abcam

ab239879

Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR46Y
Purification technique	Affinity purification Protein A
Concentration	1.045 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information ESRRA

Function	Binds to an ERR-alpha response element (ERRE) containing a single consensus half-site, 5'-TNAAGGTCA-3'. Can bind to the medium-chain acyl coenzyme A dehydrogenase (MCAD) response element NRRE-1 and may act as an important regulator of MCAD promoter. Binds to the C1 region of the lactoferrin gene

promoter. Requires dimerization and the coactivator, PGC-1A, for full activity. The ERRalpha/PGC1alpha complex is a regulator of energy metabolism. Induces the expression of PERM1 in the skeletal muscle.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab239879 is the carrier-free version of ab76228.

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.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Estrogen Related Receptor Alpha (ERRα) also known as NR3B1 is an orphan nuclear receptor with a molecular mass of approximately 51 kDa. It acts as a transcription factor and influences the expression of genes involved in energy metabolism. ERRα is expressed in numerous tissues such as the liver heart kidney and skeletal muscles. It binds to DNA as a monomer and alters specific gene expression activities. This protein lacks an identified ligand which classifies it as an orphan receptor but it shares structural similarities with estrogen receptors allowing the regulation of gene transcription in several physiological contexts.
Biological function summary	Estrogen Related Receptor Alpha regulates cellular energy production processes including mitochondrial biogenesis and oxidative phosphorylation. It plays a role in the biological function of energy homeostasis and increases the expression of genes related to metabolic processes. ERRα operates as part of a transcriptional regulatory network and interacts with other nuclear receptors and coactivators to modulate its activity. It often forms complexes with coactivators such as peroxisome proliferator-activated receptor gamma coactivator 1-alpha (PGC-1α) to exert its effects on mitochondrial function.
Pathways	ERRα is integral to the PGC-1α signaling pathway and the AMPK (AMP-activated protein kinase) signaling pathway. These pathways are important in regulating energy metabolism and adaptive thermogenesis. ERRα interacts with PGC-1α to enhance mitochondrial function and energy expenditure while AMPK activation affects ERRα transcriptional activity and facilitates cellular energy balance. Additionally ERRα cross-talks with other nuclear receptors like PPAR (peroxisome proliferator-activated receptor) family members which are involved in lipid metabolism and glucose homeostasis.
Associated diseases and disorders	ERRα has implications in metabolic conditions such as diabetes and obesity. The protein links to diabetes through its role in mitochondrial dysfunction and insulin resistance. Obesity-related studies point out how ERRα affects adaptive thermogenesis and lipid metabolism contributing to energy imbalance. ERRα-PPAR interactions highlight its association in metabolic disorders influencing various aspects of metabolism and disease progression. Understanding ERRα function offers therapeutic potential for targeting metabolic diseases.

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

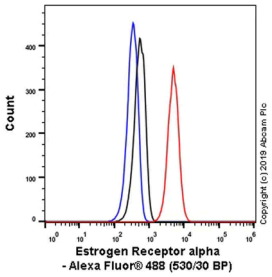
We do not recommend this combination. It is not covered by our product promise.

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.

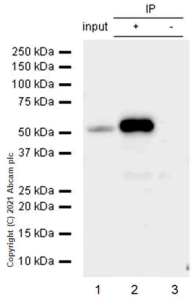
6 product images



Flow Cytometry - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

Estrogen Related Receptor alpha Flow Cytometry staining using rabbit Anti-Estrogen Related Receptor alpha antibody

This data was developed using ab76228 the same antibody clone in a different buffer formulation. Flow cytometric analysis of 4% Paraformaldehyde fixed 90% Methanol permeabilized HeLa (Human cervix adenocarcinoma epithelial cell) cells labelling Estrogen Receptor alpha with ab76228 at 1/20 dilution (10 µg/ml) compared with a Rabbit monoclonal IgG (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 was used as the secondary antibody.

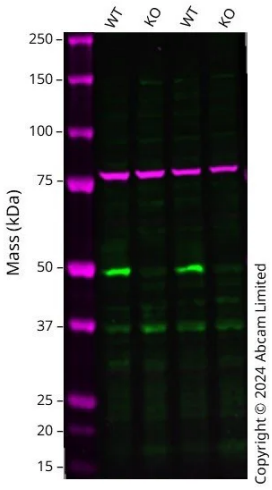


Immunoprecipitation - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

ab76228 used at 1:20 dilution (2µg) immunoprecipitating Estrogen Related Receptor alpha in Hela whole cell lysates.
Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate 10µg.
Lane 2 (+): HeLa whole cell lysate.
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab190685 in HeLa whole cell lysate.
For western blotting, ab227648 and VeriBlot for IP Detection Reagent (HRP)(ab131366) at 1/1000 dilution were used.

