

Ca²⁺ channel R-type, α -1E subunit

Cat.No. 152 404; Polyclonal Guinea pig antibody, 100 μ l antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	100 μ l antiserum, lyophilized. For reconstitution add 100 μ l H ₂ O, then aliquot and store at -20°C until use.
Applications	WB: 1 : 500 up to 1 : 1000 (see remarks) IP: not tested yet ICC: not tested yet IHC: not tested yet IHC-P/FFPE: not tested yet
Immunogen	Recombinant protein corresponding to AA 1921 to 2222 from rat Ca ²⁺ channel R-type α -1E (UniProt Id: Q07652)
Reactivity	Reacts with: rat (Q07652), mouse (Q61290). Other species not tested yet.
Specificity	Specific for Ca ²⁺ channel α -1E.
Remarks	WB: Due to its large size, this antibody requires special gel-electrophoresis and Western blot protocols for visualization by immunoblotting. Excellent results can be obtained with the 4-12% TRIS-glycine gradient gels of anamed or NuPage TRIS-acetate gels from Invitrogen. This protein tends to aggregate after boiling, making it necessary to run SDS-PAGE with non-boiled samples. ECL detection is recommended:

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

Voltage gated calcium channels (VGCCs), also referred to as voltage sensitive calcium channels (VSCCs), are present in most excitable cells. They mediate the influx of Ca²⁺ ions into the cell and trigger the release of neurotransmitters or hormones but are also involved in other calcium dependent processes like metabolism, cell proliferation and cell death.

VGCCs are composed of four subunits (α -1, α -2, β and δ) in a 1:1:1:1 ratio. The α -1E isoform occurs in VGCCs of the R-type which belongs to the high voltage activated group (hva).

Selected General References

Electrophysiological and molecular evidence of L-(Cav1), N- (Cav2.2), and R- (Cav2.3) type Ca²⁺ channels in rat cortical astrocytes.

D'Ascenzo M, Vairano M, Andreassi C, Navarra P, Azzena GB, Grassi C
Glia (2004) 45(4): 354-63.

Quantitative regional and ultrastructural localization of the Ca(v)2.3 subunit of R-type calcium channel in mouse brain.
Parajuli LK, Nakajima C, Kulik A, Matsui K, Schneider T, Shigemoto R, Fukazawa Y
The Journal of neuroscience : the official journal of the Society for Neuroscience (2012) 32(39): 13555-67.

Localization of the calcium channel subunits Cav1.2 (α 1C) and Cav2.3 (α 1E) in the mouse organ of Corti.
Waka N, Knipper M, Engel J
Histology and histopathology (2003) 18(4): 1115-23.

Functional specialization of presynaptic Cav2.3 Ca²⁺ channels.
Dietrich D, Kirschstein T, Kukley M, Pereverzev A, von der Brälie C, Schneider T, Beck H
Neuron (2003) 39(3): 483-96.

The α 1E calcium channel exhibits permeation properties similar to low-voltage-activated calcium channels.
Bourinet E, Zamponi GW, Stea A, Soong TW, Lewis BA, Jones LP, Yue DT, Snutch TP
The Journal of neuroscience : the official journal of the Society for Neuroscience (1996) 16(16): 4983-93.

Isoform expression of the voltage-dependent calcium channel α 1E.
Marubio LM, Rönfeld M, Dasgupta S, Miller RJ, Philipson LH
Receptors & channels (1996) 4(4): 243-51.

Structure and functional characterization of neuronal α 1E calcium channel subtypes.
Williams ME, Marubio LM, Deal CR, Hans M, Brust PF, Philipson LH, Miller RJ, Johnson EC, Harpold MM, Ellis SB
The Journal of biological chemistry (1994) 269(35): 22347-57.