

Peroxin 5 (F-9): sc-137135

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. Gartner, J. 2000. Organelle disease: peroxisomal disorders. *Eur. J. Pediatr.* 159: 236-239.
3. Fujiki, Y. 2000. Peroxisome biogenesis and peroxisome biogenesis disorders. *FEBS Lett.* 476: 42-46.

CHROMOSOMAL LOCATION

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

SOURCE

Peroxin 5 (F-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 211-239 within an internal region of Peroxin 5 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-137135 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Peroxin 5 (F-9) 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 μ g per 100-500 μ g 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).

Peroxin 5 (F-9) is also recommended for detection of Peroxin 5 in additional species, including equine and porcine.

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.

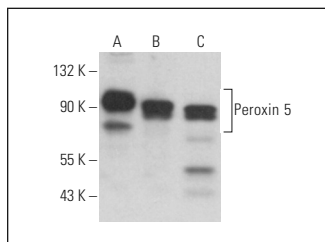
Molecular Weight of Peroxin 5: 80 kDa.

Positive Controls: c4 whole cell lysate: sc-364186, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

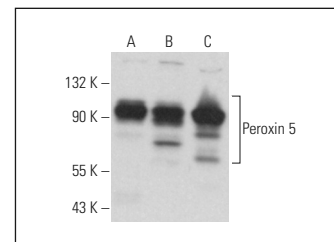
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 (F-9): sc-137135. Western blot analysis of Peroxin 5 expression in Hep G2 (A), NIH/3T3 (B) and PC-12 (C) whole cell lysates.



Peroxin 5 (F-9): sc-137135. Western blot analysis of Peroxin 5 expression in HeLa (A), SK-BR-3 (B) and c4 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Piao, L., et al. 2019. Impaired peroxisomal fitness in obese mice, a vicious cycle exacerbating adipocyte dysfunction via oxidative stress. *Antioxid. Redox Signal.* 31: 1339-1351.

RESEARCH USE

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