

Product number: **A033**  
Revision number: **RN4.1**

<b>Product Name</b>	Monoclonal antibody to human TG2 (Catalytic Domain, clone XTG17)
<b>Host</b>	Mouse
<b>Clone</b>	XTG17
<b>Isotype</b>	IgG2a (in previous PDS version given as IgG1)
<b>Immunogen</b>	Human tissue transglutaminase (full length protein with N-terminal hexahistidin-tag) recombinantly produced in insect cells
<b>Specificity</b>	<p>Mouse monoclonal antibody binds to the catalytic <b>Catalytic Domain of TG2</b> (human, guinea pig, rat, mouse and dog TG2).</p> <p>Specificity of A033 was determined in western blotting with human transglutaminases (TG1 – TG7, FXIII), TG2 of different species and human TG2 domains recombinantly produced in <i>E. coli</i>.</p> <p>⇒ A033 is specific for the Catalytic Domain of TG2. It does not cross-react with other domains of human TG2.</p> <p>⇒ A033 is specific for TG2. It does not cross-react with other human transglutaminases.</p> <p>⇒ A033 recognizes human, guinea pig, rat, mouse, and to a weak extend dog TG2.</p>
<b>Epitope</b>	A033 recognizes the epitope <b>D<sup>438</sup>ITHTYKYPE<sup>447</sup></b> (see figure below). The epitope was determined using PEPperCHIP® Transglutaminase Microarray (P111).
<b>Background info</b>	<p>Tissue transglutaminase is a, Ca<sup>2+</sup>-dependent enzyme (78 kDa) composed by 4 domains: Beta Sheet Domain (fibronectin binding, ~17 kDa), catalytic Core Domain (Cys-His-Asp catalytic triad, Calcium-binding, GTP/GDP-binding, ~37 kDa), Beta Barrel 1 Domain (GTP/GDP-binding, ~14 kDa) and Beta Barrel 2 Domain (~12 kDa). The inactive GTP-bound enzyme is present in a closed conformation, which upon activation by Ca<sup>2+</sup> and substrate binding opens like a pocket knife resulting in a longitudinal open conformation (see figure).</p>

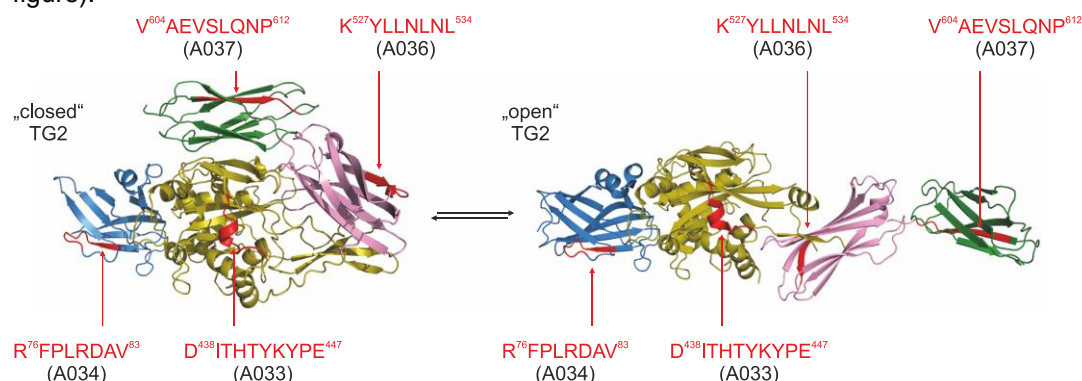


Figure: closed (left) and open (right) conformation of human tissue transglutaminase

Blue: Beta Sheet Domain

Yellow: Catalytic Domain

Pink: Beta Barrel 1 Domain

Green: Beta Barrel 2 Domain

Red: Epitopes

# Product Data Sheet



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TG2 sequence deduced from TGM2 allele IMAGp958L121020

MAEELVLERCDLELETNGRDHHTADLCREKLVVRRGQPFWLTLHFEGRNYEASVDSLTFSS 60  
VVTGPAPSQEAGTKAR**FPLRDAVE**EGDWTATVVDQDCTLSLQLTTPANAPIGLYRLSLE 120  
ASTGYQGSSFVLGHFILLFNAWCPADAVYLDSEEEERQEYVLTQQGFIYQGSAKFIKNIPW 180  
NFGQFEDGILDICLILLDVNPKFLKNAGRDCSRRSSPVYVGRVVSVMVNCNDDQGVLLGR 240  
WDNNYGDGVSPMSWIGSVDILRRWKNHGCQRVKYQGCWVFVAAVACTVLRCLGIPTRVVTN 300  
YNSAHDQNSNLLIEYFRNEFGEIQGDKSEMIWNFHCWVESWMTRPDLQPGYEGWQALDPT 360  
PQEKSEGTYCCGPVPVRAIKEGDLSTKYDAPFVFAEVNADVVDWIQQDDGSVHKSINRSL 420  
IVGLKISTKSVGRDERED**ITHYKY**PEGSSEEREAFTRANHLNKLAEKEETGMAMRIRVG 480  
QSMNMGSDFDVFAHITNNTAEYVCRLLLCARTVSYNGILGPECCT**KYLLNLNL**EPFSEK 540  
SVPLCILYEKYRDCLTESNLIKVRALLVEPVINSYLLAERDLYLENPEIKIRILGEPKQK 600  
RKL**VAEVS**LQNP LPVALEGCTFTVEGAGLTEEQKTVEIPDPVEAGEEVKVRMDLLPLHMG 660  
LHKLNVNFESDKLKAVKGFRNVIIGPA 687

A034 R<sup>76</sup>**FPLRDAV**<sup>83</sup> Beta-Sheet Domain  
A033 D<sup>438</sup>**ITHYKY**PE<sup>447</sup> Catalytic Domain  
A036 K<sup>527</sup>**YLLNLNL**<sup>534</sup> Beta-Barrel-1 Domain  
A037 V<sup>604</sup>**AEVSLQNP**<sup>612</sup> Beta-Barrel-2-Domain

Epitopes in the above sequence are underlined and written in bold.

<b>Description</b>	The IgG fraction was purified by ion exchange chromatography.
<b>Formulation</b>	75 mM NaCl, 5 mM Tris, pH7.5, 0.025% sodium azide, 50% glycerol
<b>Appearance</b>	liquid
<b>Application</b>	Western-Blotting, Immunofluorescence
<b>Working dilutions</b>	Optimal dilutions should be determined by the end user. E.g. for Western-Blotting: 1 / 500 to 1 / 5,000 should be suitable
<b>Reference(s)</b>	Kanchan et al., Cell. Mol. Life Sci. 2015, 72:3009-35.
<b>Storage</b>	Store at -80°C. If storage at -80°C is not possible, storage at ≤ -20°C is recommended. Stable for short term at + 4°C

***Delivery is possible at ambient temperature.***

<b>Related products</b>	A034: Monoclonal antibody to TG2, specific for Beta Sheet Domain A036: Monoclonal antibody to TG2, specific for Beta Barrel 1 Domain A037: Monoclonal antibody to TG2, specific for Beta Barrel 2 Domain  P111: PEPperCHIP® Transglutaminase Microarray
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**Release date** 01 February 2022

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