abcam

ab240944

Anti-FBP1 antibody [EPR4620] - BSA and Azide free

Recombinant | RabMAb

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	EPR4620
Purification technique	Affinity purification Protein A
Concentration	1.038 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Expected

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

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information FBP1

Function	Catalyzes the hydrolysis of fructose 1,6-bisphosphate to fructose 6-phosphate in the presence of divalent cations, acting as a rate-limiting enzyme in gluconeogenesis. Plays a role in regulating glucose sensing and insulin secretion of pancreatic beta-cells. Appears to modulate glycerol gluconeogenesis in liver. Important regulator of appetite and adiposity; increased expression of the protein in liver after nutrient excess increases circulating satiety hormones and reduces appetite-stimulating neuropeptides and thus seems to provide a feedback mechanism to limit weight gain.

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

ab240944 is the carrier-free version of ab109732.

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	FBP1 also known as fructose-16-bisphosphatase 1 is an enzyme with a molecular mass of approximately 37 kDa. It plays a mechanical role in catalyzing the conversion of fructose-16-bisphosphate to fructose 6-phosphate in the gluconeogenesis pathway. This enzyme expresses primarily in the liver but also in kidneys and muscles reflecting its key role in glucose metabolism.
Biological function summary	The function of FBP1 involves maintaining glucose homeostasis which is essential for energy balance. FBP1 is part of the gluconeogenesis pathway a process that synthesizes glucose from non-carbohydrate sources. This enzyme acts independently and does not usually form part of larger protein complexes but its activity significantly impacts liver metabolism and energy production in low-glucose conditions.
Pathways	FBP1 finds its primary involvement in the gluconeogenesis pathway. This roles complements those of other enzymes such as phosphoenolpyruvate carboxykinase (PEPCK) and glucose-6-phosphatase which also contribute to glucose synthesis. FBP1's activity supports glucose production providing glucose for bloodstream circulation when dietary intake is low.
Associated diseases and disorders	FBP1's function directly relates to conditions such as fructose 16-bisphosphatase deficiency and has implications in type 2 diabetes. Deficient FBP1 can lead to life-threatening hypoglycemia demonstrating the need for energy regulation by this enzyme. Its regulation intersects with insulin signaling pathways with proteins like insulin receptor substrate (IRS) playing roles in modulating its activity in metabolic disorders.

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

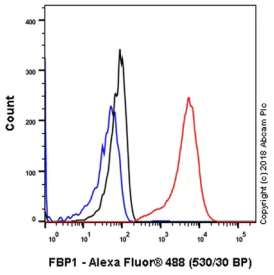
We do not recommend this combination. It is not covered by our product promise.

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.

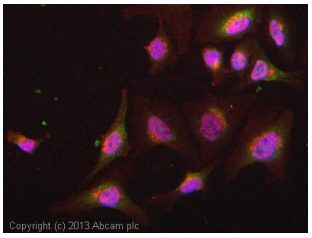
4 product images



Flow Cytometry (Intracellular) - Anti-FBP1 antibody [EPR4620] - BSA and Azide free (ab240944)

FBP1 Flow Cytometry (Intracellular) staining using rabbit Anti-FBP1 antibody

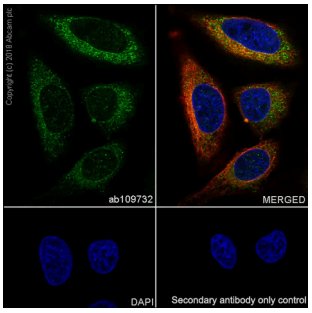
Intracellular Flow Cytometry analysis of MCF7 (Human breast adenocarcinoma epithelial cell) cells labeling FBP1 with purified ab109732 at 1/400 dilution (1 µg/ml) (red). Cells were fixed with 4% Paraformaldehyde. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-FBP1 antibody [EPR4620] - BSA and Azide free (ab240944)

FBP1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FBP1 antibody

ICC/IF image of ab109732 stained HeLa cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab109732, 10µg/ml) overnight at +4°C. The secondary antibody (green) was ab96899, DyLight® 488 goat anti-rabbit IgG (H+L) used at a 1/250 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109732).



Immunocytochemistry/ Immunofluorescence - Anti-FBP1 antibody [EPR4620] - BSA and Azide free (ab240944)

FBP1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-FBP1 antibody

Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling FBP1 with purified ab109732 at 1:50 dilution (7.9 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-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.



Western blot - Anti-FBP1 antibody [EPR4620] - BSA and Azide free (ab240944)

Blocking buffer and concentration: 5% NFDM/TBST. **Diluting buffer and concentration:** 5% NFDM/TBST. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab109732).
All lanes:
Western blot - Anti-FBP1 antibody [EPR4620] (ab109732) at 1/1000 dilution

Lane 1:
DDDK-tagged FBP1 human full-length recombinant protein at 15 ng

Lane 2:
DDDK-tagged FBP2 human full-length recombinant protein at 15 ng

Secondary

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

Predicted band size: 37 kDa

Observed band size: 37 kDa

Exposure time: 5s

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