

Product datasheet for **TA328622**

KCNN3 Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide DTSGHFHDSGVGDLDEDPKC, corresponding to amino acid residues 2-21 of human KCa2.3 (SK3). Intracellular, N-terminus.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1 % BSA, 0.025% NaN ₃ .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	potassium calcium-activated channel subfamily N member 3
Database Link:	NP_002240 Entrez Gene 54263 Rat Entrez Gene 140493 Mouse Entrez Gene 3782 Human Q9UGI6



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Background:

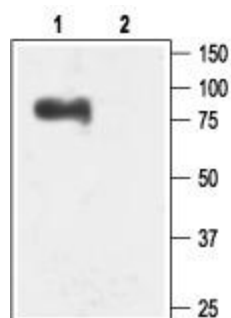
KCa2.3 is a member of the Ca²⁺-activated K⁺ channels family with small conductance that includes KCa2.1 (SK1) and KCa2.2 (SK2). The channel is voltage insensitive and is activated by intracellular Ca²⁺ in the submicromolar range. It has, though, a similar topology to that of voltage-dependent K⁺ channels (Kv channels), that is six transmembrane domains and intracellular N- and C-termini. The functional channel of all the KCa2 family members is a multimeric protein composed of four pore-forming subunits. KCa2 channels are extremely sensitive to the levels of intracellular Ca²⁺ and concentrations as low as 300-700 nM can open the channels very rapidly (5-15 ms). Hence, the KCa2 channels are highly sensitive and fast Ca²⁺ sensors resembling other known Ca²⁺-binding proteins. This type of Ca²⁺-dependent activation is achieved by the constitutive binding of the KCa2 channels to calmodulin, a highly expressed Ca²⁺-binding protein via a calmodulin-binding domain situated at the cytoplasmic C-termini. Pharmacologically, the KCa2 channels are the only known targets of the bee venom toxin Apamin, with KCa2.1 being the less sensitive, KCa2.2 the most sensitive and KCa2.3 showing intermediate sensitivity. KCa2.3 is predominantly expressed in the nervous system although expression in endothelial cells, heart and liver have been described. KCa2.3 is known to be involved in the regulation of neuronal excitability. They do so mainly via a phenomenon known as afterhyperpolarization in which KCa2 channels open in response to increased intracellular Ca²⁺ concentrations that result from the entry of extracellular Ca²⁺ through voltage-dependent Ca²⁺ channels during action potentials. In this way, KCa2 channels effectively form a Ca²⁺-mediated feedback loop. KCa2.3 is involved in the control of firing rate and subsequent dopamine secretion from midbrain dopaminergic neurons. Since malfunction of these neurons is involved in several pathological disorders such as Parkinson's disease and schizophrenia, modulators of the KCa2.3 channels have been proposed to be of therapeutic value in these diseases.

Synonyms:

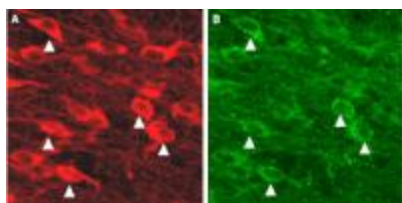
hSK3; KCa2.3; SK3; SKCA3

Protein Families:

Druggable Genome, Ion Channels: Potassium, Transmembrane

Product images:

Western blot analysis of rat brain membranes: 1. Anti-KCa2.3 (SK3) (N-term) antibody, (1:200). 2. Anti-KCa2.3 (SK3) (N-term) antibody, preincubated with the control peptide antigen.



Expression of KCa2.3 in mouse dopaminergic neurons. Immunohistochemical staining of mouse dopaminergic neurons using Anti-KCa2.3 (SK3) (N-term) antibody. A. KCa2.3 is detected in substantia nigra pars compacta. B. Tyrosine hydroxylase staining shows dopaminergic neurons. Triangles point at cells with colocalization.