KCNQ2/3/4/5 (Phospho Thr217/246/223/251) Rabbit pAb

CatalogNo: YP1006

Key Features

Host Species
- Rabbit

Reactivity
- Human,Mouse,Rat

Applications
- WB,IHC,IF,ELISA

MW
- 97kD (Calculated)

Isotype
- IgG

Recommended Dilution Ratios

WB 1:500-2000
IHC 1:100-1:300
ELISA 1:20000
IF 1:50-200

Storage

Storage*	-15°C to -25°C/1 year(Do not lower than -25°C)
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Basic Information

Clonality	Polyclonal

Immunogen Information

Immunogen	The antiserum was produced against synthesized peptide derived from human Kv7.3/KCNQ3 around the phosphorylation site of Thr246. AA range:191-240

Specificity	This antibody detects endogenous levels of KCNQ2/3/4/5 only when phosphorylated at Human:T217/246/223/251, Mouse:T217/247/224/252, Rat:T217/247/-/-..The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):GGtWK

Target Information

Gene name	KCNQ2
Protein Name	Potassium voltage-gated channel subfamily KQT member 2

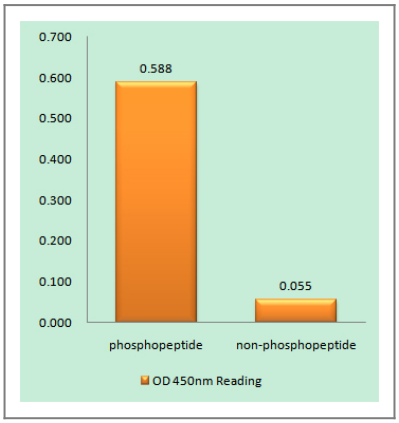
Organism	Gene ID	UniProt ID
Human	3785; 3786; 9132; 56479;	O43526; O43525; P56696; Q9NR82;
Mouse	16536; 110862; 60613; 226922;	
Rat	170848; 29682;	O88943; O88944; Q9JK96;

Cellular Localization	Cell membrane ; Multi-pass membrane protein .
Tissue specificity	In adult and fetal brain. Highly expressed in areas containing neuronal cell bodies, low in spinal cord and corpus callosum. Isoform 2 is preferentially expressed in differentiated neurons. Isoform 6 is prominent in fetal brain, undifferentiated neuroblastoma cells and brain tumors.

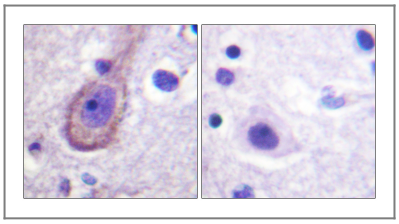
Function

Alternative products:Additional isoforms seem to exist,Disease:Defects in KCNQ2 are the cause of benign neonatal epilepsy type 1 (EBN1) [MIM:121200]. Benign neonatal epilepsy is characterized by clusters of seizures occurring in the first days of life. Most patients have spontaneous remission by 12 months of age and show normal psychomotor development. The disorder is distinguished from benign familial infantile seizures by an earlier age at onset.,Disease:Defects in KCNQ2 are the cause of benign neonatal epilepsy with myokymia (EBNMK) [MIM:606437]. EBNMK is a syndrome characterized by benign neonatal convulsions followed later in life by myokymia.,Disease:Defects in KCNQ2 are the cause of myokymia isolated type 2 (MK2) [MIM:606437]. Myokymia is a condition characterized by spontaneous involuntary contraction of muscle fiber groups that can be observed as vermiform movement of the overlying skin. Electromyography typically shows continuous motor unit activity with spontaneous oligo- and multiplet-discharges of high intraburst frequency (myokymic discharges). Isolated spontaneous muscle twitches occur in many persons and have no grave significance.,Domain:The segment S4 is probably the voltage-sensor and is characterized by a series of positively charged amino acids at every third position.,Function:Probably important in the regulation of neuronal excitability. Associates with KCNQ3 to form a potassium channel with essentially identical properties to the channel underlying the native M-current, a slowly activating and deactivating potassium conductance which plays a critical role in determining the subthreshold electrical excitability of neurons as well as the responsiveness to synaptic inputs. KCNQ2/KCNQ3 current is blocked by linopirdine and XE991, and activated by the anticonvulsant retigabine. Muscarinic agonist oxotremorine-M strongly suppress KCNQ2/KCNQ3 current in cells in which cloned KCNQ2/KCNQ3 channels were coexpressed with M1 muscarinic receptors.,miscellaneous:Inclusion of isoform 6 in heteromultimers results in attenuation of potassium current. Prominent expression of isoform 6 in the developing brain may alter firing repertoires of immature neurons excitability to provide cues for proliferation rather than differentiation.,miscellaneous:Mutagenesis experiments were carried out in Xenopus oocytes by coexpression of either KCNQ2(mut) and KCNQ3 at the ratio of 1:1, or of KCNQ2(mut), KCNQ2(wt) and KCNQ3 at the ratio of 1:1:2, to mimic the situation in a heterozygous patient with BFNC1 disease.,PTM:In Xenopus oocytes KCNQ2/KCNQ3 heteromeric current can be increased by intracellular cyclic AMP, an effect that depends on phosphorylation of Ser-52 in the N-terminus region.,similarity:Belongs to the potassium channel family. KQT subfamily.,subunit:Heteromultimer with KCNQ3. May associate with KCNE2.,tissue specificity:In adult and fetal brain. Highly expressed in areas containing neuronal cell bodies, low in spinal chord and corpus callosum. Isoform 2 is preferentially expressed in differentiated neurons, whereas isoform 6 is prominent in fetal brain, undifferentiated neuroblastoma cells, and brain tumors.,

Validation Data



Enzyme-Linked Immunosorbent Assay (Phospho-ELISA) for Immunogen Phosphopeptide (Phospho-left) and Non-Phosphopeptide (Phospho-right), using Kv7.3/KCNQ3 (Phospho-Thr246) Antibody



Immunohistochemistry analysis of paraffin-embedded human brain, using Kv7.3/KCNQ3 (Phospho-Thr246) Antibody. The picture on the right is blocked with the phospho peptide.

Contact information

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Please scan the QR code to access additional product information:
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