SANTA CRUZ BIOTECHNOLOGY, INC.

Peroxin 5 (E-8): sc-390294

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 gene family, which includes more than 20 members, is required for peroxisome biogenesis. Two members of this family, Peroxin 5 (Pex5) and Peroxin 7 (Pex7), are receptors for proteins that contain the peroxisome targeting signal 1 (PTS1) and 2 (PTS2), respectively, and shuttle these proteins from the cytosol to the peroxisome. Peroxin 5, also designated PTS1 receptor, is expressed as two isoforms, Pex5L and Pex5S. Pex5L transports PTS1 and Pex7-PTS2 cargo complexes to the initial Pex5 docking site, Pex14, while Pex5S transports only PTS1 cargoes. Pex5 and Pex7 also require either direct or indirect interaction with Peroxin 13 (Pex13) for proper import into peroxisomes. Mutations in the Peroxin genes result in peroxisome biogenesis disorders (PBDs). Defects in the Pex5 gene are linked to Zellweger syndrome (cerebro-hapato-renal syndrome) of complementation group 2 (CG2), the most severe form of PBDs. Zellweger syndrome is characterized by abnormal neuronal migration in the central nervous system and severe neurologic dysfunction, which leads to early death.

REFERENCES

1. Girzalsky, W., et al. 1999. Involvement of Pex13p in Pex14p localization and peroxisomal targeting signal 2-dependent protein import into peroxisomes. J. Cell Biol. 144: 1151-1162.
2. Fujiki, Y. 2000. Peroxisome biogenesis and peroxisome biogenesis disorders. FEBS Lett. 476: 42-46.
3. Gartner, J. 2000. Organelle disease: peroxisomal disorders. Eur. J. Pediatr. 159: S236-S239.
4. Collins, C.S., et al. 2000. The peroxisome biogenesis factors pex4p, pex22p, pex1p, and pex6p act in the terminal steps of peroxisomal matrix protein import. Mol. Cell. Biol. 20: 7516-7526.
5. Dodt, G., et al. 2001. Domain mapping of human PEX5 reveals functional and structural similarities to *Saccharomyces cerevisiae* Pex18p and Pex21p. J. Biol. Chem. 276: 41769-41781.
6. Baumgart, E., et al. 2001. Mitochondrial alterations caused by defective peroxisomal biogenesis in a mouse model for Zellweger syndrome (PEX5 knockout mouse). Am. J. Pathol. 159: 1477-1494.
7. Faust, P.L., et al. 2001. The peroxisome deficient PEX2 Zellweger mouse: pathologic and biochemical correlates of lipid dysfunction. J. Mol. Neurosci. 16: 289-297.

CHROMOSOMAL LOCATION

Genetic locus: PEX5 (human) mapping to 12p13.31; Pex5 (mouse) mapping to 6 F2.

SOURCE

Peroxin 5 (E-8) is a mouse monoclonal antibody raised against amino acids 330-621 mapping near the C-terminus of Peroxin 5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Peroxin 5 (E-8) is recommended for detection of Peroxin 5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for Peroxin 5 siRNA (h): sc-40823, Peroxin 5 siRNA (m): sc-40824, Peroxin 5 shRNA Plasmid (h): sc-40823-SH, Peroxin 5 shRNA Plasmid (m): sc-40824-SH, Peroxin 5 shRNA (h) Lentiviral Particles: sc-40823-V and Peroxin 5 shRNA (m) Lentiviral Particles: sc-40824-V.

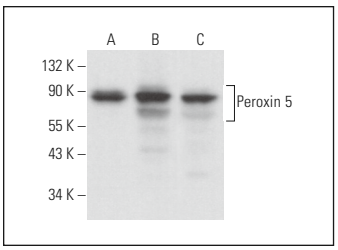
Molecular Weight of Peroxin 5: 80 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, mouse liver extract: sc-2256 or mouse testis extract: sc-2405.

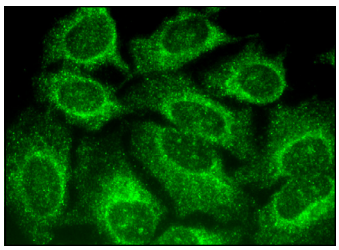
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Peroxin 5 (E-8): sc-390294. Western blot analysis of Peroxin 5 expression in HeLa whole cell lysate (**A**) and mouse liver (**B**) and mouse testis (**C**) tissue extracts.



Peroxin 5 (E-8): sc-390294. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.