abcam

ab187291

Anti-Estrogen Receptor beta 1 antibody [ERb455] - C-terminal

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: PBS, 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human ESR2. The exact immunogen used to generate this antibody is proprietary information. Database link Q92731
Clone number	ERb455
Purification technique	Affinity purification Protein A
Specificity	Estrogen receptors (ER) are members of the steroid/thyroid hormone receptor superfamily of ligand-activated transcription factors. Estrogen receptors, including ER-alpha and ER-beta, contain DNA binding and ligand binding domains and are critically involved in regulating the normal function of reproductive tissues. They are located in the nucleus, though some estrogen receptors associate with the cell surface membrane and can be rapidly activated by exposure of cells to estrogen. ER-alpha and ER-beta are differentially activated by various ligands. Receptor-ligand interactions trigger a cascade of events, including dissociation from heat shock proteins, receptor dimerization, phosphorylation and the association of the hormone activated receptor with specific regulatory elements in target genes. Evidence suggests that ER-alpha and ER-beta may be regulated by distinct mechanisms even though they share many functional characteristics.
Concentration	0.2 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	ab187291 was purified from Bioreactor concentrate.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1-2 μg for 10^6 Cells
Notes	-

Predicted

Species	Monkey, Rat, Pig, Sheep, Horse, Mouse
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human, Monkey, Rat, Pig, Sheep, Horse, Mouse
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1-2 μg/mL
Notes	-

Predicted

Species	Monkey, Rat, Pig, Sheep, Horse, Mouse

Dilution info	-
Notes	-

Target data

See full target information ESR2

Function	Nuclear hormone receptor. Binds estrogens with an affinity similar to that of ESR1/ER-alpha, and activates expression of reporter genes containing estrogen response elements (ERE) in an estrogen-dependent manner (PubMed:20074560). Isoform 2. Lacks ligand binding ability and has no or only very low ERE binding activity resulting in the loss of ligand-dependent transactivation ability.

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	The estrogen receptor beta 1 also known as ERβ or NR3A2 is a type of nuclear hormone receptor. It plays a role in modulating gene expression in response to estrogens. ERβ has an approximate mass of 59 kDa and is expressed in a variety of tissues including the ovary prostate and brain. It differs from estrogen receptor alpha (ERα) in terms of distribution and function within the body.
Biological function summary	Estrogen receptor beta 1 functions as a transcription factor modulating various gene expressions in response to estrogen binding. It forms a complex with coactivators or corepressors to regulate its activity. ERβ is known for balancing the proliferative effects that ERα often promotes thereby maintaining cellular homeostasis in various tissues. It contributes to processes like bone density maintenance lipid metabolism and neural differentiation.

Pathways	The activity of estrogen receptor beta 1 is integrated into the estrogen signaling pathway. It interacts with proteins such as ERα and other nuclear receptors to mediate hormonal responses. This receptor is also part of the MAPK pathway which is important for cell proliferation and differentiation. The balance between ERβ and ERα signaling pathways is key for cellular response to estrogens influencing various physiological outcomes.
Associated diseases and disorders	Estrogen receptor beta 1 has associations with conditions such as breast cancer and osteoporosis. A decreased ratio of ERβ to ERα often links to more aggressive forms of breast cancer where ERβ acts as a counterbalance to the proliferative signals of ERα. In osteoporosis ERβ's role in bone density can impact disease progression especially when estrogen levels fluctuate post-menopause. Understanding the balance between ERβ and ERα in these diseases could be useful in developing targeted ERβ activators or inhibitors as therapeutic strategies.

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

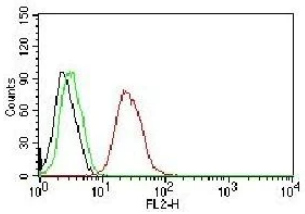
We do not recommend this combination. It is not covered by our product promise.

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.

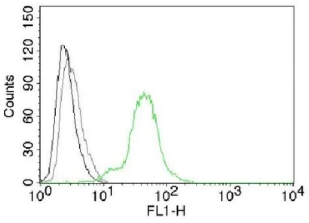
3 product images



Flow Cytometry - Anti-Estrogen Receptor beta 1 antibody [ERb455] - C-terminal (ab187291)

Estrogen Receptor beta 1 Flow Cytometry staining using mouse Anti-Estrogen Receptor beta 1 antibody

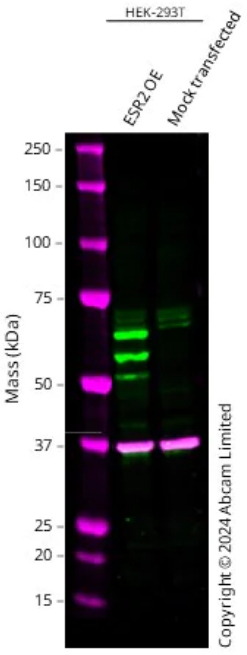
Flow cytometry analysis of MCF-7 (human breast adenocarcinoma cell line) cells labelling ER beta with ab187291 at 0.5 ug/ml. Black-cells alone, Green-isotype control, Red-PE labeled ER-beta 1.



Flow Cytometry - Anti-Estrogen Receptor beta 1 antibody [ERb455] - C-terminal (ab187291)

Estrogen Receptor beta 1 Flow Cytometry staining using mouse Anti-Estrogen Receptor beta 1 antibody

Flow cytometry analysis of BT474 (human ductal breast epithelial tumor cell line) cells labelling ER beta with ab187291 at 0.5 ug/ml. Black-cells alone, Grey-isotype control,Green-AF4888-labeled ER beta 1.



Western blot - Anti-Estrogen Receptor beta 1 antibody [ERb455] - C-terminal (ab187291)

Western blot: Anti-ESR2 antibody [ERb455] (ab187291) staining at 1 ug/ml, shown in green; Rabbit Anti-GAPDH antibody [EPR16891] (ab181602) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab187291 was shown to bind specifically to ESR2. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Mouse IgG H&L 800CW and Goat anti-Rabbit IgG H&L 680RD at 1/20000 dilution. We were not able to detect the endogenous ESR2 due to low target expression and sensitivity limit of the antibody. Further optimization might be needed for detecting endogenous ESR2.
All lanes:
Western blot - Anti-Estrogen Receptor beta 1 antibody [ERb455] - C-terminal (ab187291) at 1 µg/mL

Lane 1:
HEK-293T overexpressing ERS2-myc-His tag cell lysate at 20 µg

Lane 2:
WT HEK293T Mock transfection cell lysate at 20 µg

Secondary

All lanes:
Goat anti-Mouse IgG H&L 800CW and Goat anti-Rabbit IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 60 kDa

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