All lanes:
Immunoprecipitation - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] (ab76228)

Predicted band size: 46 kDa



Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

Estrogen Related Receptor alpha Western blot staining using rabbit Anti-Estrogen Related Receptor alpha antibody

This data was developed using ab76228, the same antibody clone in a different buffer formulation.

Western blot: Anti-ESRRA antibody [EPR46Y] (ab76228) staining at 1/2000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in magenta. In Western blot, ab76228 was shown to bind specifically to ESRRA. A band was observed at 46 kDa in wild-type MCF7 cell lysates with no signal observed at this size in ESRRA knockout cell line. To generate this image, wild-type and ESRRA knockout MCF7 cell lysates were analysed. 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-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] (ab76228) at 1/2000 dilution

Lane 1:
Wild-type MCF7 cell lysate at 20 µg

Lane 2:
ESRRA knockout MCF7 cell lysate at 20 µg

Lane 3:
Wild-type HAP1 cell lysate at 20 µg

Lane 4:
ESRRA knockout HAP1 cell lysate at 20 µg

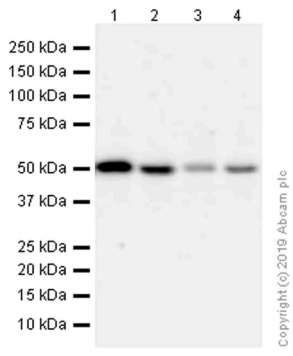
Secondary

Lanes 1 - 4:
Goat anti-Rabbit IgG H&L 800CW at 1/20000 dilution

Lanes 1 - 4:
Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 46 kDa



Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

Estrogen Related Receptor alpha Western blot staining using rabbit Anti-Estrogen Related Receptor alpha antibody

This data was developed using ab76228 the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] (ab76228) at 1/1000 dilution

Lane 1:

MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 2:
Mouse brain lysate at 20 µg

Lane 3:
Mouse kidney lysate at 20 µg

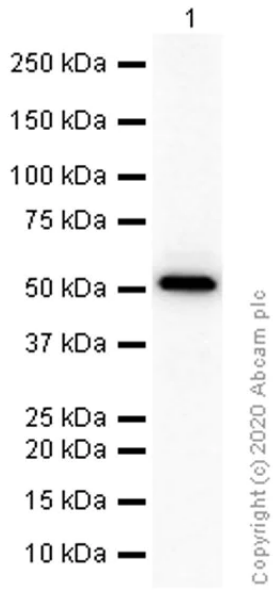
Lane 4:
Rat brain lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 46 kDa

Observed band size: 55 kDa



Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

Estrogen Related Receptor alpha Western blot staining of HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate using rabbit Anti-Estrogen Related Receptor alpha antibody

This data was developed using ab76228 the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] (ab76228) at 1/1000 dilution

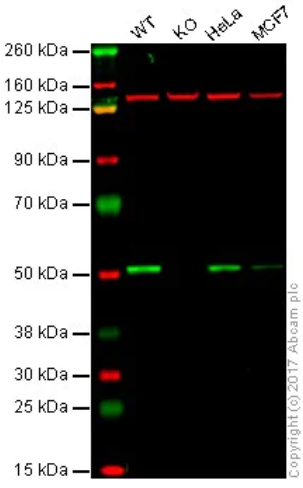
All lanes:
HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate at 15 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 46 kDa

Observed band size: 55 kDa



Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

Estrogen Related Receptor alpha Western blot staining using rabbit Anti-Estrogen Related Receptor alpha antibody

This data was developed using ab76228 the same antibody clone in a different buffer formulation.
Lane 1: Wild-type HAP1 whole cell lysate (20 µg)
Lane 2: Estrogen Related Receptor alpha knockout HAP1 whole cell lysate (20 µg)
Lane 3: HeLa whole cell lysate (20 µg)
Lane 4: MCF7 whole cell lysate (20 µg)

Lanes 1 - 4: Merged signal (red and green). Green - ab76228 observed at 55 kDa. Red - loading control, ab18058, observed at 130 kDa.

ab76228 was shown to specifically react with Estrogen Related Receptor alpha in wild-type HAP1 cells as signal was lost in Estrogen Related Receptor alpha knockout cells. Wild-type and Estrogen Related Receptor alpha knockout samples were subjected to SDS-PAGE. ab76228 and ab18058 (Mouse anti-Vinculin loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.
All lanes:
Western blot - Anti-Estrogen Related Receptor alpha antibody [EPR46Y] - BSA and Azide free (ab239879)

Predicted band size: 46 kDa

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