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CASR Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP20157c

Specification

CASR Antibody (Center) - Product Information

Application	**WB,E**
Primary Accession	P41180
Other Accession	P48442, Q9QY96, P35384, NP_000379.2, O62714
Reactivity	**Mouse**
Predicted	**Bovine, Pig, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**260-287**

CASR Antibody (Center) - 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 rabbits immunized with a KLH conjugated synthetic peptide between 260-287 amino acids from the Central region of human CASR.

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

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. 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 (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

CASR Antibody (Center) - 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.

CASR Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

CASR Antibody (Center) - Images

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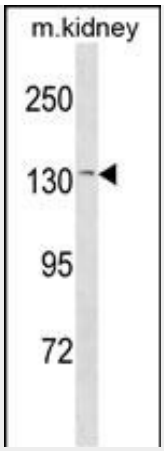

CASR Antibody (Center) (Cat. #AP20157c) western blot analysis in mouse kidney tissue lysates (35ug/lane).This demonstrates the CASR antibody detected the CASR protein (arrow).

CASR Antibody (Center) - Background

The protein encoded by this gene 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. [provided by RefSeq].

CASR Antibody (Center) - References

O'Seaghdha, C.M., et al. Hum. Mol. Genet. 19(21):4296-4303(2010)
Giroux, S., et al. Bone 47(5):975-981(2010)
Letz, S., et al. J. Clin. Endocrinol. Metab. 95 (10), E229-E233 (2010) :
Rey, O., et al. J. Cell. Physiol. 225(1):73-83(2010)
Kapur, K., et al. PLoS Genet. 6 (7), E1001035 (2010) :