Product Data Sheet

Product number: **A143, A144**
Revision number: RN2.1

Product Name Monoclonal antibody to microbial transglutaminase

Host Mouse

Immunogen Microbial Pro-transglutaminase from *Streptomyces mobaraensis*, recombinantly produced in *E. coli* (Zedira product No. T016)

Product number	**A143**	**A144**
Clone	XM67	XM68
Specificity	Microbial transglutaminase*	Microbial transglutaminase*
Subtype	IgG1	IgG2a
Suitable for Western Blot	✓	✓
Suitable for ELISA	✓	✓
Recommendation for Sandwich ELISA	Capture antibody	Detection antibody

*antibody binds the mature transglutaminase and the inactive zymogen (proenzyme).

⇨ The epitope is on the mature part of the enzyme.

Description The IgG fraction was purified by ion exchange chromatography.

Formulation 75 mM NaCl, 5 mM Tris, pH7.5, 0.025% sodium azide, 50% glycerol.

Appearance liquid

Application Western-Blotting, Immunofluorescence

Working dilutions Optimal dilutions should be determined by the end user.
E.g. for Western-Blotting or ELISA: 1 / 500 to 1 / 5,000 should be suitable

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
T001: Recombinant microbial (bacterial) transgltuaminase
T178: Microbial transglutaminase with C-terminal His_6-Tag
C102: MTG-Blocker
M001: MTG-ANiTA-KIT
Z009: Zedi*Xclusive* Microbial Transglutaminase Assay Kit
E021: Microbial Transglutaminase (MTG) ELISA
A145: Polyclonal antibody to microbial transglutaminase

Release date 01 February 2022

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

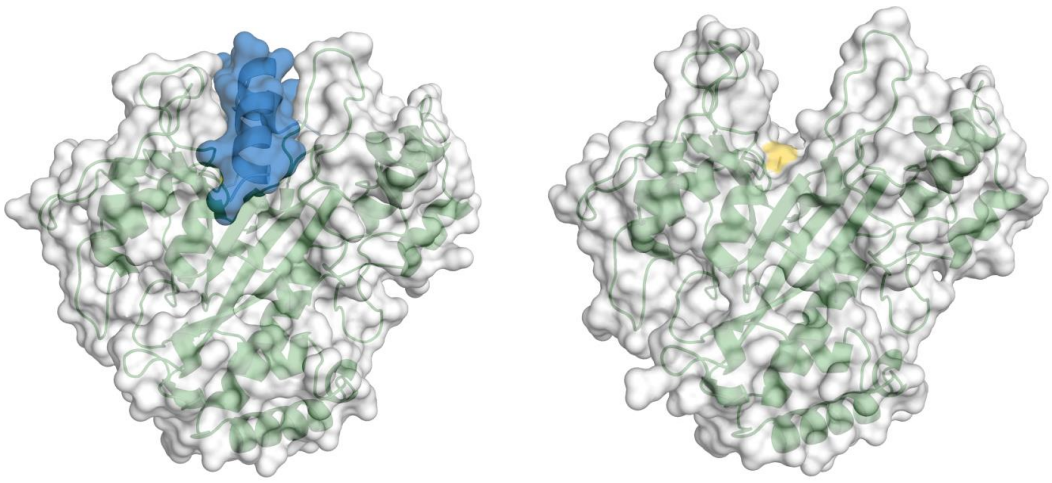
Background info

Microbial transglutaminase (MTG or synonymous BTG for bacterial transglutaminase) was discovered by the Japanese companies Amano Enzyme® and Ajinomoto® in the late 1980ies by screening 5,000 microorganisms. The aim was the constant supply of a cheap and stable transglutaminase for food applications.
The microorganism *Streptomyces mobaraensis* (formerly known as *Streptoverticillium mobaraense*) turned out to produce a calcium independent transglutaminase with the desired properties. MTG is produced as an inactive proenzyme (zymogen) with a signal sequence for its secretion to the fermentation broth. Subsequently, proteolytic cleavage of the 45 amino acid propeptide with Proteases TAMP and TAP yields active MTG (Pasternack et al., Eur J Biochem. 1998; 257:570-6, Zotzel et al., Eur J Biochem. 2003; 270:4149-55., Zotzel et al., Eur J Biochem. 2003; 270:3214-22).

PreproMTG-sequence (P81453) of microbial transglutaminase from *Streptomyces mobaraensis*

MRIRRRALVFATMSAVLCTAGFMPSAGEAAADNGAGEETKSYAETYRLTADDVANINALNESAPAASSA
GPSFRAPDSDDRVTPPAEPLDRMPDPYRPSYGRAETVVNNYIRKWQQVYSHRDGRKQQMTEEQREWLSY
GCVGVTWVNSGQYPTNRLAFASFDEDRFKNELKNGRPRSGETRAEFEGRVAKESFDEEKGFQRAREVAS
VMNRALENAHDESAYLDNLKKELANGNDALRNEDARSPFYSALRNTPSFKERNGGNHDPSRMKAVIYSK
HFWSGQDRSSSADKRKYGDPDAFRPAPGTGLVDMSRDRNIPRSPTSPGEGFVNFDYGWFGAQTEADADK
TVWTHGNHYHAPNGSLGAMHVYESKFRNWSEGYSDFDRGAYVITFIPKSWNTAPDKVKQGWPVIVHVAT
AK

blue	signal sequence
purple	pro-peptide
green	mature catalytically active MTG
⬇	TAMP- and Dispase cleavage site
⬇	TAP-cleavage site



Microbial Transglutaminase crystal structures. Left: Pro-Transglutaminase (PDB-ID: 3IU0, Yang et al., J Biol Chem. 2011; 286:7301-7). The propeptide is shown in blue. Right: active Transglutaminase (PDB-ID: 1IU4, Kashiwagi et al. J Biol Chem. 2002; 277:44252-60). Active site Cysteine is marked in yellow.