

**Anti-TGM2 Picoband Antibody**  
**Catalog # ABO12137****Specification****Anti-TGM2 Picoband Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P21980</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for Protein-glutamine gamma-glutamyltransferase 2(TGM2) detection. Tested with WB, IHC-P, IHC-F in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-TGM2 Picoband Antibody - Additional Information**

**Gene ID** 7052

**Other Names**

Protein-glutamine gamma-glutamyltransferase 2, 2.3.2.13, Tissue transglutaminase, Transglutaminase C, TG(C), TGC, TGase C, Transglutaminase H, TGase H, Transglutaminase-2, TGase-2, TGM2

**Calculated MW**

77329 MW KDa

**Application Details**

Immunohistochemistry(Frozen Section), 0.5-1 µg/ml, Human, Mouse, Rat,  
-<br>Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By  
Heat<br>Western blot, 0.1-0.5 µg/ml, Human, Rat<br>

**Protein Name**

Protein-glutamine gamma-glutamyltransferase 2

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg NaN<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminus of human TGM2 (7-34aa LERCDLELETNGRDHHTADLCREKLVR), different from the related mouse sequence by five amino acids.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins

**Storage**

**At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.**

**Sequence Similarities**

Belongs to the transglutaminase superfamily. Transglutaminase family.

**Anti-TGM2 Picoband Antibody - Protein Information**

**Name** TGM2 {ECO:0000303|PubMed:17939176, ECO:0000312|HGNC:HGNC:11778}

**Function**

Calcium-dependent acyltransferase that catalyzes the formation of covalent bonds between peptide-bound glutamine and various primary amines, such as gamma-amino group of peptide-bound lysine, or mono- and polyamines, thereby producing cross-linked or aminated proteins, respectively (PubMed: [9252372](http://www.uniprot.org/citations/9252372), PubMed: [23941696](http://www.uniprot.org/citations/23941696), PubMed: [31991788](http://www.uniprot.org/citations/31991788)). Involved in many biological processes, such as bone development, angiogenesis, wound healing, cellular differentiation, chromatin modification and apoptosis (PubMed: [1683874](http://www.uniprot.org/citations/1683874), PubMed: [7935379](http://www.uniprot.org/citations/7935379), PubMed: [9252372](http://www.uniprot.org/citations/9252372), PubMed: [27270573](http://www.uniprot.org/citations/27270573)). Acts as a protein-glutamine gamma-glutamyltransferase by mediating the cross-linking of proteins, such as ACO2, HSPB6, FN1, HMGB1, RAP1GDS1, SLC25A4/ANT1, SPP1 and WDR54 (PubMed: [23941696](http://www.uniprot.org/citations/23941696), PubMed: [24349085](http://www.uniprot.org/citations/24349085), PubMed: [29618516](http://www.uniprot.org/citations/29618516), PubMed: [30458214](http://www.uniprot.org/citations/30458214)). Under physiological conditions, the protein cross-linking activity is inhibited by GTP; inhibition is relieved by Ca(2+) in response to various stresses (PubMed: [7649299](http://www.uniprot.org/citations/7649299), PubMed: [7592956](http://www.uniprot.org/citations/7592956), PubMed: [18092889](http://www.uniprot.org/citations/18092889)). When secreted, catalyzes cross-linking of proteins of the extracellular matrix, such as FN1 and SPP1 resulting in the formation of scaffolds (PubMed: [12506096](http://www.uniprot.org/citations/12506096)). Plays a key role during apoptosis, both by (1) promoting the cross-linking of cytoskeletal proteins resulting in condensation of the cytoplasm, and by (2) mediating cross-linking proteins of the extracellular matrix, resulting in the irreversible formation of scaffolds that stabilize the integrity of the dying cells before their clearance by phagocytosis, thereby preventing the leakage of harmful intracellular components (PubMed: [7935379](http://www.uniprot.org/citations/7935379), PubMed: [9252372](http://www.uniprot.org/citations/9252372)). In addition to protein cross-linking, can use different monoamine substrates to catalyze a vast array of protein post-translational modifications: mediates aminylation of serotonin, dopamine, noradrenaline or histamine into glutamine residues of target proteins to generate protein serotonylation, dopaminylation, noradrenalinylation or histaminylation, respectively (PubMed: [23797785](http://www.uniprot.org/citations/23797785), PubMed: [30867594](http://www.uniprot.org/citations/30867594)). Mediates protein serotonylation of small GTPases during

