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Transglutaminase 2 Rabbit pAb

Catalog # AP99417

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P21980
Other Accession	P21980
Reactivity	Rat
Predicted	Pig, Human, Mouse, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	77329
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human TGM2.
Epitope Specificity	551-650/687
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the transglutaminase superfamily. Transglutaminase family.
SUBUNIT	Monomer.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	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. Two transcript variants encoding different isoforms have been found for this gene.

Additional Information

Gene ID	7052
Other Names	G(h); TG(C); TGC; hTG2; tTG; G[a]h; TG2; TGase2; tTGas; TGM2_HUMAN; TGM2; Erythrocyte transglutaminase; Heart G alpha(h) (hhG alpha(h)); Isopeptidase TGM2; Protein G alpha(h) (G(h)); Protein-glutamine deamidase TGM2; Protein-glutamine dopaminyltransferase TGM2; Protein-glutamine histaminyltransferase TGM2; Protein-glutamine noradrenalinyltransferase TGM2; Protein-glutamine serotonyltransferase TGM2; Tissue transglutaminase (tTG | tTgase); Transglutaminase C (TG(C) | TGC | TGase C); Transglutaminase H (TGase H); Transglutaminase II (TGase II); Transglutaminase-2 (TG2 | TGase-2 | hTG2); 2.3.2.13; TGM2_MOUSE; Tissue transglutaminase (tTG); Transglutaminase-2 (TG2 | TGase-2 | TGase2); transglutaminase 2; transglutaminase 2 (C polypeptide, protein-glutamine-gamma-glutamyltransferase); C polypeptide,

protein-glutamine-gamma-glutamyltransferase

Dilution IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500

Storage Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

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)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.