

## Product datasheet

### Anti-TGF beta 1 antibody [EPR21143] ab215715

KO VALIDATED

Recombinant

RabMAb

★★★★★ [6 Abreviews](#) [134 References](#) [10 Images](#)

#### Overview

|                            |   |
|----------------------------|---|
| <b>Product name</b>        | Anti-TGF beta 1 antibody [EPR21143]   |
| <b>Description</b>         | Rabbit monoclonal [EPR21143] to TGF beta 1  |
| <b>Host species</b>        | Rabbit  |
| <b>Specificity</b>         | For testing samples with low expression level of TGF beta 1, we recommend <a href="#">ab179695</a> which could give stronger signal. Loading larger amount of lysate or lower antibody dilution would also help.  |
| <b>Tested applications</b> | <b>Suitable for:</b> WB, IHC-P  |
| <b>Species reactivity</b>  | <b>Reacts with:</b> Mouse, Rat, Human   |
| <b>Immunogen</b>           | Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.  |
| <b>Positive control</b>    | WB: NIH/3T3, L-929, HeLa, A549, HL-60, RAW 264.7, Wild-type A549, K562 and SH-SY5Y whole cell lysates; Mouse and Rat spleen lysate; Mouse heart tissue lysate; C6 cell lysate. IHC-P: Human thrombocytosis tissue; human bone; Mouse and rat spleen tissues.  |
| <b>General notes</b>       | <p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> <li>- Long-term security of supply</li> <li>- Animal-free production</li> </ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a>.</p> |

#### Properties

|                             |   |
|-----------------------------|---|
| <b>Form</b>                 | Liquid  |
| <b>Storage instructions</b> | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle. |
| <b>Storage buffer</b>       | <p>pH: 7.2</p> <p>Preservative: 0.01% Sodium azide</p> <p>Constituents: PBS, 40% Glycerol, 0.05% BSA</p>                          |
| <b>Purity</b>               | Protein A purified  |

|                     |            |
|---------------------|------------|
| <b>Clonality</b>    | Monoclonal |
| <b>Clone number</b> | EPR21143   |
| <b>Isotype</b>      | IgG        |

## Applications

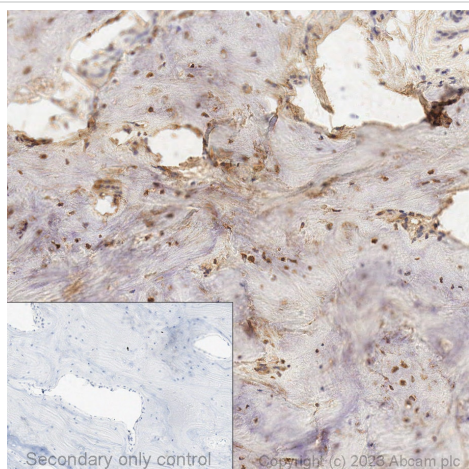
**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab215715 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

| Application  | Abreviews | Notes   |
|--------------|-----------|---|
| <b>WB</b>    | ★★★★★ (1) | 1/1000. Predicted molecular weight: 44 kDa.<br>Actual band: 13 kDa and 44 kDa   |
| <b>IHC-P</b> | ★★★★★ (4) | 1/500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. |

## Target

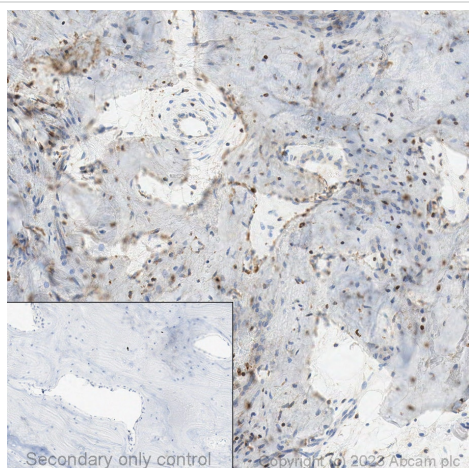
|   |   |
|---|---|
| <b>Function</b>                         | Multifunctional protein that controls proliferation, differentiation and other functions in many cell types. Many cells synthesize TGFB1 and have specific receptors for it. It positively and negatively regulates many other growth factors. It plays an important role in bone remodeling as it is a potent stimulator of osteoblastic bone formation, causing chemotaxis, proliferation and differentiation in committed osteoblasts.                                     |
| <b>Tissue specificity</b>               | Highly expressed in bone. Abundantly expressed in articular cartilage and chondrocytes and is increased in osteoarthritis (OA). Co-localizes with ASPN in chondrocytes within OA lesions of articular cartilage.  |
| <b>Involvement in disease</b>           | Defects in TGFB1 are the cause of Camurati-Engelmann disease (CE) [MIM:131300]; also known as progressive diaphyseal dysplasia 1 (DPD1). CE is an autosomal dominant disorder characterized by hyperostosis and sclerosis of the diaphyses of long bones. The disease typically presents in early childhood with pain, muscular weakness and waddling gait, and in some cases other features such as exophthalmos, facial paralysis, hearing difficulties and loss of vision. |
| <b>Sequence similarities</b>            | Belongs to the TGF-beta family.   |
| <b>Post-translational modifications</b> | Glycosylated.<br>The precursor is cleaved into mature TGF-beta-1 and LAP, which remains non-covalently linked to mature TGF-beta-1 rendering it inactive.   |
| <b>Cellular localization</b>            | Secreted > extracellular space > extracellular matrix.  |

