

## Peroxin 14 (N-20): sc-23197

### BACKGROUND

Peroxisomes are single-membrane bound organelles present in virtually all eukaryotic cells. They are involved in numerous catabolic and anabolic pathways, including  $\beta$ -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, Pex5<sub>L</sub> and Pex5<sub>S</sub>. Pex5<sub>L</sub> transports PTS1 and Pex7-PTS2 cargo complexes to the initial Pex5 docking site, Pex14, while Pex5<sub>S</sub> 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: S236-S239.
3. Fujiki, Y. 2000. Peroxisome biogenesis and peroxisome biogenesis disorders. *FEBS Lett.* 476: 42-46.
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: 7516-7556.

### CHROMOSOMAL LOCATION

Genetic locus: PEX14 (human) mapping to 1p36.22; Pex14 (mouse) mapping to 4 E2.

### SOURCE

Peroxin 14 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Peroxin 14 of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23197 P, (100  $\mu$ g 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

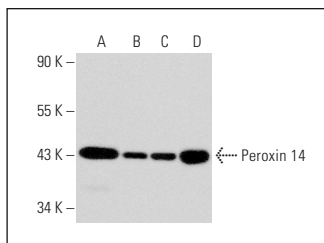
Peroxin 14 (N-20) is recommended for detection of Peroxin 14 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 14 (N-20) is also recommended for detection of Peroxin 14 in additional species, including equine, canine, bovine and porcine.

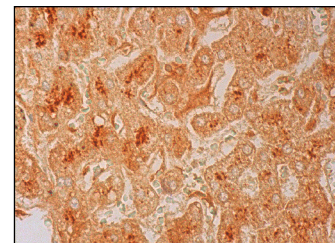
Suitable for use as control antibody for Peroxin 14 siRNA (h): sc-40827, Peroxin 14 siRNA (m): sc-40828, Peroxin 14 shRNA Plasmid (h): sc-40827-SH, Peroxin 14 shRNA Plasmid (m): sc-40828-SH, Peroxin 14 shRNA (h) Lentiviral Particles: sc-40827-V and Peroxin 14 shRNA (m) Lentiviral Particles: sc-40828-V.

Positive Controls: HeLa whole cell lysate: sc-2200, A549 cell lysate: sc-2413 or SH-SY5Y cell lysate: sc-3812.

### DATA



Peroxin 14 (N-20): sc-23197. Western blot analysis of Peroxin 14 expression in A549 (A), SH-SY5Y (B) and HeLa (C) whole cell lysates and human ovary tissue extract (D).



Peroxin 14 (N-20): sc-23197. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

### STORAGE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

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Try **Peroxin 14 (1G12): sc-293383**, our highly recommended monoclonal alternative to Peroxin 14 (N-20).