



## PPAR $\alpha$ (C-20): sc-1982

### BACKGROUND

Peroxisome proliferator-activated receptors (PPARs) are nuclear hormone receptors that can be activated by a variety of compounds including fibrates, thiazolidinediones, prostaglandins and fatty acids. Three PPAR subtypes, designated PPAR $\alpha$ , PPAR $\beta$  and PPAR $\gamma$ , have been described. PPARs promote transcription by forming heterodimers with members of the retinoid X receptor (RXR) family of steroid receptors and binding to specific DNA motifs termed PPAR-response elements (PPREs). PPAR $\alpha$  is abundant in primary hepatocytes where it regulates the expression of proteins involved in fatty acid metabolism. PPAR $\beta$  is the most widely distributed subtype and is often expressed at high levels. PPAR $\gamma$  is predominantly seen in adipose tissue where it plays a critical role in regulating adipocyte differentiation. Interestingly, both the orphan nuclear hormone receptor LXR $\alpha$  and thyroid receptor (TR) have been shown to act as antagonists of PPAR $\alpha$ /RXR $\alpha$  binding to PPREs.

### REFERENCES

1. Brun, R.P., et al. 1996. Differential activation of adipogenesis by multiple PPAR isoforms. *Genes Dev.* 10: 974-984.
2. Mansen, A., et al. 1996. Expression of the peroxisome proliferator-activated receptor (PPAR) in the mouse colonic mucosa. *Biochem. Biophys. Res. Comm.* 222: 844-851.
3. Sterchele, P.F., et al. 1996. Regulation of peroxisome proliferator-activated receptor- $\alpha$  mRNA in rat liver. *Arch. Biochem. Biophys.* 326: 281-289.
4. Lemberger, T., et al. 1996. Expression of the peroxisome proliferator-activated receptor  $\alpha$  gene is stimulated by stress and follows a diurnal rhythm. *J. Biol. Chem.* 271: 1764-1769.
5. Braissant, O., et al. 1996. Differential expression of peroxisome proliferator-activated receptors (PPARs): tissue distribution of PPAR- $\alpha$ , - $\beta$ , and - $\gamma$  in the adult rat. *Endocrinology* 137: 354-366.
6. Miyata, K.S., et al. 1996. The orphan nuclear hormone receptor LXR $\alpha$  interacts with the peroxisome proliferator-activated receptor and inhibits peroxisome proliferator signaling. *J. Biol. Chem.* 271: 9189-9192.

### CHROMOSOMAL LOCATION

Genetic locus: PPARA (human) mapping to 22q13.31; Ppara (mouse) mapping to 15 E2.

### SOURCE

PPAR $\alpha$  (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PPAR $\alpha$  of human origin.

### 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.

### 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-1982 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-1982 X, 200  $\mu$ g/0.1 ml.

### APPLICATIONS

PPAR $\alpha$  (C-20) is recommended for detection of PPAR $\alpha$  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); weakly cross-reactive with PPAR $\beta$  and PPAR $\gamma$ .

Suitable for use as control antibody for PPAR $\alpha$  siRNA (h): sc-36307, PPAR $\alpha$  siRNA (m): sc-36308, PPAR $\alpha$  shRNA Plasmid (h): sc-36307-SH, PPAR $\alpha$  shRNA Plasmid (m): sc-36308-SH, PPAR $\alpha$  shRNA (h) Lentiviral Particles: sc-36307-V and PPAR $\alpha$  shRNA (m) Lentiviral Particles: sc-36308-V.

PPAR $\alpha$  (C-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PPAR $\alpha$ : 55 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

### SELECT PRODUCT CITATIONS

1. Linseman, D.A., et al. 2001. Liporegulation in diet-induced obesity. The antisteatotic role of hyperleptinemia. *J. Biol. Chem.* 276: 5629-5759.
2. Tordjman, K., et al. 2001. PPAR $\alpha$  deficiency reduces insulin resistance and atherosclerosis in apoE-null mice. *J. Clin. Invest.* 107: 1025-1034.
3. Wang, B., et al. 2001. Lipopolysaccharide results in a marked decrease in hepatocyte nuclear factor 4  $\alpha$  in rat liver. *Hepatology* 34: 979-989.
4. Bernal-Mizrachi, C., et al. 2003. Dexamethasone induction of hypertension and diabetes is PPAR $\alpha$  dependent in LDL receptor-null mice. *Nat. Med.* 9: 1069-1075.
5. Cammas, L., et al. 2006. Developmental regulation of prostacyclin synthase and prostacyclin receptors in the ovine uterus and conceptus during the peri-implantation period. *Reproduction* 131: 917-927.

### RESEARCH USE

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