

Product number: **A034**
Revision number: **RN4.1**

Product Name	Monoclonal antibody to human TG2 (Beta Sheet Domain, clone XTG11)
Host	Mouse
Clone	XTG11
Isotype	IgG2a (in previous PDS version given as IgG1)
Immunogen	Human tissue transglutaminase (full length protein with N-terminal hexahistidin-tag) recombinantly produced in insect cells
Specificity	<p>Mouse monoclonal antibody binds to the Beta Sheet Domain of TG2.</p> <p>Specificity of A034 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>⇒ A034 is specific for the Beta Sheet Domain of TG2. It does not cross-react with other domains of human TG2.</p> <p>⇒ A034 is specific for TG2. It does not cross-react with other human transglutaminases.</p> <p>⇒ A034 is specific for human TG2. It does not cross-react with other TG2 from various species (human, guinea pig, rat, mouse and dog).</p>
Epitope	A034 recognizes the epitope R⁷⁶FPLRDAV⁸⁴ (see figure below). The epitope was determined using PEPperCHIP® Transglutaminase Microarray (P111).
Background info	<p>Tissue transglutaminase is a, Ca²⁺-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 Ca²⁺ and substrate binding opens like a pocket knife resulting in a longitudinal open conformation (see figure).</p>

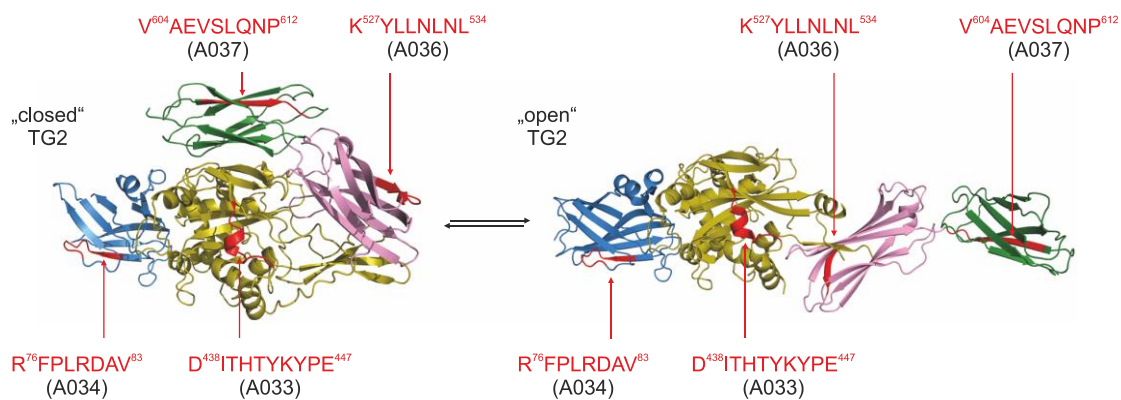


Figure: closed (left) and open (right) conformation of human tissue transglutaminase

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
NFGQFEDGILDICLILLDVNPKFLKNAGRDCSRSSPVYVGRVSGMVNCNDDQGVLLGR 240
WDNNYGDGVSPMSWIGSV DILRRWKNHGCQRVKYGCWVFAAVACTVLRCLGIPTRVVTN 300
YNSAHDQNSNLLIEYFRNEFGEIQGDKSEMIWNFHCWVESWMTRPDLQPGYEGWQALDPT 360
PQEKSEGTYCCGPVPVRAIKEGDLSTKYDAFFVFAEVNADVVDWIQDDGSHVKSINRSL 420
IVGLKISTKSVGRDERED**ITHYKY**PEGSSEEREAFTRANHLNKLAEKEETGMAMRIRVG 480
QSMNMGSDFDVFAHITNNTAEYVCRLLLCARTVSYNGILGPECGT**KYLLNLNL**EPFSEK 540
SVPLCILEYKYRDCLTESNLIKVRALLVEPVINSYLLAERDLYLENPEIKIRILGEPKQK 600
RKL**VAEVS**LQNP LPVALEGCTFTVEGAGLTEEQKTVEIPDPVEAGEEVKVRMDLLPLHMG 660
LHKLNVNFESDKLKAVKGFRNVIIGPA 687

A034 R⁷⁶FPLRDAV⁸³ Beta-Sheet Domain
A033 D⁴³⁸ITHYKY⁴⁴⁷ Catalytic Domain
A036 K⁵²⁷YLLNLNL⁵³⁴ Beta-Barrel-1 Domain
A037 V⁶⁰⁴AEVSLQNP⁶¹² Beta-Barrel-2-Domain

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

Description	Protein G-affinity purified mouse monoclonal antibody.
Appearance	liquid
Formulation	50 mM PBS + 0.01% Na azide, 50% glycerol.
Application	Western-Blotting, Immunofluorescence
Working dilutions	Optimal dilutions should be determined by the end user. E. g. for Western-Blotting: 1 / 500 to 1 / 5,000 should be suitable
Reference(s)	Kanchan et al., Cell. Mol. Life Sci. 2015, 72:3009-35
Storage	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.

Related products	A033: Monoclonal antibody to TG2, specific for Catalytic 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.