abcam

ab16661

Anti-Progesterone Receptor antibody [SP2]

Anti-Progesterone Receptor antibody [SP2] (ab16661) is a rabbit monoclonal antibody detecting Progesterone Receptor in **Flow Cytometry, IHC-P, ICC/IF, mIHC**. Suitable for **Human**.

- Multiplex IHC validated on the Leica BOND® MAX using Opal reagents
- Biophysical QC for unrivalled batch-batch consistency
- Over 40 publications
- Trusted since 2005

Recombinant | RabMAb | Advanced Validation | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.1% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP2
Purification technique	Affinity purification Protein A
Concentration	0.079 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

mIHC

Tested

Species	Human
Dilution info	1/6000
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/400
Notes	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.

Predicted

Species	Rat

Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information PGR

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. Depending on the isoform, progesterone receptor functions as a transcriptional activator or repressor. Isoform A. Ligand-dependent transdominant repressor of steroid hormone receptor transcriptional activity including repression of its isoform B, MR and ER. Transrepressional activity may involve recruitment of corepressor NCOR2. Isoform B. Transcriptional activator of several progesteron-dependent promoters in a variety of cell types. Involved in activation of SRC-dependent MAPK signaling on hormone stimulation. Isoform 4. Increases mitochondrial membrane potential and cellular respiration upon stimulation by progesterone.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

What is this antibody validated in?
Anti-Progesterone Receptor antibody [SP2] (ab16661) is a rabbit recombinant monoclonal antibody and is validated for use in Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), Multiplex IHC (mIHC) in Human samples.

Collaboration
Anti-Progesterone Receptor [SP2] (ab16661) is a clone from the portfolio of Spring Bioscience (Roche) SP clones which have been optimised for immunohistochemistry (IHC).

Trusted by the scientific community
Anti-Progesterone Receptor [SP2] (ab16661) was first used in a scientific publication in 2005 and has been cited over 40 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [SP2] also available for your convenience: ab16661, ab27596, Carrier free - ab239793, Alexa Fluor® 488 - ab267523, Alexa Fluor® 647 - ab267524

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The progesterone receptor (PR) also known as NR3C3 is a nuclear receptor that functions as a transcription factor in response to the hormone progesterone. This receptor has a mass of approximately 99 kDa and is expressed in tissues such as the reproductive organs including the uterus ovaries and mammary glands. It is also found in non-reproductive tissues like the brain and bone. The receptor has two main isoforms PR-A and PR-B which differ slightly in structure but have unique biological roles.
Biological function summary	The progesterone receptor plays a significant role in regulating gene expression related to reproductive processes. PR is not part of a larger complex by itself but interacts with various coactivators and corepressors to modulate transcription. In the uterus and mammary glands PR mediates the effects of progesterone by promoting cell proliferation and preparing tissues for pregnancy. In other systems PR also links to various metabolic and immunological pathways influencing cell cycle progression and immune response.
Pathways	Progesterone receptor activity is integrated within the reproductive hormone signaling pathways and the Wnt signaling pathway. The receptor interacts directly with key proteins such as estrogen receptor (ER) and steroid receptor coactivator (SRC) complexes which are pivotal in modulating response to hormonal signals. These interactions underline the essential role of PR in maintaining hormonal balance and regulating reproductive functions.
Associated diseases and disorders	The progesterone receptor associates with breast cancer and endometriosis. Aberrant expression or mutations in PR can contribute to the development and progression of breast cancer often linked with the estrogen receptor's influence. In endometriosis PR's altered functionality affects cellular response to progesterone contributing to tissue growth outside the uterus. These conditions also involve interactions with proteins like BRCA1 in breast cancer highlighting how PR connects to broader cellular and pathological networks.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

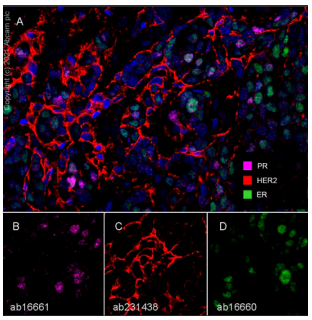
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

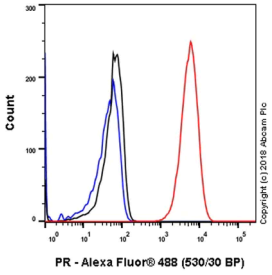
Full details and terms and conditions can be found here:
Terms & Conditions.

8 product images



Multiplex immunohistochemistry - Anti-Progesterone Receptor antibody [SP2] (ab16661)

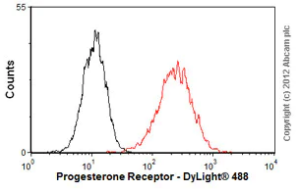
Multiplex immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human triple-positive breast carcinoma tissue sections labeling Progesterone Receptor (PR) with ab16661, at a 1/6000 dilution (0.2 µg/ml). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins and Opal Polymer HRP Ms + Rb was used as the secondary antibody. DAPI was used as the nuclear counterstain. Panel A: merged staining of anti-Progesterone Receptor (PR) (magenta; Opal™690), anti-HER2 (red; Opal™570) and anti-Estrogen Receptor (ER) (green; Opal™520) on human triple-positive breast carcinoma. Panel B: anti-PR stained on nucleus of cancer cells. Panel C: anti-HER2 stained on membrane of cancer cells. Panel D: anti-ER stained on nucleus of cancer cells. The section was incubated in three rounds of staining: in the order of ab16661 for 30 mins, then ab16660 and ab231438 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Flow Cytometry - Anti-Progesterone Receptor antibody [SP2] (ab16661)