activation and aggregation of platelets, leading to constitutive activation of these GTPases (By similarity). Plays a key role in chromatin organization by mediating serotonylation and dopaminylation of histone H3 (PubMed:<a href="http://www.uniprot.org/citations/30867594" target="\_blank">30867594</a>, PubMed:<a href="http://www.uniprot.org/citations/32273471" target="\_blank">32273471</a>). Catalyzes serotonylation of 'Gln-5' of histone H3 (H3Q5ser) during serotonergic neuron differentiation, thereby facilitating transcription (PubMed:<a href="http://www.uniprot.org/citations/30867594" target="\_blank">30867594</a>). Acts as a mediator of neurotransmission-independent role of nuclear dopamine in ventral tegmental area (VTA) neurons: catalyzes dopaminylation of 'Gln- 5' of histone H3 (H3Q5dop), thereby regulating relapse-related transcriptional plasticity in the reward system (PubMed:<a href="http://www.uniprot.org/citations/32273471" target="\_blank">32273471</a>). Regulates vein remodeling by mediating serotonylation and subsequent inactivation of ATP2A2/SERCA2 (By similarity). Also acts as a protein deamidase by mediating the side chain deamidation of specific glutamine residues of proteins to glutamate (PubMed:<a href="http://www.uniprot.org/citations/9623982" target="\_blank">9623982</a>, PubMed:<a href="http://www.uniprot.org/citations/20547769" target="\_blank">20547769</a>). Catalyzes specific deamidation of protein gliadin, a component of wheat gluten in the diet (PubMed:<a href="http://www.uniprot.org/citations/9623982" target="\_blank">9623982</a>). May also act as an isopeptidase cleaving the previously formed cross-links (PubMed:<a href="http://www.uniprot.org/citations/26250429" target="\_blank">26250429</a>, PubMed:<a href="http://www.uniprot.org/citations/27131890" target="\_blank">27131890</a>). Also able to participate in signaling pathways independently of its acyltransferase activity: acts as a signal transducer in alpha-1 adrenergic receptor-mediated stimulation of phospholipase C-delta (PLCD) activity and is required for coupling alpha-1 adrenergic agonists to the stimulation of phosphoinositide lipid metabolism (PubMed:<a href="http://www.uniprot.org/citations/8943303" target="\_blank">8943303</a>).

#### **Cellular Location**

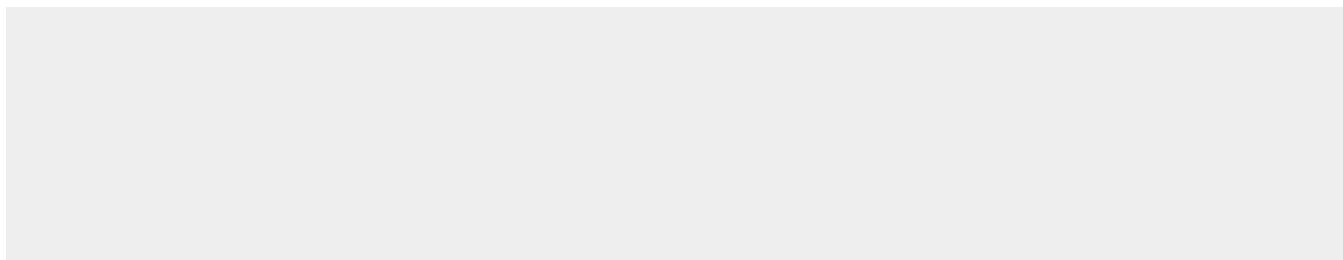
Cytoplasm, cytosol. Nucleus. Chromosome. Secreted, extracellular space, extracellular matrix. Cell membrane {ECO:0000250|UniProtKB:Q9WVJ6}. Mitochondrion. Note=Mainly localizes to the cytosol (PubMed:9575137). Present at much lower level in the nucleus and chromatin (PubMed:9575137). Also secreted via a non-classical secretion pathway to the extracellular matrix (PubMed:27270573)

