SANTA CRUZ BIOTECHNOLOGY, INC.

TGase2 (G-8): sc-48370

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 glutaminyl 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

1. Yamanishi, K., et al. 1991. Molecular cloning of human epidermal transglutaminase cDNA from keratinocytes in culture. Biochem. Biophys. Res. Commun. 175: 906-913.
2. 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.
3. Kim, I. G., et al. 1992. Structure and organization of the human transglutaminase 1 gene. J. Biol. Chem. 267: 7710-7717.
4. Ueki, S., et al. 1996. Dual functions of transglutaminase in novel cell adhesion. J. Cell Sci. 109: 2727-2735.
5. 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.
6. Bernassola, F., et al. 1999. Regulation of transglutaminases by nitric oxide. Ann. N.Y. Acad. Sci. 887: 83-91.
7. 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: TGM2 (human) mapping to 20q11.23.

SOURCE

TGase2 (G-8) is a mouse monoclonal antibody raised against amino acids 451-687 of TGase2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

TGase2 (G-8) is recommended for detection of TGase2 of human origin by Western Blotting (starting dilution 1:100, dilution range), 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 TGase2 siRNA (h): sc-37514, TGase2 shRNA Plasmid (h): sc-37514-SH and TGase2 shRNA (h) Lentiviral Particles: sc-37514-V.

Molecular Weight (predicted) of TGase2: 77 kDa.

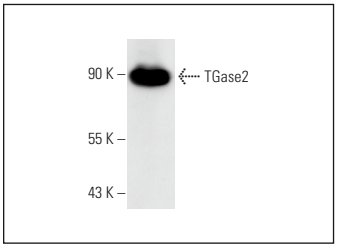
Molecular Weight (observed) of TGase2: 79/90 kDa.

Positive Controls: SW480 cell lysate: sc-2219, HEL 92.1.7 cell lysate: 2270 or TF-1 cell lysate: sc-2412.

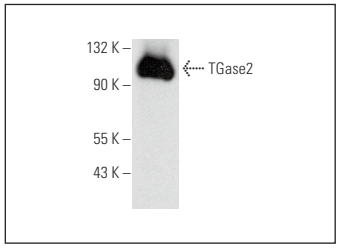
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



TGase2 (G-8): sc-48370. Western blot analysis of TGase2 expression in HEL 92.1.7 whole cell lysate.



TGase2 (G-8): sc-48370. Western blot analysis of TGase2 expression in SW480 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Torricelli, P., et al. 2013. γ-Tocopherol inhibits human prostate cancer cell proliferation by up-regulation of transglutaminase 2 and down-regulation of cyclins. Amino Acids 44: 45-51.

STORAGE

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

PROTOCOLS

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