

Product number: **A037**
Revision number: **RN4.1**

Product Name	Monoclonal antibody to human TG2 (Beta Barrel 2 Domain, clone XTG18)
Host	Mouse [^]
Clone	XTG18
Isotype	IgG3 (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	Mouse monoclonal antibody binds to the Beta Barrel 2 Domain of TG2 Specificity of A037 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>. ⇒ A037 is specific for the Beta Barrel 2 Domain of TG2. It does not cross-react with other domains of human TG2. ⇒ A037 is specific for TG2. It does not cross-react with other human transglutaminases. ⇒ A037 is specific for human TG2. It does not cross-react with other TG2 from various species (human, guinea pig, rat, mouse and dog).

Epitope A037 recognizes the epitope **V⁶⁰⁴AEVSLQNP⁶¹²** (see figure below). The epitope was determined using PEPperCHIP[®] Transglutaminase Microarray (P111).

Background info 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).

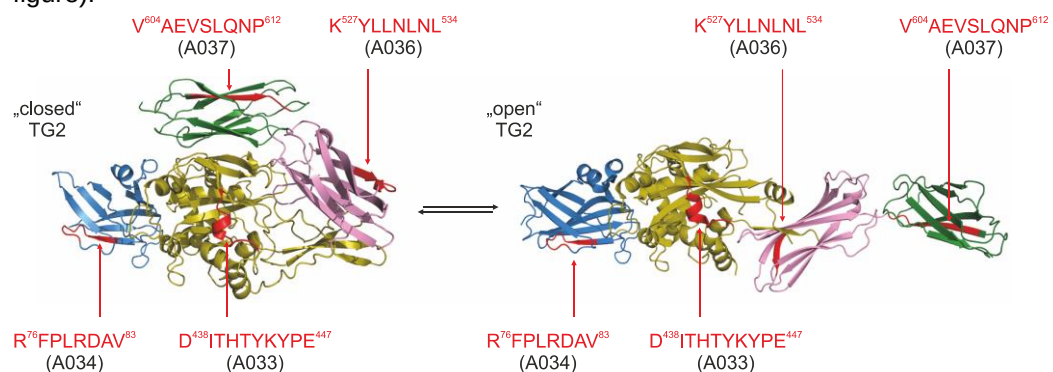


Figure: closed (left) and open (right) conformation of human tissue transglutaminase

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**EGDWTATVVDQDCTLQLTTPANAPIGLYRLSLE 120
ASTGYQGSSFVLGHFILLFNAWCPADAVYLDSEEEERQEYVLTQQGFIYQGSAKFIKNIPW 180
NFGQFEDGILDICLILLDVNPKFLKNAGRDCSRSSPVYVGRVVSVMVNCNDDQGVLLGR 240
WDNNYGDGVSPMSWIGSV DILRRWKNHGCQRVKYGCWVF AAVACTVLRLCLGIPTRVVTN 300
YNSAHDQNSNLLIEYFRNEFGEIQGDKSEMIWNFHCWVESWMTRPDLQPGYEGWQALDPT 360
PQEKSEGTYCCGPVPVRAIKEGDLSTKYDAFVFAEVNADVVDWIQQDDGSVHKSINRSL 420
IVGLKISTKSVGRDERED**ITHYKY**EGSSEEREAFTRANHLNKLAEKEETGMAMRIRVG 480
QSMNMGSDFDVFAHITNNTAEYVCRLLLCARTVSYNGILGPECCT**KYLLNLNL**EPFSEK 540
SVPLCILYEKYRDCLTESNLIKVRALLVEPVINSYLLAERDLYLENPEIKIRILGEPKQK 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	The IgG fraction was purified by ion exchange chromatography.
Appearance	liquid
Formulation	75 mM NaCl, 5 mM Tris, pH7.5, 0.025% sodium azide, 50% glycerol.
Application	Western-Blotting only
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 A034: Monoclonal antibody to TG2, specific for Beta Sheet Domain A036: Monoclonal antibody to TG2, specific for Beta Barrel 1 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.