

## TGR5 (H-90): sc-98888

### BACKGROUND

The G protein-coupled receptor TGR5 is a 330 amino acid protein that is almost universally expressed in human tissues including heart, skeletal muscle, spleen, kidney, liver, small intestine, placenta and leukocytes, but not in brain, colon (without mucosa), thymus or lung. TGR5 is sensitive to bile acids and responds through a significant mechanism that coordinates energy homeostasis. Bile acids activate mitogen-activated protein (MAP) kinase pathways, specifically induce TGR5 internalization, promote an increase of guanosine 5'-O-3-thio-triphosphate binding in membrane fractions, and cause rapid intracellular cAMP production. Bile acids also provoke TGR5 to suppress macrophage functions. TGR5-controlled signaling pathways may be good candidates for drug targets to treat common metabolic diseases, such as obesity, type II diabetes, hyperlipidemia and atherosclerosis.

### REFERENCES

1. Maruyama, T., et al. 2002. Identification of membrane-type receptor for bile acids (M-BAR). *Biochem. Biophys. Res. Commun.* 298: 714-719.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610147. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Kawamata, Y., et al. 2003. A G protein-coupled receptor responsive to bile acids. *J. Biol. Chem.* 278: 9435-9440.
4. Katsuma, S., et al. 2005. Bile acids promote glucagon-like peptide-1 secretion through TGR5 in a murine enteroendocrine cell line STC-1. *Biochem. Biophys. Res. Commun.* 329: 386-390.
5. Houten, S.M., et al. 2006. Endocrine functions of bile acids. *EMBO J.* 25: 1419-1425.
6. Watanabe, M., et al. 2006. Bile acids induce energy expenditure by promoting intracellular thyroid hormone activation. *Nature* 439: 484-489.

### CHROMOSOMAL LOCATION

Genetic locus: GPBAR1 (human) mapping to 2q35; Gpbar1 (mouse) mapping to 1 C3.

### SOURCE

TGR5 (H-90) is a rabbit polyclonal antibody raised against amino acids 241-330 mapping at the C-terminus of TGR5 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.

### 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.

### APPLICATIONS

TGR5 (H-90) is recommended for detection of TGR5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

TGR5 (H-90) is also recommended for detection of TGR5 in additional species, including canine.

Suitable for use as control antibody for TGR5 siRNA (h): sc-61678, TGR5 siRNA (m): sc-61679, TGR5 shRNA Plasmid (h): sc-61678-SH, TGR5 shRNA Plasmid (m): sc-61679-SH, TGR5 shRNA (h) Lentiviral Particles: sc-61678-V and TGR5 shRNA (m) Lentiviral Particles: sc-61679-V.

Molecular Weight of TGR5: 35.7 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### PROTOCOLS

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