**Product datasheet**

**Anti-Progesterone Receptor antibody [SP2] ab16661**

**Product name**  
Anti-Progesterone Receptor antibody [SP2]

**Description**  
Rabbit monoclonal [SP2] to Progesterone Receptor

**Host species**  
Rabbit

**Tested applications**  
Suitable for: ICC/IF, WB, IHC-P, Flow Cyt

**Species reactivity**  
Reacts with: Rat, Human  
Predicted to work with: Rabbit

**Immunogen**  
Recombinant fragment within Human Progesterone Receptor aa 400-550. The exact sequence is proprietary.  
Database link: P06401

**Positive control**  
Breast carcinomas

### Properties

**Form**  
Liquid

**Storage instructions**  

**Storage buffer**  
pH: 7.5  
Preservative: 0.1% Sodium azide  
Constituents: Tissue culture supernatant, Tris buffered saline, 1% BSA

**Purity**  
Tissue culture supernatant

**Clonality**  
Monoclonal

**Clone number**  
SP2

**Isotype**  
IgG

### Applications

Our Abpromise guarantee covers the use of ab16661 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
### Function
The steroid hormones and their receptors are involved in the regulation of eukaryotic gene expression and affect cellular proliferation and differentiation in target tissues. Progesterone receptor isoform B (PRB) is involved inactivation of c-SRC/MAPK signaling on hormone stimulation.

Isoform A: inactive in stimulating c-Src/MAPK signaling on hormone stimulation.

Isoform 4: Increases mitochondrial membrane potential and cellular respiration upon stimulation by progesterone.

### Sequence similarities
Belongs to the nuclear hormone receptor family. NR3 subfamily. Contains 1 nuclear receptor DNA-binding domain.

### Domain
Composed of three domains: a modulating N-terminal domain, a DNA-binding domain and a C-terminal ligand-binding domain.

### Post-translational modifications
Phosphorylated on multiple serine sites. Several of these sites are hormone-dependent.

Phosphorylation on Ser-294 occurs preferentially on isoform B, is highly hormone-dependent and modulates ubiquitination and sumoylation on Lys-388. Phosphorylation on Ser-102 and Ser-345 also requires induction by hormone. Basal phosphorylation on Ser-81, Ser-162, Ser-190 and Ser-400 is increased in response to progesterone and can be phosphorylated in vitro by the CDK2-A1 complex. Increased levels of phosphorylation on Ser-400 also in the presence of EGF, heregulin, IGF, PMA and FBS. Phosphorylation at this site by CDK2 is ligand-independent, and increases nuclear translocation and transcriptional activity. Phosphorylation at Ser-162 and Ser-294, but not at Ser-190, is impaired during the G(2)/M phase of the cell cycle. Phosphorylation on Ser-345 by ERK1/2 MAPK is required for interaction with SP1.

Sumoylation is hormone-dependent and represses transcriptional activity. Sumoylation on all three sites is enhanced by PIAS3. Desumoylated by SENP1. Sumoylation on Lys-388, the main site of sumoylation, is repressed by ubiquitination on the same site, and modulated by phosphorylation at Ser-294.

Ubiquitination is hormone-dependent and represses sumoylation on the same site. Promoted by MAPK-mediated phosphorylation on Ser-294.

Palmitoylated by ZDHHC7 and ZDHHC21. Palmitoylation is required for plasma membrane targeting and for rapid intracellular signaling via ERK and AKT kinases and cAMP generation.

### Cellular localization
Nucleus. Cytoplasm. Nucleoplasmic shuttling is both hormone- and cell cycle-dependent. On hormone stimulation, retained in the cytoplasm in the G(1) and G(2)/M phases; Mitochondrion outer membrane and Nucleus. Cytoplasm. Mainly nuclear.

### Notes
- ICC/IF: 1/100.
- IHC-P: 1/400. Staining of formalin-fixed tissues is required by boiling tissue sections in 10mM citrate buffer, pH 6.0 for 10 min followed by cooling at RT for 20 min.
- Flow Cyt: 1/100. 
  - **ab172730** - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
Immunocytochemistry/Immunofluorescence analysis of T-47D (human ductal breast epithelial tumor epithelial cell) cells labeling Progesterone Receptor with purified ab16661 at 1:100 (2.28 µg/ml). Cells were fixed in 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. Cells were counterstained with Ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1:200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1:1000 (2 µg/ml) dilution. DAPI nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.

Flow Cytometry analysis of T-47D (human ductal breast epithelial tumor epithelial cell) cells labeling Progesterone Receptor with purified ab16661 at 1:220 dilution (1.04 µg/ml) - Red. Cells were fixed with 4% paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1:2000 dilution. Isotype control - Rabbit monoclonal IgG (ab172730) - Black. Unlabeled control - Blue.
Immunohistochemistry analysis of human breast carcinoma tissue labelling SP2 with ab16661.

ab16661 staining rat ovary tissue sections by IHC-P. Sections were fixed in 10% buffered formalin and subjected to heat mediated antigen retrieval in 10mM citrate buffer pH 6.0 prior to blocking with 5% serum for 20 minutes at 20°C. The primary antibody was diluted 1/50 in TBS (with Tween) and incubated with the sample for 16 hours at 4°C. A HRP conjugated goat anti-rabbit was used as the secondary antibody.

Overlay histogram showing T47D cells stained with ab16661 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab16661, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

Please note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
• Response to your inquiry within 24 hours

• We provide support in Chinese, English, French, German, Japanese and Spanish

• Extensive multi-media technical resources to help you

• We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

Terms and conditions

• Guarantee only valid for products bought direct from Abcam or one of our authorized distributors