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KD-Validated Anti-Oxoglutarate receptor 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1457

Product Information

Application	WB, FC, ICC
Primary Accession	Q96P68
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB4575
Calculated MW	38251
Gene Name	OXGR1
Aliases	OXGR1; Oxoglutarate Receptor 1; P2RY15; P2Y15; Alpha-Ketoglutarate Receptor 1; 2-Oxoglutarate Receptor 1; GPR80; GPR99; AKGR; Oxoglutarate (Alpha-Ketoglutarate) Receptor 1; G Protein-Coupled Receptor 80; G-Protein Coupled Receptor 99; P2Y-Like Nucleotide Receptor; P2Y Purinoceptor 15; P2Y-Like GPCR; Seven Transmembrane Helix Receptor; G-Protein Coupled Receptor 80; CAON2
Immunogen	A synthesized peptide derived from human OXGR1 / GPR99

Additional Information

Gene ID	27199
Other Names	2-oxoglutarate receptor 1, Alpha-ketoglutarate receptor 1, G-protein coupled receptor 80, G-protein coupled receptor 99, P2Y purinoceptor 15, P2Y15, P2Y-like GPCR, P2Y-like nucleotide receptor, OXGR1

Protein Information

Name	OXGR1 {ECO:0000303|PubMed:36919698, ECO:0000312|HGNC:HGNC:4531}
Function	G protein-coupled receptor for dicarboxylates and amino dicarboxylates, such as alpha-ketoglutarate, itaconate and leukotriene E4 (PubMed:15141213, PubMed:36571463, PubMed:36919698, PubMed:41413034, PubMed:41791372). Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of downstream effectors, such as phospholipase C (PubMed:41413034, PubMed:41791372). OXGR1 is coupled to G(q) G proteins and mediates production of diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP3) (PubMed:36919698, PubMed:41413034, PubMed:41791372). Activation by alpha-ketoglutarate produced by proximal tubule renal cells upon metabolic alkalosis initiates an intrarenal paracrine signaling pathway that drives transepithelial salt reabsorption and

	bicarbonate secretion by SLC26A4/pendrin-positive intercalated cells (By similarity). Also acts as a regulator of vasodilatation in vascular smooth muscle cells: following activation by alpha-ketoglutarate, couples to GNAQ/G(q), initiating a signaling that activates MYLK/MLCK, thereby promoting MYL9 phosphorylation and vascular smooth muscle cell contraction and limiting vasodilation (PubMed:41791372). Receptor for itaconate, a metabolite produced by myeloid lineages (PubMed:36919698). In the respiratory epithelium, couples the binding of itaconate to the activation of GNA11/G(11) and downstream intracellular Ca(2+) release, leading to mucocilliary clearance of airborne pathogens (PubMed:36919698). Receptor for leukotriene E4 (LTE4) produced by mast cells upon allergic inflammation (PubMed:41413034). Binds with high affinity to LTE4 and elicits mucin release from pulmonary epithelium in response to airborne fungi allergens (By similarity). Regulates mucin-producing goblet cell homeostasis (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein. Note=Upon itaconate binding, internalizes via endocytosis in a beta-arrestin dependent manner
Tissue Location	Detected in kidney and, to a lower extent, in placenta (PubMed:12098360). Not detected in brain tissues including the frontal cortex, caudate putamen, thalamus, hypothalamus, hippocampus or pons (PubMed:12098360).

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