

Transglutaminase 3/TGM3 Protein, Human, Recombinant (His)

General Information

Synonyms:	transglutaminase 3;UHS2;TGE
Protein Construction:	A DNA sequence encoding the human TGM3 (Q08188) (Ala 2-Glu 693) was expressed, with a polyhistidine tag at the N-terminus. Predicted N terminal: His
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	Q08188
Molecular Weight:	78.8 kDa (predicted); 70 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to cleave a synthetic peptide Benzyloxycarbonyl-Gln-Gly and NH ₂ OH. The specific activity is > 450 pmoles/min/μg.
Purity:	> 85 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 20 mM Tris, 500 mM NaCl, pH 8.5, 10% gly.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store the product under sterile conditions at -20°C to -80°C. Samples are stable for up to 12 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Transglutaminases (TGase) are a family of calcium-dependent acyl-transfer enzymes ubiquitously expressed in mammalian cells and responsible for catalyzing covalent cross-links between proteins or peptides. Transglutaminase 3 (TGM3) is a member of a family of Ca²⁺-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).

Reference

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