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Anti-TGM2 Antibody

Catalog # ABO11464

Product Information

Application	WB, IHC-P, ICC
Primary Accession	P21980
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Protein-glutamine gamma-glutamyltransferase 2(TGM2) detection. Tested with WB, IHC-P, ICC in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

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
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, By Heat Immunocytochemistry , 0.5-1 □g/ml, Human, - Western blot, 0.1-0.5 □g/ml, Human, Rat
Source	Eukaryota
Protein Name	Protein-glutamine gamma-glutamyltransferase 2
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human TGM2 (399-418aa ADVVDWIQQDDGSVHKSINR), different from the related mouse sequence by three amino acids, and from the related rat sequence by four amino acids.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins

Storage	At -20˚C for one year. After r˚Constitution, 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.

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:23941696, PubMed:31991788, PubMed:9252372). Involved in many biological processes, such as bone development, angiogenesis, wound healing, cellular differentiation, chromatin modification and apoptosis (PubMed:1683874, PubMed:27270573, PubMed:28198360, PubMed:7935379, PubMed:9252372). 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, PubMed:24349085, PubMed:29618516, PubMed: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:18092889, PubMed:7592956, PubMed:7649299). When secreted, catalyzes cross-linking of proteins of the extracellular matrix, such as FN1 and SPP1 resulting in the formation of scaffolds (PubMed: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, PubMed: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, PubMed: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:30867594, PubMed:32273471). Catalyzes serotonylation of 'Gln-5' of histone H3 (H3Q5ser) during serotonergic neuron differentiation, thereby facilitating transcription (PubMed:30867594). 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:32273471). 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:20547769, PubMed:9623982). Catalyzes specific deamidation of protein gliadin, a component of wheat gluten in the diet (PubMed:9623982). May also act as an isopeptidase cleaving the previously formed cross-links (PubMed:26250429, PubMed:27131890). 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:8943303).

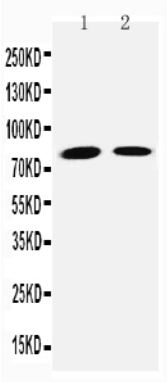
Cellular Location

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)

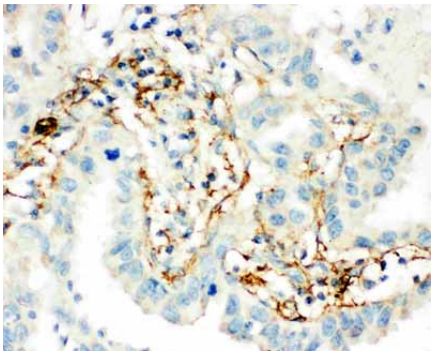
Background

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.

Images



Anti-TGM2 antibody, ABO11464, Western blottingLane 1: JURKAT Cell LysateLane 2: HELA Cell Lysate



Anti-TGM2 antibody, ABO11464, IHC(P)IHC(P): Human Lung Cancer Tissue

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