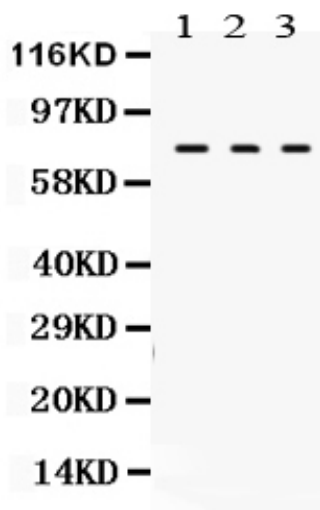
#### **Anti-TGM2 Picoband Antibody - Protocols**

Provided below are standard protocols that you may find useful for product applications.

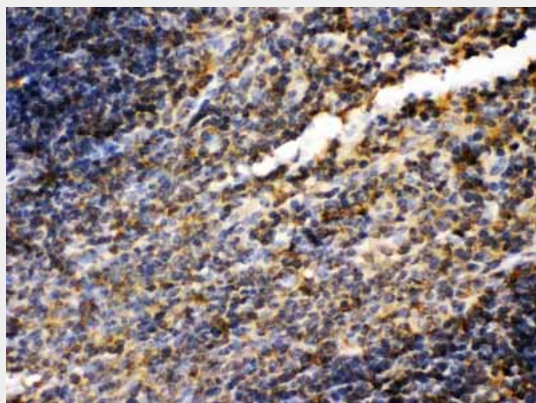
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **Anti-TGM2 Picoband Antibody - Images**

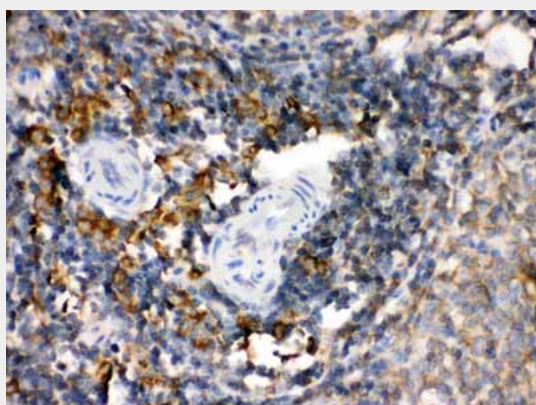




Anti- TGM2 Picoband antibody, ABO12137, Western blottingAll lanes: Anti TGM2 (ABO12137) at 0.5ug/mlLane 1: Rat Liver Tissue Lysate at 50ugLane 2: Rat Ovary Tissue Lysate at 50ugLane 3: HELA Whole Cell Lysate at 40ugPredicted bind size: 77KDObserved bind size: 77KD

