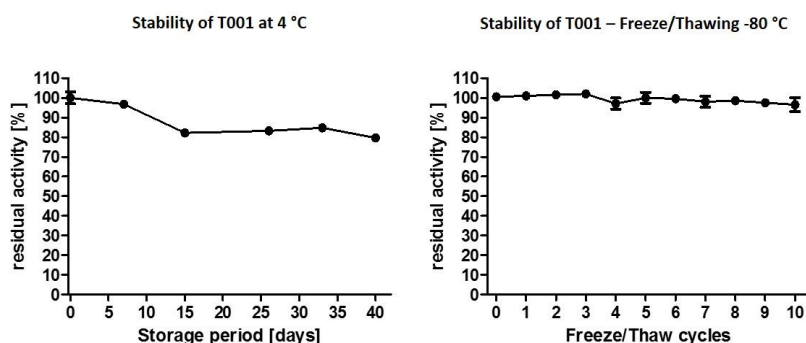


Product number **T001**  
Revision number **RN5.1**

<b>Product Name</b>	Recombinant microbial (bacterial) transglutaminase		
<b>Synonyms</b>	EC 2.3.2.13; Protein-glutamine- $\gamma$ -glutamyltransferase		
<b>Background info</b>	Transglutaminases are a family of enzymes that catalyze the posttranslational modification of proteins by inserting an isopeptide bond within or between polypeptide chains. These enzymes catalyze the acyl transfer reaction between the $\gamma$ -carboxyamides of peptide-bound glutamine residues and a variety of primary amines, particularly the $\epsilon$ -amino group of lysine. The resulting crosslink is of great significance since it is highly stable and also resistant to mechanical and proteolytic degradation.		
<b>Source</b>	Recombinantly produced in <i>E. coli</i> . Gene derived from <i>Streptomyces mobaraensis</i> .		
<b>TSE/BSE-Declaration</b>	The only material of animal origin within the MTG production process is lactose, used within the fermentation step. The lactose used is certified by the supplier to be TSE and BSE free. Lactose is not used in any further production or purification step. No other material of animal origin is used for MTG production and purification nor added to the product.		
<b>Quantity</b>	1x 25 U = 25 U	10x 25 U = 250 U 1x 250 U = 250 U	20x 25 U = 500 U 1x 500 U = 500 U
<b>Molecular weight</b>	38,333 Da (Dispase-activated MTG with N-terminal sequence: FRAPDSDDR...)		
<b>Specific Activity</b>	> 25 U/mg [One unit will catalyse the formation of 1 $\mu$ mole of hydroxamate per min from Z-Gln-Gly-OH and hydroxylamine at pH 6.0 at 37°C, Grossowicz <i>et al.</i> (1950)]		
<b>Reagents</b>	The purified transglutaminase is lyophilized from 50 mM NaOAc pH 5.0 + 0.3 M NaCl.		
<b>Appearance</b>	White lyophilized solid.		
<b>Reconstitution</b>	<p>Add the volume of H<sub>2</sub>O the protein is lyophilized from (see Certificate of Analysis) to the vial of lyophilized powder. Rotate vial gently until solid dissolves.</p> <p>Reconstituted MTG solution might be turbid. However, MTG activity is not affected. In this case, centrifuge the solution and collect the supernatant.</p> <p>After reconstitution, the solution should be stored frozen in working aliquots. Storage at 4°C is possible without activity loss for at least 7 days (Figure 1, left).</p>		
<b>Application</b>	<p>Labeling, immobilisation, conjugation and modification of proteins.</p> <p>MTG can tolerate up to 10% DMSO in aqueous solutions without significant influence on its catalytic activity. A small activity loss of 4% was observed in the presence of 20% DMSO.</p>		
<b>Storage</b>	<p>Store at -80°C.</p> <p>If storage at -80°C is not possible, storage at <math>\leq</math> -20°C is recommended. While no formal stability data are available at -20°C, according to our overall experience stability is still given.</p> <p>Upon reconstitution, store undiluted working aliquots preferably at -80°C (if not possible at -20°C, see comment above). Repeated freezing and thawing is generally not recommended, but was tested extensively, showing no loss of activity for 10 freeze/thaw cycles (Figure 1, right).</p> <p><b><i>Delivery is possible at ambient temperature</i></b></p>		

Product number **T001**  
Revision number **RN5.1**



**Figure 1: Stability of T001 in solution.** Storage of liquid T001 at 4 °C up to 40 days (left). Stability of T001 activity over 10 freeze/thaw cycles at -80 °C (right).

**Related products**

Z009	ZediXclusive Microbial Transglutaminase Assay Kit
A145	Polyclonal Antibody to microbial Transglutaminase
A020	Polyclonal antibody to bacterial protransglutaminase (pro-BTG, pro-MTG)
A143	Monoclonal ab to microbial Transglutaminase (clone XM67)
C001	Z-Gln-Gly-OH
C002	Z-Gln-Gly-CAD-DNS

**References**

Früh et al., ACS Nano 2021, 15, 12161–70  
 Stricker et al., J. Pediatr. Gastroenterol. Nutr. 2019, 68:e43-e50  
 Spycher et al., ChemBioChem 2017, 18:1923-7;  
 Steffen et al., J. Biol. Chem. 2017, 292:15622-35;  
 Dennler et al., Chembiochem. 2015, 16:861-7;  
 Dennler et al., Bioconjugate Chem. 2014, 25, 569-78;  
 Kaufmann et al., Food Addit. Contam. Part. A 2012, 29:1364-73;  
 Jeger et al., Angew. Chem. Int. Ed. Engl. 2010, 49:9995-7;  
 Gianfrani et al., Gastroenterology 2007, 133:780-9;  
 Pfleiderer et al., Microbiol. Res. 2005, 160:265-71;  
 Ando et al., Agric. Biol. Chem. 1989, 53:2613-17;  
 Pasternack et al., Eur. J. Biochem. 1998, 257:570-6;  
 Grossowicz et al., J. Biol. Chem. 1950, 187, 111-25

**Release date** 03 February 2022

**NOTE** INTENDED FOR RESEARCH USE ONLY, NOT FOR USE IN HUMAN, THERAPEUTIC OR DIAGNOSTIC APPLICATIONS.