## Images



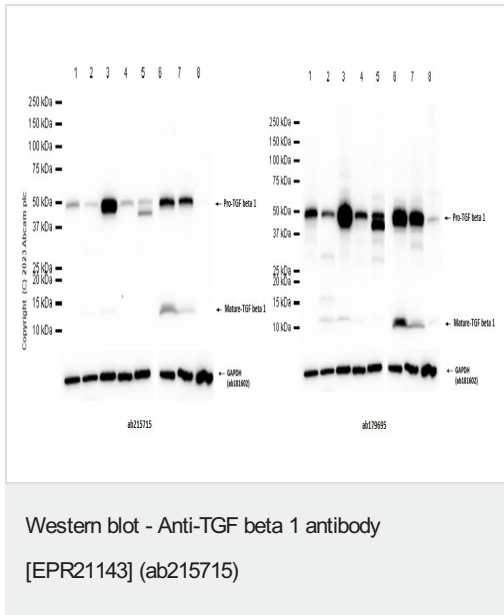
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta 1 antibody [EPR21143] (ab215715)

Immunohistochemical analysis of formalin-fixed paraffin-embedded human bone labelling TGF beta 1 with ab215715 at a concentration of 3µg/ml. The immunostaining was performed on a Leica Biosystems BOND®RX instrument with a Bond™ Polymer Refine Detection kit. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution 2) for 20 mins. ab215715 anti-TGF beta 1 antibody [EPR21143] was incubated for 15mins at room temperature. Sections were counterstained with Hematoxylin. Image inset shows absence of staining in secondary antibody only control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta 1 antibody [EPR21143] (ab215715)

Immunohistochemical analysis of formalin-fixed paraffin-embedded human bone labelling TGF beta 1 with ab215715 at a dilution of 4µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with an OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was conducted for 32min with ULTRA cell conditioning solution (CC1 pH8.5). ab215715 anti TGF beta 1 antibody was incubated at 37°C for 16min. Sections were counterstained is with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.



**All lanes :** Anti-TGF beta 1 antibody [EPR21143] (ab215715) at 1/1000 dilution

**Lane 1 :** A549 (Human lung carcinoma epithelial cell) whole cell lysate at 20 µg

**Lane 2 :** HL-60 (Human acute promyelocytic leukemia promyeloblast) whole cell lysate at 20 µg

**Lane 3 :** K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysate at 20 µg

**Lane 4 :** NIH/3T3 (Mouse embryonic fibroblast) whole cell lysate at 20 µg

**Lane 5 :** C6 (Rat glial tumor glial cell) whole cell lysate at 20 µg

**Lane 6 :** Mouse spleen tissue lysate

**Lane 7 :** Rat spleen tissue lysate

**Lane 8 :** Mouse heart tissue lysate

### Secondary

**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

**Predicted band size:** 44 kDa

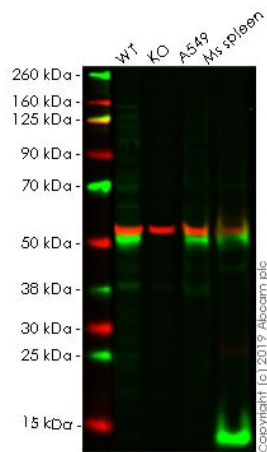
**Observed band size:** 12,44 kDa

**Exposure time:** 20 seconds

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

[ab181602](#) was used as a GAPDH loading control.

For testing samples with low expression level of TGF beta 1, we recommend [ab179695](#) which could give stronger signal. Loading larger amount of lysate or lower antibody dilution would also help.



Western blot - Anti-TGF beta 1 antibody  
[EPR21143] (ab215715)

**All lanes :** Anti-TGF beta 1 antibody [EPR21143] (ab215715) at 1/1000 dilution

**Lane 1 :** Wild-type HeLa whole cell lysate

**Lane 2 :** TGFB1 knockout HeLa whole cell lysate

**Lane 3 :** A549 whole cell lysate

**Lane 4 :** Mouse spleen tissue lysate

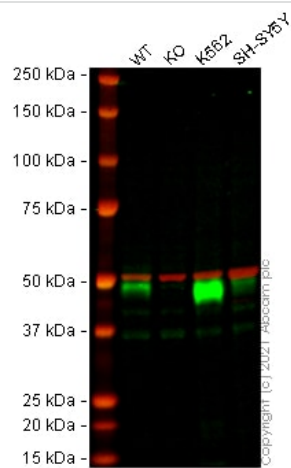
Lysates/proteins at 20 µg per lane.

