

TGase4 (C-20): sc-55784

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, which catalyze the formation of isopeptide bonds by transferring an amine on to glutamyl 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. TGase4, also known as TGM4, TGP or hTGP, is a typical TGase that is specifically expressed in prostate tissue.

REFERENCES

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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. Dubbink, H.J., et al. 1996. Tissue specific and androgen-regulated expression of human prostate-specific transglutaminase. *Biochem. J.* 315: 901-908.
6. Dubbink, H.J., et al. 1998. The human prostate-specific transglutaminase gene (TGM4): genomic organization, tissue-specific expression, and promoter characterization. *Genomics* 51: 434-444.
7. Dubbink, H.J., et al. 1999. An Sp1 binding site is essential for basal activity of the human prostate-specific transglutaminase gene (TGM4) promoter. *Gene* 240: 261-267.
8. 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.
9. Davies, G., et al. 2007. Expression of the prostate transglutaminase (TGase4) in prostate cancer cells and its impact on the invasiveness of prostate cancer. *J. Exp. Ther. Oncol.* 6: 257-264.

CHROMOSOMAL LOCATION

Genetic locus: TGM4 (human) mapping to 3p21.31.

SOURCE

TGase4 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TGase4 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.

Blocking peptide available for competition studies, sc-55784 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TGase4 (C-20) is recommended for detection of TGase4 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 TGase4 siRNA (h): sc-63121, TGase4 shRNA Plasmid (h): sc-63121-SH and TGase4 shRNA (h) Lentiviral Particles: sc-63121-V.

Molecular Weight of TGase4: 77 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Ablin, R.J., et al. 2011. Prostate transglutaminase (TGase-4) antagonizes the anti-tumour action of MDA-7/IL-24 in prostate cancer. *J. Transl. Med.* 9: 49.

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.