

## Recombinant Human TGM3/Transglutaminase 3 Protein (His Tag)

Catalog No. PKSH030971

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

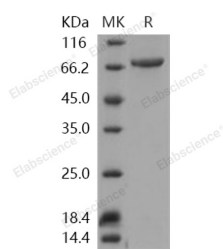
### Description

<b>Synonyms</b>	TGE
<b>Species</b>	Human
<b>Expression Host</b>	Baculovirus-Insect Cells
<b>Sequence</b>	Ala 2-Glu 693
<b>Accession</b>	Q08188
<b>Calculated Molecular Weight</b>	78.8 kDa
<b>Observed molecular weight</b>	70 kDa
<b>Tag</b>	N-His
<b>Bioactivity</b>	Measured by its ability to cleave a synthetic peptide Benzyloxycarbonyl-Gln-Gly and NH <sub>2</sub> OH. The specific activity is > 450 pmoles/min/μg.

### Properties

<b>Purity</b>	≥85% as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per μg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile 20mM Tris, 500mM NaCl, pH 8.5, 10% glycerol Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

### Data



> 95 % as determined by reducing SDS-PAGE.

### Background

Transglutaminases (TGase) are a family of calcium-dependent acyl-transfer enzymes ubiquitously expressed in

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mammalian cells and responsible for catalyzing covalent cross-links between proteins or peptides. Transglutaminase 3 (TGM3) is a member of a family of  $\text{Ca}^{2+}$ -dependent enzymes that catalyze covalent cross-linking reactions between proteins or peptides. TGM3 isoform is widely expressed and is important for epithelial barrier formation. It is a zymogen, requiring proteolysis for activity. Calcium-activated TGM3 can bind, hydrolyze, and is inhibited by GTP, despite lacking structural homology with other GTP binding proteins. TGM3 displays a diffuse cytoplasmic distribution in vitro consistent with its proposed role in the early phase of cornified cell envelope assembly in the cytoplasm. TGM3-driven specific isopeptide bonds between intermediate filaments and KAPs participate to the progressive scaffolding of the hair shaft. Additionally, TGM3 may be a novel prognostic biomarker for esophageal squamous cell carcinoma (ESCC).