abcam

ab214821

Anti-BMP2 antibody [EPR20807]

Anti-BMP2 antibody [EPR20807] (ab214821) is a rabbit monoclonal antibody detecting BMP2 in **Western Blot, Flow Cytometry (Intra), ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 40 publications

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR20807
Purification technique	Affinity purification Protein A
Concentration	0.733 - 0.735 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse

Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/700
Notes	-

Expected

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

Target data

See full target information BMP2

Function	Growth factor of the TGF-beta superfamily that plays essential roles in many developmental processes, including cardiogenesis, neurogenesis, and osteogenesis (PubMed:18436533, PubMed:24362451, PubMed:31019025). Induces cartilage and bone formation (PubMed:3201241). Initiates the canonical BMP signaling cascade by associating with type I receptor BMPR1A and type II receptor BMPR2 (PubMed:15064755, PubMed:17295905, PubMed:18436533). Once all three components are bound together in a complex at the cell surface, BMPR2 phosphorylates and activates BMPR1A (PubMed:7791754). In turn, BMPR1A propagates signal by phosphorylating SMAD1/5/8 that travel to the nucleus and act as activators and repressors of transcription of target genes. Also acts to promote expression of HAMP, via the interaction with its receptor BMPR1A/ALK3 (PubMed:31800957). Can also signal through non-canonical pathways such as ERK/MAP kinase signaling cascade that regulates osteoblast differentiation (PubMed:16771708, PubMed:20851880). Also stimulates the differentiation of myoblasts into osteoblasts via the EIF2AK3-EIF2A-ATF4 pathway by stimulating EIF2A phosphorylation which leads to increased expression of ATF4 which plays a central role in osteoblast differentiation (PubMed:24362451). Acts as a positive regulator of odontoblast differentiation during mesenchymal tooth germ formation, expression is repressed during the bell stage by MSX1-mediated inhibition of CTNNB1 signaling (By similarity).

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

Notes

What is this antibody validated in?
Anti-BMP2 antibody [EPR20807] (ab214821) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of BMP2?
Anti-BMP2 [EPR20807] (ab214821) specifically detects a band for BMP2 (UniProt: P12643) at a molecular weight of 44kDa.

Trusted by the scientific community
Anti-BMP2 [EPR20807] (ab214821) was first used in a scientific publication in 2017 and has been cited over 40 times in peer-reviewed journals.

Other related products
We have a range of other formats of antibody clone [EPR20807] also available for your convenience: ab214821, Carrier free - ab225898

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.

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.

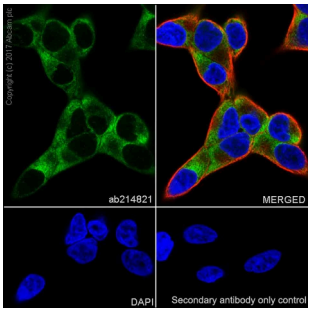
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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6 product images

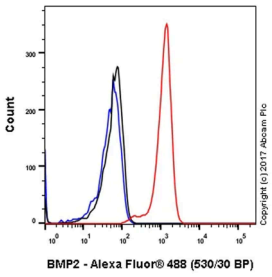


Immunocytochemistry/ Immunofluorescence - Anti-BMP2 antibody [EPR20807] (ab214821)

BMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-BMP2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized LNCaP (human prostate cancer cell line) cells labeling BMP2 with ab214821 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on LNCaP cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

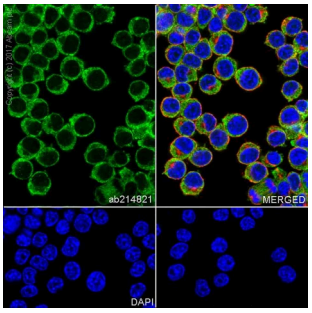
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-BMP2 antibody [EPR20807] (ab214821)

BMP2 Flow Cytometry (Intracellular) staining using rabbit Anti-BMP2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol-permeabilized RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) cell line labeling BMP2 with ab214821 at 1/700 dilution (red) compared with an Isotype controlRabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black)and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.