Progesterone Receptor Flow Cytometry staining using rabbit Anti-Progesterone Receptor antibody

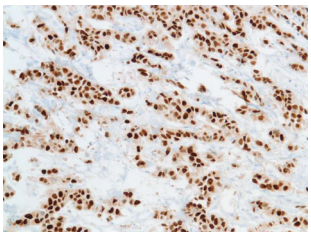
Flow Cytometry analysis of T-47D (human ductal breast epithelial tumor epithelial cell) cells labeling Progesterone Receptor with purified ab16661 at 1/220 dilution (1.04 µg/ml) - Red. Cells were fixed with 4% paraformaldehyde . A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was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



Flow Cytometry - Anti-Progesterone Receptor antibody [SP2] (ab16661)

Progesterone Receptor Flow Cytometry staining using rabbit Anti-Progesterone Receptor antibody

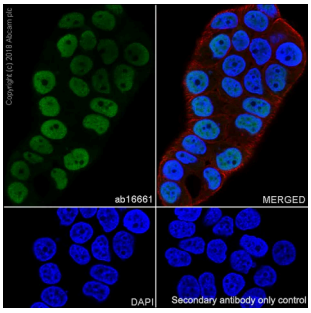
Overlay histogram showing T47D cells stained with ab16661 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions 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 >5000 events was performed.
This image was generated from the hybridoma version.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Progesterone Receptor antibody [SP2] (ab16661)

Progesterone Receptor Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Progesterone Receptor antibody

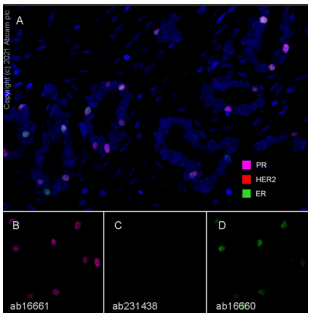
Immunohistochemistry analysis of human breast carcinoma tissue labelling SP2 with ab16661. This image was generated from the hybridoma version.



Immunocytochemistry/ Immunofluorescence - Anti-Progesterone Receptor antibody [SP2] (ab16661)

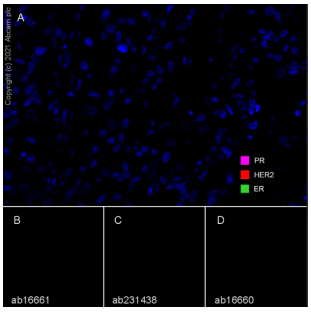
Progesterone Receptor Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Progesterone Receptor antibody

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.
This image was generated from the hybridoma version.



Multiplex immunohistochemistry - Anti-Progesterone Receptor antibody [SP2] (ab16661)

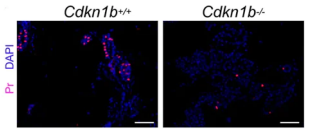
Multiplex immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human mammary gland tissue sections labeling Progesterone Receptor (PR) with ab16661, at a 1/6000 dilution (0.2 µg/ml). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins and Opal Polymer HRP Ms + Rb was used as the secondary antibody. DAPI was used as the nuclear counterstain. Panel A: merged staining of anti-Progesterone Receptor (PR) (magenta; Opal™690), anti-HER2 (red; Opal™570) and anti-Estrogen Receptor (ER) (green; Opal™520) on human mammary gland. Panel B: anti-PR stained on nucleus of some ductal cells. Panel C: anti-HER2 stained on no cells. Panel D: anti-ER stained on nucleus of some ductal cells. The section was incubated in three rounds of staining: in the order of ab16661 for 30 mins, then ab16660 and ab231438 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-Progesterone Receptor antibody [SP2] (ab16661)

Multiplex immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human triple-negative breast carcinoma tissue sections labeling Progesterone Receptor (PR) with ab16661, at a 1/6000 dilution (0.2 µg/ml). Heat mediated antigen retrieval with Citrate buffer (pH 6.0, epitope retrieval solution 1) for 20 mins and Opal Polymer HRP Ms + Rb was used as the secondary antibody. DAPI was used as the nuclear counterstain. Panel A: merged staining of anti-

Progesterone Receptor (PR) (magenta; Opal™690), anti-HER2 (red; Opal™570) and anti-Estrogen Receptor (ER) (green; Opal™520) on human triple-negative breast carcinoma. Panel B: anti-PR stained on no cells. Panel C: anti-HER2 stained on no cells. Panel D: anti-ER stained on no cells. The section was incubated in three rounds of staining: in the order of ab16661 for 30 mins, then ab16660 and ab231438 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Ding L, et al. (2019), PLOS Genetics, 15(3), e1008002. Fig 3D, DOI: 10.1371/journal.pgen.1008002. Reproduced under the Creative Commons licence. https://creativecommons.org/licenses/by/4.0/

Immunocytochemistry/ Immunofluorescence - Anti-Progesterone Receptor antibody [SP2] (ab16661)

Progesterone Receptor Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Progesterone Receptor antibody

Rat mammary epithelial cells stained for Pr (pink) using ab16661 at 1/100 dilution in ICC/IF.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.