

TGase1 (B-3): sc-377076

BACKGROUND

Terminally differentiating mammalian epidermal cells acquire an insoluble, 10 to 20 nm thick protein deposit on the intracellular surface of the plasma membrane known as the cross-linked cell envelope (CE). The CE is a component of the epidermis that is generated through formation of disulfide bonds and γ -glutamyl-lysine isodipeptide bonds, which are formed by the action of transglutaminases (TGases). TGases are intercellularly localizing, Ca^{2+} -dependent enzymes that catalyze the formation of isopeptide bonds by transferring an amine on to glutaminy residues, thereby cross-linking glutamine residues and lysine residues in substrate proteins. TGases influence numerous biological processes, including blood coagulation, epidermal differentiation, seminal fluid coagulation, fertilization, cell differentiation and apoptosis. Human keratinocyte transglutaminase (TGase1) is a membrane associated, 817 amino acid protein. Human tissue transglutaminase (TGase2) is an endothelial cell specific, 687 amino acid protein.

REFERENCES

- Gentile, V., et al. 1991. Isolation and characterization of cDNA clones to mouse macrophage and human endothelial cell tissue transglutaminases. *J. Biol. Chem.* 266: 478-483.
- Yamanishi, K., et al. 1991. Molecular cloning of human epidermal transglutaminase cDNA from keratinocytes in culture. *Biochem. Biophys. Res. Commun.* 175: 906-913.
- Kim, I.G., et al. 1992. Structure and organization of the human transglutaminase 1 gene. *J. Biol. Chem.* 267: 7710-7717.
- Ueki, S., et al. 1996. Dual functions of transglutaminase in novel cell adhesion. *J. Cell Sci.* 109: 2727-2735.
- Nemes, Z., et al. 1999. A novel function for transglutaminase 1: attachment of long-chain ω -hydroxyceramides to involucrin by ester bond formation. *Proc. Natl. Acad. Sci. USA* 96: 8402-8407.
- Bernassola, F., et al. 1999. Regulation of transglutaminases by nitric oxide. *Ann. N.Y. Acad. Sci.* 887: 83-91.
- Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 190195. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: TGM1 (human) mapping to 14q12; Tgm1 (mouse) mapping to 14 C3.

SOURCE

TGase1 (B-3) is a mouse monoclonal antibody raised against amino acids 731-817 mapping at the C-terminus of TGase1 of human origin.

PRODUCT

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

APPLICATIONS

TGase1 (B-3) is recommended for detection of TGase1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 TGase1 siRNA (h): sc-37512, TGase1 siRNA (m): sc-37513, TGase1 shRNA Plasmid (h): sc-37512-SH, TGase1 shRNA Plasmid (m): sc-37513-SH, TGase1 shRNA (h) Lentiviral Particles: sc-37512-V and TGase1 shRNA (m) Lentiviral Particles: sc-37513-V.

Molecular Weight of TGase1 full length zymogen: 106 kDa.

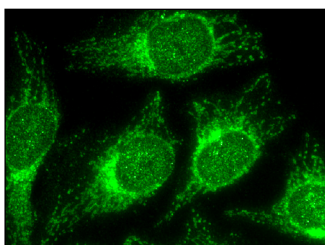
Molecular Weight of TGase1 proteolytically processed forms: 67/33/10 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224 or HEL 92.1.7 cell lysate: sc-2270.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



TGase1 (B-3): sc-377076. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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 for detailed protocols and support products.