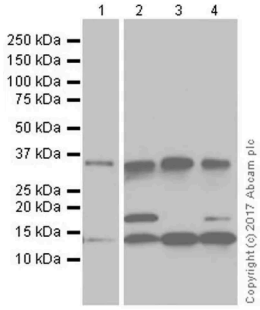


Immunocytochemistry/ Immunofluorescence - Anti-BMP2 antibody [EPR20807] (ab214821)

BMP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-BMP2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) cells labeling BMP2 with ab214821 at 1/100 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on RAW 264.7 cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



Western blot - Anti-BMP2 antibody [EPR20807] (ab214821)

BMP2 Western blot staining using rabbit Anti-BMP2 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
Exposure times: Lane 1: 3 minutes; Lanes 2-4: 15 seconds.

The molecular weight observed is consistent with literature. Bands observed at 14KD are monomers (PMID: 12819188, PMID: 3200834). Bands observed at 18KD are glycosylated monomers (PMID: 12819188, PMID: 8117284, PMID: 16261447, PMID: 3200834). Bands observed at ~30KD are dimers or glycosylated dimers) (PMID: 22508088, PMID: 16261447, PMID: 3200834).

All lanes:
Western blot - Anti-BMP2 antibody [EPR20807] (ab214821) at 1/1000 dilution

Lane 1:
Caco-2 (human colorectal adenocarcinoma cell line) whole cell lysate at 10 µg

Lane 2:
Saos-2 (human osteosarcoma cell line) whole cell lysate at 10 µg

Lane 3:
C2C12 (mouse myoblast cell line) whole cell lysate at 10 µg

Lane 4:
RAW264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 10 µg

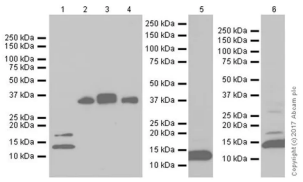
Secondary

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

Developed using the ECL technique.

Predicted band size: 44 kDa

Observed band size: 14 kDa, 18 kDa, 30 kDa



Western blot - Anti-BMP2 antibody [EPR20807] (ab214821)

Blocking and dilution buffer: 5% NFDM/TBST.
Exposure times: Lanes 1-4: 3 minutes; Lane 5: 30 seconds; Lane 6: 5 seconds.

The molecular weight observed is consistent with literature. Bands observed at 14KD are monomers (PMID: 12819188, PMID: 3200834). Bands observed at 18KD are glycosylated monomers (PMID: 12819188, PMID: 8117284, PMID: 16261447, PMID: 3200834). Bands observed at ~30KD are dimers or glycosylated dimers) (PMID: 22508088, PMID: 16261447, PMID: 3200834).

All lanes:
Western blot - Anti-BMP2 antibody [EPR20807] (ab214821) at 1/1000 dilution

Lane 1:
LNCaP (human prostate cancer cell line) whole cell lysate at 20 µg

Lane 2:
Mouse cartilage tissue lysate at 20 µg

Lane 3:
Human lung cancer tissue lysate at 20 µg

Lane 4:
Human fetal kidney tissue lysate at 20 µg

Lane 5:
Rat spleen tissue lysate at 10 µg

Lane 6:
C6 (rat glial tumor cell line) whole cell lysate at 10 µg

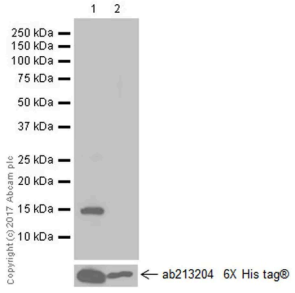
Secondary

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

Developed using the ECL technique.

Predicted band size: 44 kDa

Observed band size: 14 kDa, 18 kDa, 30 kDa



Western blot - Anti-BMP2 antibody [EPR20807] (ab214821)

Blocking and dilution buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-BMP2 antibody [EPR20807] (ab214821) at 1/1000 dilution

Lane 1:
His-tagged human BMP2 (aa283-395) recombinant protein at 0.02 µg

Lane 2:
His-tagged human BMP4 (aa293-408) recombinant protein at 0.02 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 44 kDa

Observed band size: 15 kDa

Exposure time: 1s

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