentiviral Particles: sc-40201-V.

Molecular Weight of full-length TEM8: 63 kDa.

Positive Controls: P 23 cell lysate.

DATA



TEM8 (H-140): sc-15406. Western blot analysis of TEM8 isoform expression in P 23 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Davies, G., et al. 2006. Elevated levels of tumour endothelial marker-8 in human breast cancer and its clinical significance. Int. J. Oncol. 29: 1311-1317.

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.

PROTOCOLS

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