

CASR Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP21649b

Product Information

Application WB, E **Primary Accession** P41180 Reactivity Human Host Rabbit Clonality polyclonal Isotype Rabbit IgG **Clone Names** RB48418 Calculated MW 120675

Additional Information

Gene ID 846

Other Names Extracellular calcium-sensing receptor, CaSR, Parathyroid cell calcium-sensing

receptor 1, PCaR1, CASR, GPRC2A, PCAR1

Target/Specificity This CASR antibody is generated from a rabbit immunized with a KLH

conjugated synthetic peptide between 1009-1045 amino acids from the

C-terminal region of human CASR.

Dilution WB~~1:1000-1:2000 E~~Use at an assay dependent concentration.

Format Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This

antibody is purified through a protein A column, followed by peptide affinity

purification.

Storage Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store

at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions CASR Antibody (C-term) is for research use only and not for use in diagnostic

or therapeutic procedures.

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:<u>22114145</u>, PubMed:<u>22789683</u>, PubMed:<u>23966241</u>, PubMed:<u>25104082</u>, PubMed:<u>25292184</u>, PubMed:<u>25766501</u>,

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(g)/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

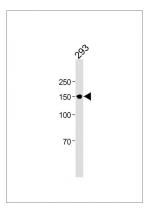
Senses changes in the extracellular concentration of calcium ions. The activity of this receptor is mediated by a G- protein that activates a phosphatidylinositol-calcium second messenger system.

References

Pearce S.H.S.,et al.Submitted (DEC-1994) to the EMBL/GenBank/DDBJ databases. Garrett J.E.,et al.J. Biol. Chem. 270:12919-12925(1995).
Aida K.,et al.Biochem. Biophys. Res. Commun. 214:524-529(1995).
Freichel M.,et al.Endocrinology 137:3842-3848(1996).
Aida K.,et al.J. Clin. Endocrinol. Metab. 80:2594-2598(1995).

Images

All lanes: Anti-CASR Antibody (C-term) at 1:1000 dilution Lane 1: 293 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 150 KDa Blocking/Dilution buffer: 5% NFDM/TBST.



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