abcam

ab283333

Anti-fetal hemoglobin antibody [EPR23381-254] - 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	EPR23381-254
Purification technique	Affinity purification Protein A
Concentration	1.035 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	-

Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information Hemoglobin subunit gamma-2

Function	Gamma chains make up the fetal hemoglobin F, in combination with alpha chains.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C

Notes

ab283333 is the carrier-free version of ab283313.

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	Fetal hemoglobin also known as fetal Hb or HbF is a form of hemoglobin found in fetuses and neonates. HbF is composed of two alpha and two gamma globin chains and its molecular weight is around 64000 Daltons. This hemoglobin variant is mainly expressed in the red blood cells of the fetal liver and bone marrow. Expression of fetal hemoglobin typically declines after birth when beta globin chains replace gamma chains to form adult hemoglobin (HbA). However low levels of fetal hemoglobin can persist into adulthood in some individuals.
Biological function summary	Fetal hemoglobin has a higher affinity for oxygen compared to adult hemoglobin. This characteristic allows efficient transfer of oxygen from maternal to fetal circulation which is vital for fetal development. Fetal hemoglobin is not part of any complex but its unique structure is adapted to its function in the fetal environment. The alpha and gamma globin chains together modulate its oxygen-binding properties ensuring proper oxygenation during fetal life.
Pathways	The production and transition of fetal hemoglobin are linked to the globin gene switching pathway. This process involves the silencing of gamma globin genes and activation of beta globin genes postnatally a transition integral to producing adult hemoglobin. BCL11A and KLF1 are transcription factors that play essential roles in regulating this gene switching. Both proteins influence the repression of gamma globin genes therefore promoting the expression of beta globin.

Associated diseases and disorders	Fetal hemoglobin is significant in conditions like sickle cell disease and beta thalassemia. In these disorders elevated levels of fetal hemoglobin can ameliorate symptoms by compensating for defective adult hemoglobin. Patients with higher fetal hemoglobin levels typically exhibit milder forms of these diseases. Therapeutic approaches aim to reactivate fetal hemoglobin expression through the modulation of proteins like BCL11A KLF1 and others involved in hemoglobin switching.

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

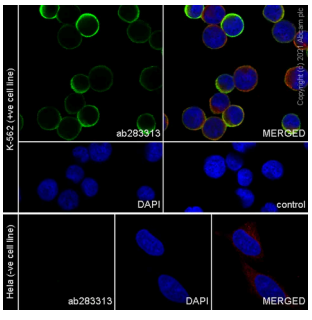
We do not recommend this combination. It is not covered by our product promise.

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.

5 product images



Immunocytochemistry/ Immunofluorescence - Anti-fetal hemoglobin antibody [EPR23381-254] - BSA and Azide free (ab283333)

Fetal hemoglobin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-fetal hemoglobin antibody

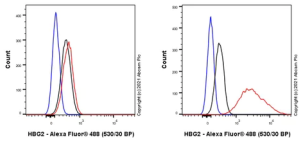
This data was developed using ab283313, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized K-562 cells labelling fetal hemoglobin with ab283313 at 1/50 (10.92 ug/ml) dilution, followed by ab150081

Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green). Confocal image showing cytoplasmic staining in K-562 cells and no staining in HeLa cells.

Negative control: HeLa (PMID: 17910885) is observed.

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2ug/ml dilution.

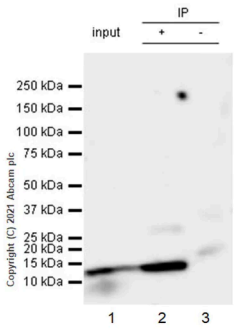


Flow Cytometry (Intracellular) - Anti-fetal hemoglobin antibody [EPR23381-254] - BSA and Azide free (ab283333)

Fetal hemoglobin Flow Cytometry (Intracellular) staining using rabbit Anti-fetal hemoglobin antibody

This data was developed using ab283313, 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, Left) / K-562 (Human chronic myelogenous leukemia lymphoblast, Right) cells labelling fetal hemoglobin with ab283313 at 1/500 dilution (0.1ug) (Red) compared with a Rabbit monoclonal IgG (ab172730) (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 dilution was used as the secondary antibody.

Negative control: HeLa (PMID: 17910885).



Immunoprecipitation - Anti-fetal hemoglobin antibody [EPR23381-254] - BSA and Azide free (ab283333)

This data was developed using ab283313, the same antibody clone in a different buffer formulation.
fetal hemoglobin was immunoprecipitated from 0.35 mg K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate 10 ug with ab283313 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab283313 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate 10 ug

Lane 2: ab283313 IP in K-562 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab283313 in K-562 whole cell lysate

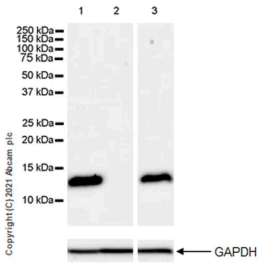
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 32 seconds

All lanes:
Immunoprecipitation - Anti-fetal hemoglobin antibody [EPR23381-254] (ab283313)

Predicted band size: 16 kDa

Observed band size: 14 kDa



Western blot - Anti-fetal hemoglobin antibody [EPR23381-254] - BSA and Azide free (ab283333)

Fetal hemoglobin Western blot staining using rabbit Anti-fetal hemoglobin antibody

This data was developed using ab283313, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST

Negative control: HeLa (PMID: 17910885).

Extra bands around 40 kDa and 150 kDa can be observed in some adult tissue lysates.

Exposure time: 59 seconds

All lanes:
Western blot - Anti-fetal hemoglobin antibody [EPR23381-254] (ab283313) at 1/1000 dilution

Lane 1:
K-562 (human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

Lane 2:
HeLa (human cervix adenocarcinoma epithelial cell) whole cell lysate at 20 µg

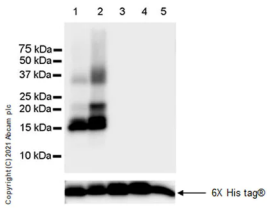
Lane 3:
HEL (human erythroleukemia erythroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) at 1/20000 dilution

Predicted band size: 16 kDa

Observed band size: 14 kDa



Western blot - Anti-fetal hemoglobin antibody [EPR23381-254] - BSA and Azide free (ab283333)

This data was developed using ab283313, the same antibody clone in a different buffer formulation.
Blocking and diluting buffer and concentration: 5% NFDM/TBST

Exposure time: 3 seconds

These rec proteins were made in house.
Samples loaded are extracts of E.coli expressing
HBG2, HBG1, HBE1, HBB or HBD.

All lanes:
Western blot - Anti-fetal hemoglobin antibody [EPR23381-254] (ab283313) at 1/1000 dilution

Lane 1:
His-tagged human HBG2 recombinant protein (aa2-147) at 0.01 µg

Lane 2:
His-tagged human HBG1 recombinant protein (aa2-147) at 0.01 µg

Lane 3:
His-tagged human HBE1 recombinant protein (aa3-147) at 0.01 µg

Lane 4:
His-tagged human HBB recombinant protein (aa3-147) at 0.01 µg

Lane 5:
His-tagged human HBD recombinant protein (aa3-147) at 0.01 µg

Secondary

Lanes 1 - 5:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Lanes 1 - 5:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/20000 dilution

Predicted band size: 16 kDa

Observed band size: 15 kDa

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