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OXGR1/GPR99 Rabbit mAb

Catalog # AP74849

Product Information

Application	WB, FC
Primary Accession	Q96P68
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	38251

Additional Information

Gene ID	27199
Other Names	OXGR1
Dilution	WB~~1:1000-1:5000 FC~~1:100-1:500
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

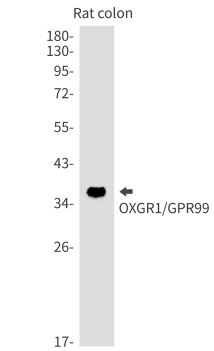
Name	OXGR1 {ECO:0000303|PubMed:36919698, ECO:0000312|HGNC:HGNC:4531}
Function	G protein-coupled receptor for dicarboxylates and amino dicarboxylates, such as alpha-ketoglutarate, itaconate and leukotriene E4 (PubMed:15141213, PubMed:36571463, PubMed:36919698, PubMed:41413034, PubMed:41791372). Ligand 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).

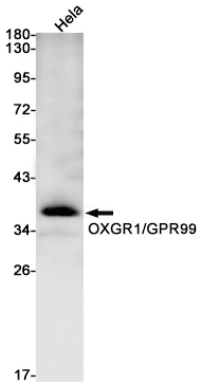
Background

This gene encodes a G protein-coupled receptor (GPCR) that belongs to the oxoglutarate receptor family within the GPCR superfamily. The encoded protein is activated by the citric acid intermediate, oxoglutarate, as well as several cysteinyl leukotrienes, including leukotrienes E4, C4 and D4, which are implicated in many inflammatory disorders. In mice, a knock-out of this gene leads to middle ear inflammation, changes in the mucosal epithelium, and an increase in fluid behind the eardrum, and is associated with hearing loss. Alternative splicing results in multiple transcript variants.

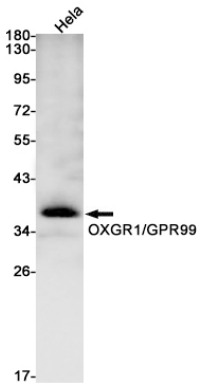
Images



Western blot analysis of OXGR1/GPR99 in rat colon lysates using OXGR1 antibody.



Western blot analysis of OXGR1/GPR99 in Hela lysates using OXGR1/GPR99 antibody.



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