10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Goat Anti-KCNQ4 Antibody

Peptide-affinity purified goat antibody
Catalog # AF1588a

Specification

Goat Anti-KCNQ4 Antibody - Product Information

Application	**WB, E**
Primary Accession	P56696
Other Accession	NP_751895, 9132
Reactivity	**Human**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**77101**

Goat Anti-KCNQ4 Antibody - Additional Information

Gene ID 9132

Other Names
Potassium voltage-gated channel subfamily KQT member 4, KQT-like 4, Potassium channel subunit alpha KvLQT4, Voltage-gated potassium channel subunit Kv7.4, KCNQ4

Dilution
WB~~1:1000
E~~N/A

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-KCNQ4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-KCNQ4 Antibody - Protein Information

Name KCNQ4 (HGNC:6298)

Function
Pore-forming subunit of the voltage-gated potassium (Kv) channel involved in the regulation of sensory cells excitability in the cochlea (PubMed:<a

href="http://www.uniprot.org/citations/10025409" target="_blank">10025409, PubMed:34767770). KCNQ4/Kv7.4 channel is composed of 4 pore-forming subunits assembled as tetramers (PubMed:34767770). Promotes the outflow of potassium ions in the repolarization phase of action potential which plays a role in regulating membrane potential of excitable cells (PubMed:10025409, PubMed:11245603, PubMed:34767770). The channel conducts a slowly activating and deactivating current (PubMed:10025409, PubMed:11245603). Current often shows some inward rectification at positive potentials (PubMed:10025409). Channel may be selectively permeable in vitro to other cations besides potassium, in decreasing order of affinity K(+) = Rb(+) > Cs(+) > Na(+) (PubMed:10025409). Important for normal physiological function of inner ear such as sensory perception of sound (PubMed:10025409, PubMed:10369879).

Cellular Location
Basal cell membrane {ECO:0000250|UniProtKB:Q9JK96}; Multi-pass membrane protein. Note=Situated at the basal membrane of cochlear outer hair cells. {ECO:0000250|UniProtKB:Q9JK96}

Tissue Location
Expressed in the outer, but not the inner, sensory hair cells of the cochlea (PubMed:10025409). Slightly expressed in heart, brain and skeletal muscle (PubMed:10025409)

Goat Anti-KCNQ4 Antibody - 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

Goat Anti-KCNQ4 Antibody - Images

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AF1588a (2 µg/ml) staining of Cerebellum lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

Goat Anti-KCNQ4 Antibody - Background

The protein encoded by this gene forms a potassium channel that is thought to play a critical role in the regulation of neuronal excitability, particularly in sensory cells of the cochlea. The current generated by this channel is inhibited by M1 muscarinic acetylcholine receptors and activated by retigabine, a novel anti-convulsant drug. The encoded protein can form a homomultimeric potassium channel or possibly a heteromultimeric channel in association with the protein encoded by the KCNQ3 gene. Defects in this gene are a cause of nonsyndromic sensorineural deafness type 2 (DFNA2), an autosomal dominant form of progressive hearing loss. Two transcript variants encoding different isoforms have been found for this gene.

Goat Anti-KCNQ4 Antibody - References

DFNA2 Nonsyndromic Hearing Loss Smith RJH, et al. , 1993. PMID 20301388.
Replication of previous genome-wide association studies of bone mineral density in premenopausal American women. Ichikawa S, et al. J Bone Miner Res, 2010 Aug. PMID 20200978.
Analysis of gene polymorphisms associated with K ion circulation in the inner ear of patients susceptible and resistant to noise-induced hearing loss. Pawelczyk M, et al. Ann Hum Genet, 2009 Jul. PMID 19523148.
Audioprofile-directed screening identifies novel mutations in KCNQ4 causing hearing loss at the DFNA2 locus. Hildebrand MS, et al. Genet Med, 2008 Nov. PMID 18941426.
KCNQ4 mutations associated with nonsyndromic progressive sensorineural hearing loss. Nie L. Curr Opin Otolaryngol Head Neck Surg, 2008 Oct. PMID 18797286.