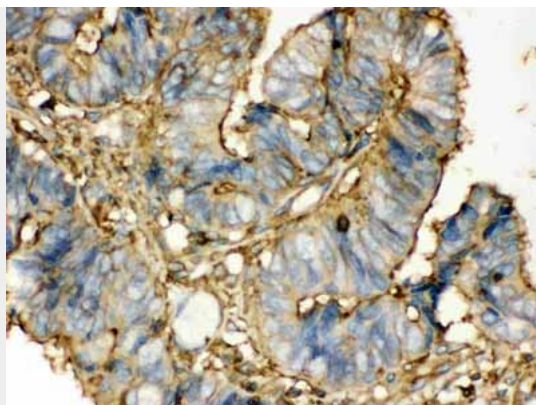


Anti- TGM2 Picoband antibody, ABO12137, IHC(P)IHC(P): Mouse Spleen Tissue

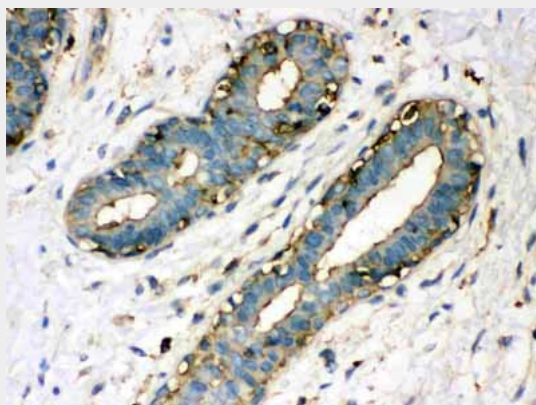


Anti- TGM2 Picoband antibody, ABO12137, IHC(P)IHC(P): Rat Spleen Tissue

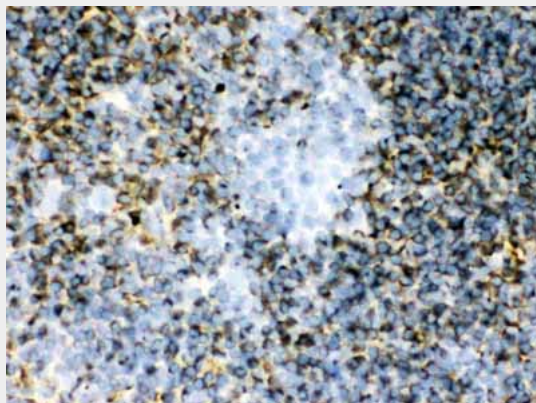




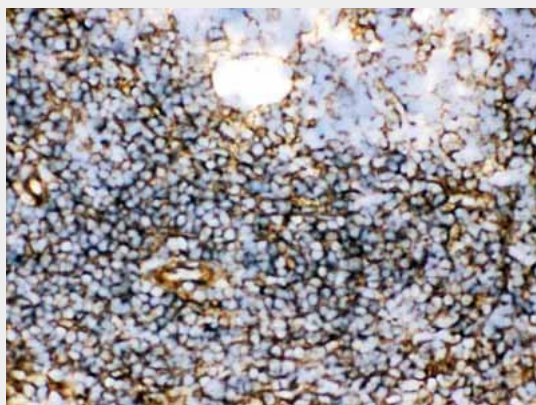
Anti- TGM2 Picoband antibody, ABO12137, IHC(P)IHC(P): Human Intestinal Cancer Tissue



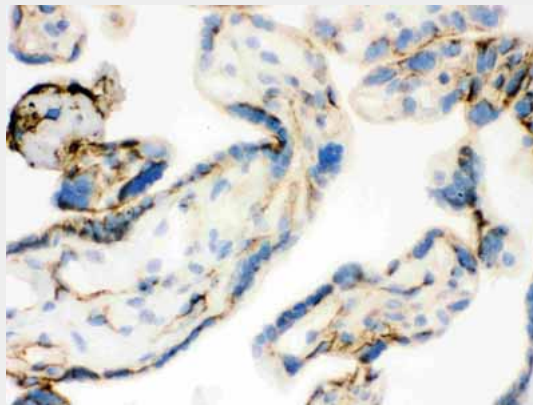
Anti- TGM2 Picoband antibody, ABO12137, IHC(P)IHC(P): Human Mammary Cancer Tissue



Anti- TGM2 Picoband antibody, ABO12137, IHC(F)IHC(F): Mouse Spleen Tissue



Anti- TGM2 Picoband antibody, ABO12137, IHC(F)IHC(F): Rat Spleen Tissue



Anti- TGM2 Picoband antibody, ABO12137, IHC(F)IHC(F): Human Placenta Tissue

#### **Anti-TGM2 Picoband Antibody - Background**

Tissue transglutaminase, also called TGC, is a 78-kDa, calcium dependent enzyme of the protein-glutamine gamma-glutamyltransferases family. By fluorescence in situ hybridization (FISH), this gene is mapped in 20q11.23. Transglutaminases are enzymes that catalyze the crosslinking of proteins by epsilon-gamma glutamyl lysine isopeptide bonds. While the primary structure of transglutaminases is not conserved, they all have the same amino acid sequence at their active sites and their activity is calcium-dependent. The protein encoded by this gene acts as a monomer, is induced by retinoic acid, and appears to be involved in apoptosis. Finally, the encoded protein is the autoantigen implicated in celiac disease.