



TGase3 (S-20): sc-23366

BACKGROUND

TGases (transglutaminases) catalyze the post-translational modification of proteins by transamidation of available glutamine residues, resulting in a stable, insoluble macromolecular structure. The human haploid genome contains at least five distinct transglutaminases that are differentially expressed in time-space and tissue-specific ways. Epidermal-type TGase (TGase3), also known as TGE, TGX and TGM3, is involved in the formation of the cornified cell envelope by cross-linking a variety of structural proteins in the epidermis. It is expressed during late stages of terminal differentiation of the epidermis and in certain cell types of the hair follicle. TGase3 is widely expressed and is important for epithelial barrier formation. It is a zymogen, requiring proteolysis for activity. TGase3 is devoid of GTPase activity, but its TGase activity is inhibited by GTP as in the case of tissue-type TGase (TGase2). The gene encoding TGase3 maps to human chromosome 20q11.2.

REFERENCES

- Ikura, K., et al. 1995. Site-directed mutation in conserved anionic regions of guinea pig liver transglutaminase. *Arch. Biochem. Biophys.* 318: 307-313.
- Lee, J.H., et al. 1996. The proximal promoter of the human TGase 3 gene. Stratified squamous epithelial-specific expression in cultured cells is mediated by binding of Sp1 and ets transcription factors to a proximal promoter element. *J. Biol. Chem.* 271: 4561-4568.
- Hitomi, K., et al. 1999. Characterization of recombinant mouse epidermal-type transglutaminase (TGase 3): regulation of its activity by proteolysis and guanine nucleotides. *J. Biochem.* 125: 1048-1054.
- Hitomi, K., et al. 2000. GTP, an inhibitor of transglutaminases, is hydrolyzed by tissue-type transglutaminase (TGase 2) but not by epidermal-type transglutaminase (TGase 3). *Biosci. Biotechnol. Biochem.* 64: 657-659.
- Hitomi, K., et al. 2001. Analysis of epidermal-type transglutaminase (TGase 3) expression in mouse tissues and cell lines. *Int. J. Biochem. Cell Biol.* 33: 491-498.
- Ahvazi, B., et al. 2002. Three-dimensional structure of the human transglutaminase 3 enzyme: binding of calcium ions changes structure for activation. *EMBO J.* 21: 2055-2067.
- LocusLink Report (LocusID: 7053). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: TGM3 (human) mapping to 20q11.2; Tgm3 (mouse) mapping to 2 F1.

SOURCE

TGase3 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TGase3 of mouse origin.

STORAGE

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

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-23366 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TGase3 (S-20) is recommended for detection of TGase3 of mouse and rat 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 TGase3 siRNA (m): sc-37517.

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.

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.