

# TGase2 (H-237): sc-20621

## 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.

## CHROMOSOMAL LOCATION

Genetic locus: TGM2 (human) mapping to 20q12; Tgm2 (mouse) mapping to 2 H1.

## SOURCE

TGase2 (H-237) is a rabbit polyclonal antibody raised against amino acids 451-687 of TGase2 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.

## APPLICATIONS

TGase2 (H-237) is recommended for detection of TGase2 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TGase2 (H-237) is also recommended for detection of TGase2 in additional species, including equine.

Suitable for use as control antibody for TGase2 siRNA (h): sc-37514, TGase2 siRNA (m): sc-37515, TGase2 shRNA Plasmid (h): sc-37514-SH, TGase2 shRNA Plasmid (m): sc-37515-SH, TGase2 shRNA (h) Lentiviral Particles: sc-37514-V and TGase2 shRNA (m) Lentiviral Particles: sc-37515-V.

Molecular Weight (predicted) of TGase2: 77 kDa.

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

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, HUV-EC-C whole cell lysate or ECV304 cell lysate: sc-2269.

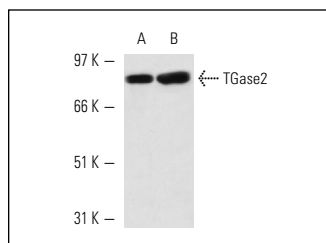
## RESEARCH USE

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

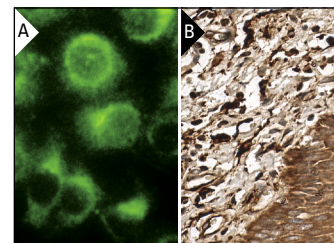
## STORAGE

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

## DATA



TGase2 (H-237): sc-20621. Western blot analysis of TGase2 expression in HEL 92.1.7 (A) and HUV-EC-C (B) whole cell lysates.



TGase2 (H-237): sc-20621. Immunofluorescence staining of methanol-fixed ECV304 cells showing cytoplasmic localization (A) and immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells (B).

## SELECT PRODUCT CITATIONS

- Dardik, R., et al. 2006. Complex formation between tissue transglutaminase II (tTG) and vascular endothelial growth factor receptor 2 (VEGFR-2): proposed mechanism for modulation of endothelial cell response to VEGF. *Exp. Cell Res.* 312: 2973-2982.
- Macaione, V., et al. 2008. Expression of transglutaminase 2 does not differentiate focal myositis from generalized inflammatory myopathies. *Acta Neurol. Scand.* 117: 393-398.
- Tóth, B., et al. 2009. Transglutaminase 2 is needed for the formation of an efficient phagocyte portal in macrophages engulfing apoptotic cells. *J. Immunol.* 182: 2084-2092.
- Munezane, T., et al. 2010. Activation of transglutaminase type 2 for aortic wall protection in a rat abdominal aortic aneurysm formation. *J. Vasc. Surg.* 52: 967-974.
- Yin, X., et al. 2010. Tissue transglutaminase expression and activity in human ligamentum flavum cells derived from thoracic ossification of ligamentum flavum. *Spine* 35: E1018-E1024.
- Garabuczi, E., et al. 2011. Retinoids produced by macrophages engulfing apoptotic cells contribute to the appearance of transglutaminase 2 in apoptotic thymocytes. *Amino Acids*. E-published.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.