Product Data Sheet

Product number **T002**
Revision number RN4.0

Product Name	Human tissue transglutaminase (hTG2, recombinantly produced in *E. coli*)
Synonym	Tissue-type Transglutaminase, TG2, TGase 2, proteinglutamine-γ-glutamyltransferase
Source	Recombinant produced in *E. coli*
Quantity	250 µg / 1 mg
Molecular Weight	78 kDa
Description	His_6-rhTG2 is based on the TGM2-allele from I.M.A.G.E.-clone IMAGp958L121020 isolated from neuroblastoma cells of the human brain (Val224-allele, Kanchan et al., Biochem. J. 2013, 455:261–72). It is N-terminally fused to a hexahistidine-tag resulting in the encoded N-terminal amino acid sequence MAHHHHHHAEELV…. His_6-rhTG2 is produced in *E. coli* and purified by ion metal chelating chromatography to more than 90% purity.
Activity	1) > 1500 U/mg [Activity is determined by measuring the rate of fluorescence enhancement after His_6-rhTG2-catalyzed monodansylcadaverine-incorporation into N,N-dimethylated casein according to Lorand et al., Anal. Biochem. 44 (221-231). 1 U is defined as the increase in fluorescence intensity of 1 a.u./min (measured on a Cary eclipse fluorescence spectrophotometer, Varian; λ_{ex} = 332 nm, λ_{em} = 500 nm; band filter = 5 nm; detector strength = 600 V; temperature = 37°C, assay volume = 1 ml)]. 2) 0.59 U/mg [One unit will catalyse the formation of 1 µmol of hydroxamate per min from Z-Gln-Gly-OH and hydroxylamine at pH 6.0 at 37°C, Grossowicz et al. (1950)]
Application	His_6-rhTG2 catalyzes acyl transfer reactions from glutamine residues in proteins or peptides to primary amines, e. g. the formation of ε-(γ-glutamyl) lysine bonds between proteins by transferring the acyl group of a peptide-bound glutamine residue to the primary amino group of a peptide-bound lysine residue. His_6-rhTG2 may also be used for immunoprecipitation.
Appearance	White lyophilized solid.
Reagents	The Transglutaminase is lyophilized from 10 mM sodium phosphate buffer, 150 mM NaCl, pH 8 and less than 0.1 mM Imidazole. Sample contains maltodextrin.
Activation	The Transglutaminase is activated with 10 mM Ca^{2+}; due to the precipitation of Calcium Phosphate a buffer exchange (e. g. Tris-Buffer) prior to activation is highly recommended.
Reconstitution	Add the volume of water specified in the certificate of analysis under aliquotation to the vial of lyophilized powder. Rotate vial gently until solid dissolves. After reconstitution the solution should be stored frozen in working aliquots.
Storage	Store at -80°C. If storage at -80°C is not possible, storage at ≤ -20°C is recommended. While no formal stability data are available at -20°C, according to our overall experience stability is still given. Upon reconstitution, store undiluted working aliquots preferably at -80°C (if not possible at ≤ -20°C, see comment above). Storage of diluted aliquots may result in severe activity loss. Avoid repeated freezing and thawing. ***Delivery is possible at ambient temperature***

Reference(s)

Chrobok et al., PLoS One. 2018, 13:e0196433;
Hietikko et al., Acta Derm Venereol. 2018, 98:366-72;
Sánchez-Lara et al., Vet Pathol. 2015, 52:513-23;
de Jager et al., J. Neurochem. 2015, 34:1116-28;
Fukui et al., FEBS J. 2013, 280:1420-9;
Van den Akker et al., PLoS ONE 2011, 6:e23067;
Schaertl et al., J. Biomol. Screen. 2010, 15:478-87;
Byrne et al., Clin. Immunol. 2010, 136:426-31;
Yamane et al., FEBS J. 2010, 277:3564-74;
Perez Alea et al., Anal. Biochem. 2009, 389:150-6

Related products

A033 Monoclonal antibody to human TG2 (Catalytic Domain)
F002 Tissue Transglutaminase Assay Kit
A102 TG2-Assay Substance, Abz-APE(CAD-DNP)QEA-OH

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