Product Data Sheet

Product number **T173**
Revision number RN3.0

Product Name	Human tissue transglutaminase (rhTG2) containing Arg116Cys mutation
Synonym	Tissue-type Transglutaminase, TG2, TGase 2, protein glutamine-γ-glutamyltransferase
Source	Recombinantly produced in *E. coli*
Quantity	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…. The Arg116Cys mutation was generated using site specific PCR mutagenesis (see Fig. 1). 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)].
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 ≤ - 20°C. Store working aliquots at ≤ - 20°C. Avoid repeated freezing and thawing. ***Delivery is possible at ambient temperature***

Related products	A033 Monoclonal antibody to tissue transglutaminase (TG2, Core Domain) F002 Tissue Transglutaminase Assay Kit A102 TG2-Assay Substance, Abz-APE(CAD-DNP)QEA-OH
Release date	23 November 2022
NOTE	INTENDED FOR RESEARCH USE ONLY, NOT FOR USE IN HUMAN, THERAPEUTIC OR DIAGNOSTIC APPLICATIONS.

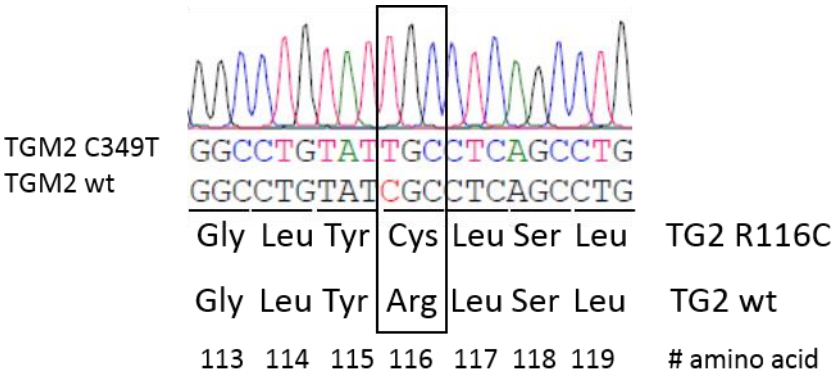

Figure 1: Alignment of TGM2 *wt* and TGM2 C349T cDNA with corresponding amino acids. Chromatogram of the sequence analysis of the mutant shows the conversion of C to T at position 349 (calculated by omitting the N-terminal hexahistidine tag). The mutation results in a change from Arg to Cys at position 116 (also calculated without N-terminal hexahistidine tag).