SANTA CRUZ BIOTECHNOLOGY, INC.

zero (N-20): sc-18531

BACKGROUND

Zero, also known as myelin protein zero (MPZ) is a Type 1 integral membrane glycoprotein that mediates adhesion of spiraling wraps of the myelin sheath in order to ensure stable synaptic transmission. Zero protein encompasses approximately 50% of total protein in the sheath scaffolding in contribution to structural integrity of peripheral myelin. Zero guides the compact myelin wrapping process through glycine zipper packing interface-dependent dimer and tetramer formation. Mutations (e.g. G134R) can abrogate multimer formation, cause demyelinating neuropathies, and are known to contribute to conditions that include Charcot-Marie-Tooth disease. Zero cytoplasmic domain undergoes serine and tyrosine phosphorylation, which appears to be prevalent during peak nerve myelination. Zero transcript is moderate in brain, abundant in thymus and most abundant in white matter of the CNS.

REFERENCES

1. Shy, M.E., Jáni, A., Krajewski, K., Grandis, M., Lewis, R.A., Li, J., Shy, R.R., Balsamo, J., Lilien, J., Garbern, J.Y. and Kamholz, J. 2004. Phenotypic clustering in MPZ mutations. Brain 127: 371-384.
2. Plotkowski, M.L., Kim, S., Phillips, M.L., Partridge, A.W., Deber, C.M., Bowie, J.U. 2007. Transmembrane domain of myelin protein zero can form dimers: possible implications for myelin construction. Biochemistry 46: 12164-12173.
3. Gaboreanu, A.M., Hrstka, R., Xu, W., Shy, M., Kamholz, J., Lilien, J. and Balsamo, J. 2007. Myelin protein zero/P0 phosphorylation and function require an adaptor protein linking it to RACK1 and PKC α. J. Cell Biol. 177: 707-716.
4. Taguchi, K., Kumanogoh, H., Nakamura, S., Miyata, S. and Maekawa, S. 2007. Myelin protein zero is one of the components of the detergent-resistant membrane microdomain fraction prepared from rat pituitary. J. Mol. Histol. 38: 79-85.
5. Lemke, G. 2008. Isolation and analysis of the gene encoding peripheral myelin protein zero. Neuron 60: 403.

CHROMOSOMAL LOCATION

Genetic locus: MPZ (human) mapping to 1q23.3; Mpz (mouse) mapping to 1 H3.

SOURCE

zero (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of zero of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18531 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

zero (N-20) is recommended for detection of zero of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

zero (N-20) is also recommended for detection of zero in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for zero siRNA (h): sc-44194, zero siRNA (m): sc-44497, zero shRNA Plasmid (h): sc-44194-SH, zero shRNA Plasmid (m): sc-44497-SH, zero shRNA (h) Lentiviral Particles: sc-44194-V and zero shRNA (m) Lentiviral Particles: sc-44497-V.

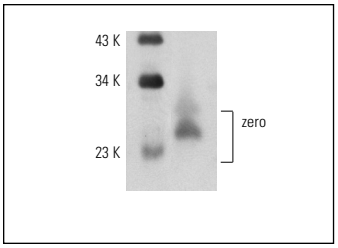
Molecular Weight of zero: 28 kDa.

Positive Controls: rat sciatic nerve tissue extract.

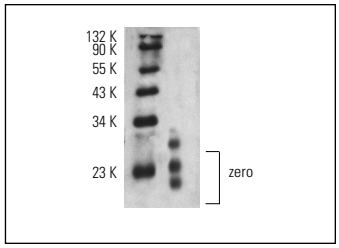
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



zero (N-20): sc-18531. Western blot analysis of zero expression in rat sciatic nerve tissue extract.



zero (N-20): sc-18531. Western blot analysis of zero expression in rat sciatic nerve tissue extract.

SELECT PRODUCT CITATIONS

1. Lutz, D., Wolters-Eisfeld, G., Schachner, M. and Kleene, R. 2013. Cathepsin E generates a sumoylated intracellular fragment of the cell adhesion molecule L1 to promote neuronal and Schwann cell migration as well as myelination. J. Neurochem. 128: 713-724.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.