SANTA CRUZ BIOTECHNOLOGY, INC.

Peroxin 12 (C-13): sc-109394

BACKGROUND

Peroxisomes are single-membrane bound organelles present in virtually all eukaryotic cells. They are involved in numerous catabolic and anabolic pathways, including β-oxidation of very long chain fatty acids, metabolism of hydrogen peroxide, plasmalogen biosynthesis and bile acid synthesis. The Peroxin family, which includes more than twenty members, is required for peroxisome biogenesis. Peroxin 12, also known as PEX12 (peroxisomal biogenesis factor 12) or PAF-3 (peroxisome assembly factor 3), is a 359 amino acid multi-pass membrane protein that localizes to peroxisome membranes and belongs to the pex2/pex10/pex12 family. Peroxin 12 interacts with Peroxin 5, Peroxin 10 and Peroxin 19, and is required for protein import into peroxisomes. Defects in the gene encoding Peroxin 12 are the cause of peroxisome biogenesis disorder complementation group 3 (PBD-CG3) and Zellweger syndrome, both of which arise from a failure of peroxisomal protein import.

REFERENCES

1. Chang, C.C., Lee, W.H., Moser, H., Valle, D. and Gould, S.J. 1997. Isolation of the human PEX12 gene, mutated in group 3 of the peroxisome biogenesis disorders. Nat. Genet. 15: 385-388.
2. Okumoto, K., Shimozawa, N., Kawai, A., Tamura, S., Tsukamoto, T., Osumi, T., Moser, H., Wanders, R.J., Suzuki, Y., Kondo, N. and Fujiki, Y. 1998. PEX12, the pathogenic gene of group III Zellweger syndrome: cDNA cloning by functional complementation on a CHO cell mutant, patient analysis, and characterization of PEX12p. Mol. Cell. Biol. 18: 4324-4336.
3. Chang, C.C., Warren, D.S., Sacksteder, K.A. and Gould, S.J. 1999. PEX12 interacts with PEX5 and PEX10 and acts downstream of receptor docking in peroxisomal matrix protein import. J. Cell Biol. 147: 761-774.
4. Sacksteder, K.A., Jones, J.M., South, S.T., Li, X., Liu, Y. and Gould, S.J. 2000. PEX19 binds multiple peroxisomal membrane proteins, is predominantly cytoplasmic, and is required for peroxisome membrane synthesis. J. Cell Biol. 148: 931-944.
5. Fransen, M., Wylin, T., Brees, C., Mannaerts, G.P. and Van Veldhoven, P.P. 2001. Human pex19p binds peroxisomal integral membrane proteins at regions distinct from their sorting sequences. Mol. Cell. Biol. 21: 4413-4424.
6. Fan, J., Quan, S., Orth, T., Awai, C., Chory, J. and Hu, J. 2005. The Arabidopsis PEX12 gene is required for peroxisome biogenesis and is essential for development. Plant Physiol. 139: 231-239.
7. Krazy, H. and Michels, P.A. 2006. Identification and characterization of three peroxins—PEX6, PEX10 and PEX12—involved in glycosome biogenesis in Trypanosoma brucei. Biochim. Biophys. Acta 1763: 6-17.
8. Krause, C., Rosewich, H., Thanos, M. and Gärtner, J. 2006. Identification of novel mutations in PEX2, PEX6, PEX10, PEX12, and PEX13 in Zellweger spectrum patients. Hum. Mutat. 27: 1157.
9. Yik, W.Y., Steinberg, S.J., Moser, A.B., Moser, H.W. and Hacia, J.G. 2009. Identification of novel mutations and sequence variation in the Zellweger syndrome spectrum of peroxisome biogenesis disorders. Hum. Mutat. 30: E467-E480.

CHROMOSOMAL LOCATION

Genetic locus: PEX12 (human) mapping to 17q12; Pex12 (mouse) mapping to 11 C.

SOURCE

Peroxin 12 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of Peroxin 12 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-109394 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Peroxin 12 (C-13) is recommended for detection of Peroxin 12 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Peroxin 12 (C-13) is also recommended for detection of Peroxin 12 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Peroxin 12 siRNA (h): sc-93719, Peroxin 12 siRNA (m): sc-152172, Peroxin 12 shRNA Plasmid (h): sc-93719-SH, Peroxin 12 shRNA Plasmid (m): sc-152172-SH, Peroxin 12 shRNA (h) Lentiviral Particles: sc-93719-V and Peroxin 12 shRNA (m) Lentiviral Particles: sc-152172-V.

Molecular Weight of Peroxin 12: 41 kDa.

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) 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.

STORAGE

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

RESEARCH USE

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