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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

L-type Ca⁺⁺ CP β₄ (m): 293T Lysate: sc-127077

BACKGROUND

Voltage-dependent calcium channels are important for the release of neurotransmitters in neurons. L-type (long lasting current) voltage-dependent calcium channels are composed of four subunits: an α₁ subunit, a β subunit, a γ subunit and an α_{2δ} subunit. The β subunit is encoded by four genes, β₁-β₄, differing by about 20%. The various β subunits contribute to the diversity of calcium currents and are also involved in membrane trafficking of the α₁ subunit. L-type Ca⁺⁺ CP β₄ (calcium channel voltage-dependent subunit β₄), also known as CACNB4, belongs to the calcium channel β subunit family. It is the most highly expressed subunit in the cerebellum. L-type Ca⁺⁺ CP β₄ localizes to the cytoplasm and functions by regulating G protein inhibition, current amplitude and voltage dependence of activation and inactivation. A splice variant exists for L-type Ca⁺⁺ CP β₄ which enhances cellular excitability. Mutations in the gene encoding L-type Ca⁺⁺ CP β₄ are associated with idiopathic generalized epilepsy (IGE) and juvenile myoclonic epilepsy (JME).

REFERENCES

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- Escayg, A., et al. 2000. Coding and noncoding variation of the human calcium-channel β₄-subunit gene CACNB4 in patients with idiopathic generalized epilepsy and episodic ataxia. *Am. J. Hum. Genet.* 66: 1531-1539.
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- Suzuki, T., et al. 2006. Mutation analyses of genes on 6p12-p11 in patients with juvenile myoclonic epilepsy. *Neurosci. Lett.* 405: 126-131.
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CHROMOSOMAL LOCATION

Genetic locus: *Cacnb4* (mouse) mapping to 2 C1.1.

PRODUCT

L-type Ca⁺⁺ CP β₄ (m): 293T Lysate represents a lysate of mouse L-type Ca⁺⁺ CP β₄ transfected 293T cells and is provided as 100 μg protein in 200 μl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

L-type Ca⁺⁺ CP β₄ (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive L-type Ca⁺⁺ CP β₄ antibodies. Recommended use: 10-20 μl per lane.

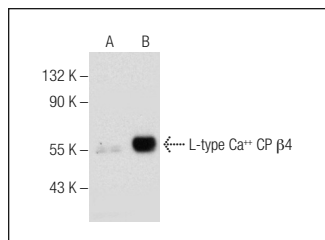
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

L-type Ca⁺⁺ CP β₄ (H-7): sc-376432 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse L-type Ca⁺⁺ CP β₄ expression in L-type Ca⁺⁺ CP β₄ transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



L-type Ca⁺⁺ CP β₄ (H-7): sc-376432. Western blot analysis of L-type Ca⁺⁺ CP β₄ expression in non-transfected: sc-117752 (A) and mouse L-type Ca⁺⁺ CP β₄ transfected: sc-127077 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.