Product Data Sheet

Product number: **A036**
Revision number: RN4.1

Product Name	Monoclonal antibody to human TG2 (Beta Barrel 1 Domain, clone XTG21)
Host	Mouse
Clone	XTG21
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	Mouse monoclonal antibody binds to the **Beta Barrel 1 Domain of TG2** Specificity of A036 was determined in western blotting with human transglutaminases (TG1 – TG7, FXIII), TG2 of different species and human TG2 domains recombinantly produced in *E. coli*. ⇨ A036 is specific for the Beta Barrel 1 Domain of TG2. It does not cross-react with other domains of human TG2. ⇨ A036 is specific for TG2. It does not cross-react with other human transglutaminases. ⇨ A036 is specific for human TG2. It does not cross-react with other TG2 from various species (human, guinea pig, rat, mouse and dog).
Epitope	A036 recognizes the epitope $K^{527}YLLNLNL^{534}$ (see figure below). The epitope was determined using PEPperCHIP® Transglutaminase Microarray (P111).
Background info	Tissue transglutaminase is a, Ca^{2+}-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^{2+} and substrate binding opens like a pocket knife resulting in a longitudinal open conformation (see figure).

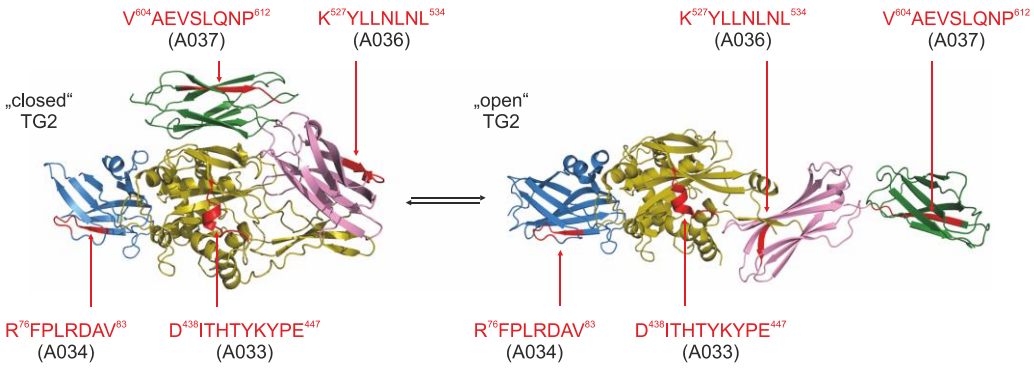

Figure: closed (left) and open (right) conformation of human tissue transglutaminase
Blue: Beta Sheet Domain
Yellow: Catalytic Domain
Pink: Beta Barrel 1 Domain
Green: Beta Barrel 2 Domain
Red: Epitopes

TG2 sequence deduced from TGM2 allele IMAGp958L121020

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MAEELVLERCDLELETNGRDHHTADLCREKLVVRRGQPFWLTLHFEGRNYEASVDSLTFS   60
VVTGPAPSQEAGTKARFPLRDAVEEGDWTATVVDQQDCTLSLQLTTPANAPIGLYRLSLE  120
ASTGYQGSSFVLGHFILLFNAWCPADAVYLDSEEERQEYVLTQQGFIYQGSAKFIKNIPW  180
NFGQFEDGILDICLILLDVNPKFLKNAGRDCSRRSSPVYVGRVVSGMVNCNDDQGVLLGR  240
WDNNYGDGVSPMSWIGSVDILRRWKNHGCQRVKYGQCWVFAAVACTVLRCLGIPTRVVTN  300
YNSAHDQNSNLLIEYFRNEFGEIQGDKSEMIWNFHCWVESWMTRPDLQPGYEGWQALDPT  360
PQEKSEGTYCCGPVPVRAIKEGDLSTKYDAPFVFAEVNADVVDWIQQDDGSVHKSINRSL  420
IVGLKISTKSVGRDEREDITHTYKYPEGSSEEREAFTRANHLNKLAEKEETGMAMRIRVG  480
QSMNMGSDFDVFAHITNNTAEEYVCRLLLCARTVSYNGILGPECGTKYLLNLNLEPFSEK  540
SVPLCILYEKYRDCLTESNLIKVRALLVEPVINSYLLAERDLYLENPEIKIRILGEPKQK  600
RKLVAEVSLQNPLPVALEGCTFTVEGAGLTEEQKTVEIPDPVEAGEEVKVRMDLLPLHMG  660
LHKLVVNFESDKLKAVKGFRNVIIGPA                                    687
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A034	R[76]FPLRDAV[83]	Beta-Sheet Domain
A033	D[438]ITHTYKYPE[447]	Catalytic Domain
A036	K[527]YLLNLNL[534]	Beta-Barrel-1 Domain
A037	V[604]AEVSLQNP[612]	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, 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
A034: Monoclonal antibody to TG2, specific for Beta Sheet Domain
A037: Monoclonal antibody to TG2, specific for Beta Barrel 2 Domain

P111: PEPperCHIP® Transglutaminase Microarray

Release date 01 February 2022

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