

Kv3.1b

Cat.No. 242 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: not tested yet IHC: 1 : 200 IHC-P/FFPE: not tested yet
Immunogen	Synthetic peptide corresponding to AA 567 to 585 from mouse Kv3.1b (UniProt Id: P15388)
Reactivity	Reacts with: human (P48547), rat (P25122), mouse (P15388), cow. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for Kv3.1b.
matching control	242-OP

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Voltage-gated potassium (Kv) channels regulate many aspects of neuronal excitability like shaping of action potentials or modulating spike patterns.

Mammalian neurons express more than 20 different Kv subunits that can be subdivided into 12 families. Heteromeric assembly of 4 subunits and differential phosphorylation of Kv channels gives rise to a huge molecular and functional diversity.

The related proteins Kv3.1 - Kv3.4 form the Shaw-type subfamily. **Kv3.1b**, also known as **Kcnc 1**, is highly enriched in neurons that fire at high frequencies such as fast spiking (FS) interneurons of the cortex and hippocampus and neurons in the globus pallidus.

Selected General References

Precise localization of the voltage-gated potassium channel subunits Kv3.1b and Kv3.3 revealed in the molecular layer of the rat cerebellar cortex by a pre-embedding immunogold method.

Puente N, Mendizabal-Zubiaga J, Elezgarai I, Reguero L, Buceta I, Grandes P
Histochemistry and cell biology (2010) 134(4): 403-9.

Quantitative analysis of neurons with Kv3 potassium channel subunits, Kv3.1b and Kv3.2, in macaque primary visual cortex.

Constantinople CM, Disney AA, Maffie J, Rudy B, Hawken MJ
The Journal of comparative neurology (2009) 516(4): 291-311.

Subcellular localization of the voltage-gated potassium channels Kv3.1b and Kv3.3 in the cerebellar dentate nucleus of glutamic acid decarboxylase 67-green fluorescent protein transgenic mice.

Alonso-Espinaco V, Elezgarai I, Díez-García J, Puente N, Knöpfel T, Grandes P
Neuroscience (2008) 155(4): 1059-69.

Brain-derived neurotrophic factor controls functional differentiation and microcircuit formation of selectively isolated fast-spiking GABAergic interneurons.

Berghuis P, Dobszay MB, Sousa KM, Schulte G, Mager PP, Härtig W, Görös TJ, Zilberter Y, Ernfors P, Harkany T
The European journal of neuroscience (2004) 20(5): 1290-306.

Perineuronal nets in the rat medial nucleus of the trapezoid body surround neurons immunoreactive for various amino acids, calcium-binding proteins and the potassium channel subunit Kv3.1b.

Härtig W, Singer A, Grosche J, Brauer K, Ottersen OP, Brückner G
Brain research (2001) 899(1-2): 123-33.

Cortical neurons immunoreactive for the potassium channel Kv3.1b subunit are predominantly surrounded by perineuronal nets presumed as a buffering system for cations.

Härtig W, Derouiche A, Welt K, Brauer K, Grosche J, Mäder M, Reichenbach A, Brückner G
Brain research (1999) 842(1): 15-29.