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Anti-Human CASR DyLight® 488 conjugated Antibody(monoclonal, 11E9)

Catalog # ABO14788

Product Information

Application	FC
Primary Accession	P41180
Host	Mouse
Isotype	Mouse IgG2b
Reactivity	Human
Clonality	Monoclonal
Format	Liquid
Description	Anti-Human CASR DyLight® 488 conjugated Antibody (monoclonal, 11E9) . Tested in Flow Cytometry applications. This antibody reacts with Human.

Additional Information

Gene ID	846
Other Names	Extracellular calcium-sensing receptor, CaR, CaSR, hCasR, Parathyroid cell calcium-sensing receptor 1, PCaR1, CASR (HGNC:1514)
Calculated MW	120675
Application Details	Flow Cytometry, 1-3 □g/1x10^6 cells
Subcellular Localization	Cell membrane.
Tissue Specificity	Expressed in the temporal lobe, frontal lobe, parietal lobe, hippocampus, and cerebellum. Also found in kidney, lung, liver, heart, skeletal muscle, placenta.
Source	Eukaryota
Contents	Each vial contains 50% glycerol, 0.9% NaCl, 0.2% Na2HPO4, 0.02% NaN3.
Clone Names	Clone: Clone: 11E9
Immunogen	E. coli-derived human CASR recombinant protein (Position: Q926-S1078). Human CASR shares 80.5% and 78.6% amino acid (aa) sequence identity with mouse and rat CASR, respectively.
Cross Reactivity	No cross-reactivity with other proteins.
Storage	At -20°C for one year from date of receipt. Avoid repeated freezing and thawing. Protect from light.

Protein Information

Name	CASR {ECO:0000303|PubMed:16740594, ECO:0000312|HGNC:HGNC:1514}
Function	G protein-coupled receptor that senses changes in the extracellular concentration of calcium ions and plays a key role in maintaining calcium homeostasis (PubMed:17555508, PubMed:19789209, PubMed:21566075, PubMed:22114145, PubMed:22789683, PubMed:23966241, PubMed:25104082, PubMed:25292184, PubMed:25766501, PubMed:26386835, PubMed:32817431, PubMed:33603117, PubMed:34194040, PubMed:34467854, PubMed:7759551, PubMed:8636323, PubMed:8702647, PubMed:8878438). Senses fluctuations in the circulating calcium concentration: activated by elevated circulating calcium, leading to decreased parathyroid hormone (PTH) secretion in parathyroid glands (By similarity). In kidneys, acts as a key regulator of renal tubular calcium resorption (By similarity). Ligand binding causes a conformation change that triggers signaling via guanine nucleotide-binding proteins (G proteins) and modulates the activity of downstream effectors (PubMed:38632411). CASR is coupled with different G(q)/G(11), G(i)/G(o)- or G(s)-classes of G proteins depending on the context (PubMed:38632411). In the parathyroid and kidney, CASR signals through G(q)/G(11) and G(i)/G(o) G proteins: G(q)/G(11) coupling activates phospholipase C-beta, releasing diacylglycerol (DAG) and inositol 1,4,5-trisphosphate (IP3) second messengers, while G(i)/G(o) coupling mediates inhibition of adenylate cyclase activity (PubMed:38632411, PubMed:7759551). The G protein- coupled receptor activity is activated by a co-agonist mechanism: aromatic amino acids, such as Trp or Phe, act concertedly with divalent cations, such as calcium or magnesium, to achieve full receptor activation (PubMed:27386547, PubMed:27434672, PubMed:32817431, PubMed:33603117, PubMed:34194040). Acts as an activator of the NLRP3 inflammasome via G(i)/G(o)-mediated signaling: down-regulation of cyclic AMP (cAMP) relieving NLRP3 inhibition by cAMP (PubMed:32843625). Acts as a regulator of proton-sensing receptor GPR68 in a seesaw manner: CASR-mediated signaling inhibits GPR68 signaling in response to extracellular calcium, while GPR68 inhibits CASR in presence of extracellular protons (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein
Tissue Location	Expressed in the temporal lobe, frontal lobe, parietal lobe, hippocampus, and cerebellum. Also found in kidney, lung, liver, heart, skeletal muscle, placenta.

Background

The calcium-sensing receptor (CaSR) is a G protein-coupled receptor that is expressed in the parathyroid hormone (PTH)-producing chief cells of the parathyroid gland, and the cells lining the kidney tubule. It senses small changes in circulating calcium concentration and couples this information to intracellular signaling pathways that modify PTH secretion or renal cation handling, thus this protein plays an essential role in maintaining mineral ion homeostasis. Mutations in this gene cause familial hypocalciuric hypercalcemia, familial, isolated hypoparathyroidism, and neonatal severe primary hyperparathyroidism.