



## TGase3 (H3): sc-101366

### 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 20p13.

### 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 transglutaminase 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 (TGase3): 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 (TGase2) but not by epidermal-type transglutaminase (TGase3). *Biosci. Biotechnol. Biochem.* 64: 657-659.
- Hitomi, K., et al. 2001. Analysis of epidermal-type transglutaminase (TGase3) 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 20p13.

### SOURCE

TGase3 (H3) is a mouse monoclonal antibody raised against recombinant TGase3 of human origin.

### PRODUCT

Each vial contains 50 µg IgG<sub>1</sub> in 0.5 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

TGase3 (H3) is recommended for detection of full length and proteolysed TGase3 of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:50-1:2500), immunofluorescence (starting dilution to be determined by researcher, dilution range 1:25-1:1250) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:25-1:1250).

Suitable for use as control antibody for TGase3 siRNA (h): sc-37516, TGase3 shRNA Plasmid (h): sc-37516-SH and TGase3 shRNA (h) Lentiviral Particles: sc-37516-V.

### 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](http://www.scbt.com) for detailed protocols and support products.