SANTA CRUZ BIOTECHNOLOGY, INC.

PBR (H-13): sc-30920

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Mitochondrial peripheral-type benzodiazepine receptor (PBR) is an indispensable element of the steroidogenic machinery, where it mediates the delivery of cholesterol to the inner mitochondrial side chain cleavage cytochrome P-450 upon ligand activation. PBR is composed of three subunits, an isoquinoline binding site, a voltage-dependent anion channel and an adenine nucleotide carrier. PBR is genetically conserved from bacteria to humans and in humans is widely expressed in peripheral organs, whereas in the brain, it is sparse and located mainly in glial cells. Peroxisome proliferator perfluordecanoic acid (PFDA) inhibits the Leydig cell steroidogenesis by affecting PBR mRNA stability, thus inhibiting PBR expression, cholesterol transport into the mitochondria and sub-sequent steroid formation. A cytoplasmic protein, PRAX-1 (peripheral benzodiazepine receptor-associated protein 1), has been found to specifically interact with PBR. The polypeptide diazepam binding inhibitor is an endogenous PBR ligand. PBR also binds Ro 5-4864 (4'-chlorodiazepam) and PK 11185 (an isoquinoline carboxamide derivative), but not clonazepam, and PBR regulates the cholesterol transport that results in decreased circulating corticosterone levels.

REFERENCES

1. Weizman, R., et al. 1993. Molecular cellular and behavioral aspects of peripheral-type benzodiazepine receptors. Clin. Neuropharmacol. 16: 401-417.
2. Gavish, M. 1995. Hormonal regulation of peripheral-type benzodiazepine receptors. J. Steroid Biochem. Mol. Biol. 53: 57-59.
3. Amri, H., et al. 1997. *Ex vivo* regulation of adrenal cortical cell steroid and protein synthesis, in response to adrenocorticotropic hormone stimulation, by the Ginkgo Biloba extract EGb 761 and isolated ginkgolide B. Endocrinology 138: 5415-5426.
4. Papadopoulos, V., et al. 1997. Targeted disruption of the peripheral-type benzodiazepine receptor gene inhibits steroidogenesis in the R2C Leydig tumor cell line. J. Biol. Chem. 272: 32129-32135.
5. Papadopoulos, V., et al. 1998. *In vivo* studies on the role of the peripheral benzodiazepine receptor (PBR) in steroidogenesis. Endocr. Res. 24: 479-487.
6. Kelly-Hershkovitz, E., et al. 1998. Effects of peripheral-type benzodiazepine receptor antisense knockout on MA-10 Leydig cell proliferation and steroidogenesis. J. Biol. Chem. 273: 5478-5483.

CHROMOSOMAL LOCATION

Genetic locus: BZRP (human) mapping to 22q13.32; Bzrp (mouse) mapping to 15 E2.

SOURCE

PBR (H-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PBR 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.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-30920 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PBR (H-13) is recommended for detection of PBR 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).

Suitable for use as control antibody for PBR siRNA (h): sc-40821, PBR siRNA (m): sc-40822, PBR shRNA Plasmid (h): sc-40821-SH, PBR shRNA Plasmid (m): sc-40822-SH, PBR shRNA (h) Lentiviral Particles: sc-40821-V and PBR shRNA (m) Lentiviral Particles: sc-40822-V.

Molecular Weight of PBR: 18/32/30 kDa.

Positive Controls: human breast tumor tissue or Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Bouyer, G., et al. 2011. Erythrocyte peripheral type benzodiazepine receptor/voltage-dependent anion channels are upregulated by *Plasmodium falciparum*. Blood 118: 2305-2312.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.