

# TGase1 (N-20): sc-18127

## 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  $\gamma$ -glutamyl-lysine isodipeptide bonds, which are formed by the action of transglutaminases (TGases). TGases are intercellularly localizing,  $\text{Ca}^{2+}$ -dependent enzymes that 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. 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

TGase1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TGase1 of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18127 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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) or our catalog for detailed protocols and support products.

## APPLICATIONS

TGase1 (N-20) is recommended for detection of TGase1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  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).

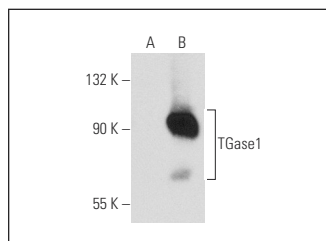
Suitable for use as control antibody for TGase1 siRNA (h): sc-37512, TGase1 siRNA (m): sc-37513, TGase1 shRNA Plasmid (h): sc-37512-SH, TGase1 shRNA Plasmid (m): sc-37513-SH, TGase1 shRNA (h) Lentiviral Particles: sc-37512-V and TGase1 shRNA (m) Lentiviral Particles: sc-37513-V.

Molecular Weight of full-length TGase1 zymogen: 106 kDa.

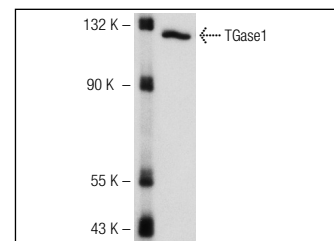
Molecular Weight of proteolytically processed TGase1 forms: 67/33/10 kDa.

Positive Controls: TGase1 (h): 293T Lysate: sc-113816, Caki-1 cell lysate: sc-2224 or HEL 92.1.7 cell lysate: sc-2270.

## DATA



TGase1 (N-20): sc-18127. Western blot analysis of TGase1 expression in non-transfected: sc-117752 (A) and human TGase1 transfected: sc-113816 (B) 293T whole cell lysates.



TGase1 (N-20): sc-18127. Western blot analysis of TGase1 expression in Caki-1 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Pickard, A., et al. 2012. Regulation of epithelial differentiation and proliferation by the stroma: a role for the retinoblastoma protein. *J. Invest. Dermatol.* 132: 2691-2699.

## RESEARCH USE

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



Try **TGase1 (A-5): sc-365821** or **TGase1 (E-6): sc-166467**, our highly recommended monoclonal alternatives to TGase1 (N-20).