SANTA CRUZ BIOTECHNOLOGY, INC.

PBR (W-12): sc-23418

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 subsequent steroid formation. A cytoplasmic protein, PRAX-1 (peripheral benzodiazepine receptor-associated protein 1), is 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.

CHROMOSOMAL LOCATION

Genetic locus: TSPO (human) mapping to 22q13.2; Tspo (mouse) mapping to 15 E1.

SOURCE

PBR (W-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PBR 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.

Blocking peptide available for competition studies, sc-23418 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

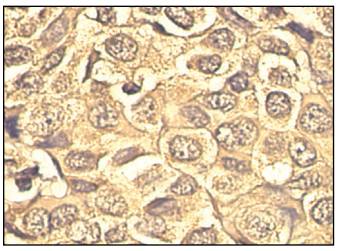
PBR (W-12) is recommended for detection of PBR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

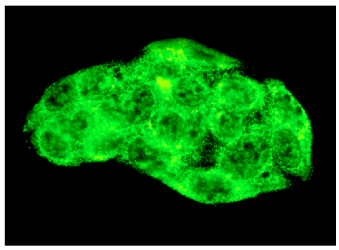
Molecular Weight of PBR: 18/32/30 kDa.

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

DATA



PBR (W-12): sc-23418. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tumor tissue showing cytoplasmic localization.



PBR (W-12): sc-23418. Immunofluorescence staining of methanol-fixed Hep G2 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Bisland, S.K., et al. 2007. Increased expression of mitochondrial benzodiazepine receptors following low-level light treatment facilitates enhanced protoporphyrin IX production in glioma-derived cells *in vitro*. Lasers Surg. Med. 39: 678-684.
2. Ji, B., et al. 2008. Imaging of peripheral benzodiazepine receptor expression as biomarkers of detrimental versus beneficial glial responses in mouse models of Alzheimer's and other CNS pathologies. J. Neurosci. 28: 12255-12267.
3. Visigalli, I., et al. 2009. Monitoring disease evolution and treatment response in lysosomal disorders by the peripheral benzodiazepine receptor ligand PK11195. Neurobiol. Dis. 34: 51-62.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **PBR (3D8-B2): sc-293216**, our highly recommended monoclonal alternative to PBR (W-12).