SANTA CRUZ BIOTECHNOLOGY, INC.

p-PR (1154): sc-57553

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The effects of progesterone are mediated by two functionally different isoforms of the progesterone receptor, PR-A and PR-B, which are transcribed from distinct, estrogen-inducible promoters within a single copy of the PR gene. The first 164 amino acids of PR-B are absent in PR-A. Progesterone-bound PR-A and PR-B have different transcription activation properties. Specifically, PR-B functions as a transcriptional activator in most cell and promoter contexts, while PR-A is transcriptionally inactive and functions as a strong ligand-dependent transdominant repressor of steroid hormone receptor transcriptional activity. An inhibitory domain (ID), which maps to the amino-terminus of the receptor, exists within both PR isoforms. Interestingly, the ID is functionally active only in PR-A and is necessary for steroid hormone transrepression by PR-A, suggesting that PR-A and PR-B may have different conformations in the cell. Phosphorylation of human PR occurs on at least nine serine residues. Phosphorylation of three of the residues (Ser 102, Ser 294 and Ser 345) is hormone-inducible; the others are basal but hormone-stimulated.

REFERENCES

1. Law, M.L., et al. 1987. The progesterone receptor gene maps to human chromosome band 11q13, the site of the mammary oncogene Int-2. Proc. Natl. Acad. Sci. USA 84: 2877-2881.
2. Kastner, P., et al. 1990. Two distinct estrogen-regulated promoters generate transcripts encoding the two functionally different human progesterone receptor forms A and B. EMBO J. 9: 1603-1614.
3. Wen, D.X., et al. 1994. The A and B isoforms of the human progesterone receptor operate through distinct signaling pathways within target cells. Mol. Cell. Biol. 14: 8356-8364.
4. Beck, C.A., et al. 1996. Stoichiometry and site-specific phosphorylation of human progesterone receptor in native target cells and in the baculovirus expression system. J. Biol. Chem. 271: 19546-19555.
5. Zhang, Y., et al. 1997. Phosphorylation of human progesterone receptor by cyclin-dependent kinase 2 on three sites that are authentic basal phosphorylation sites *in vivo*. Mol. Endocrinol. 11: 823-832.
6. Giangrande, P.H., et al. 1997. Mapping and characterization of the functional domains responsible for the differential activity of the A and B isoforms of the human progesterone receptor. J. Biol. Chem. 272: 32889-32900.
7. Giangrande, P.H., et al. 1999. The A and B isoforms of the human progesterone receptor: two functionally different transcription factors encoded by a single gene. Recent Prog. Horm. Res. 54: 291-313.
8. Giangrande, P.H., et al. 2000. The opposing transcriptional activities of the two isoforms of the human progesterone receptor are due to differential cofactor binding. Mol. Cell. Biol. 20: 3102-3115.

CHROMOSOMAL LOCATION

Genetic locus: PGR (human) mapping to 11q22.1

SOURCE

p-PR (1154) is a mouse monoclonal antibody raised against Ser phosphorylated synthetic peptide corresponding to amino acids 184-196 of PR of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 500 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-PR (1154) is recommended for detection of Ser 190 phosphorylated PR of 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for PR siRNA (h2): sc-270221, PR shRNA Plasmid (h2): sc-270221-SH and PR shRNA (h2) Lentiviral Particles: sc-270221-V.

Molecular Weight of p-PR-A: 81 kDa.

Molecular Weight of p-PR-B: 116 kDa.

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.

PROTOCOLS

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