**Predicted band size:** 44 kDa

**Observed band size:** 13,44 kDa

**Lanes 1 - 4:** Merged signal (red and green). Green - ab215715 observed at 13 and 44 kDa. Red - loading control, **ab7291**, observed at 50 kDa.

ab215715 was shown to specifically react with in wild-type HeLa cells as signal was lost in TGFB1 knockout cells. Wild-type and TGFB1 knockout samples were subjected to SDS-PAGE. The membrane was blocked with 3% NF Milk. Ab215715 and **ab7291** (Mouse anti-tubulin 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 1/20000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-TGF beta 1 antibody  
[EPR21143] (ab215715)

**All lanes :** Anti-TGF beta 1 antibody [EPR21143] (ab215715) at 1/1000 dilution

**Lane 1 :** Wild-type A549 cell lysate

**Lane 2 :** TGFB1 knockout A549 cell lysate

**Lane 3 :** K562 cell lysate

**Lane 4 :** SH-SY5Y cell lysate

Lysates/proteins at 20 µg per lane.

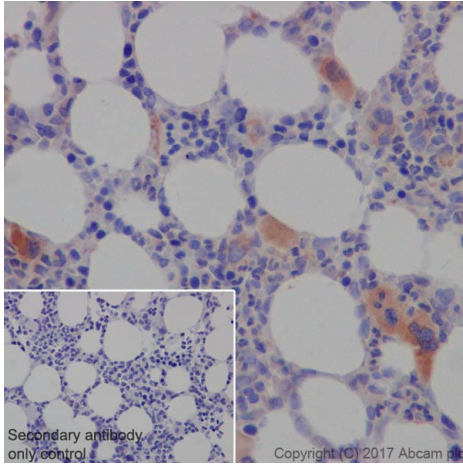
Performed under reducing conditions.

**Predicted band size:** 44 kDa

**Observed band size:** 48 kDa

**Lanes 1 - 4:** Merged signal (red and green). Green - ab215715 observed at 48 kDa. Red - loading control [ab7291](#) (Mouse anti-Alpha Tubulin [DM1A]) observed at 55 kDa.

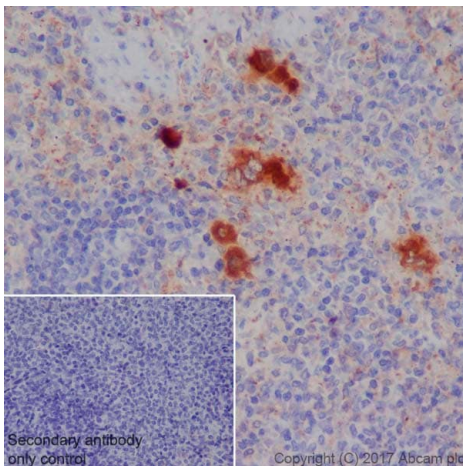
ab215715 was shown to react with TGF beta 1 in wild-type A549 cells in Western blot with loss of signal observed in TGFB1 knockout cell line [ab269509](#) (TGFB1 knockout cell lysate [ab269671](#)). Wild-type A549 and TGFB1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab215715 and [ab7291](#) (Mouse anti-Alpha Tubulin [DM1A]) overnight at 4 °C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated 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 in 20000 dilution for 1 h at room temperature before imaging.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta 1 antibody [EPR21143] (ab215715)

Immunohistochemical analysis of paraffin-embedded human thrombocytosis tissue labeling TGF beta 1 with ab215715 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Cytoplasmic staining of megakaryocytes in human thrombocytosis (PMID: 25305163). Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

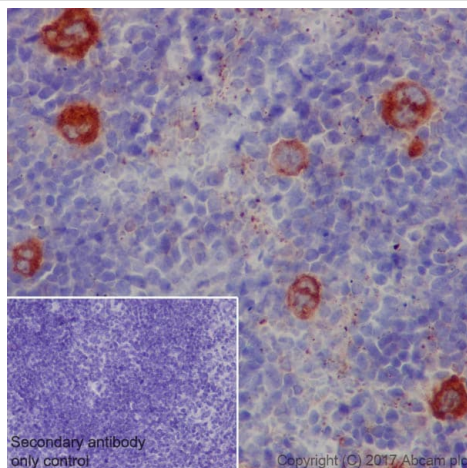


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta 1 antibody [EPR21143] (ab215715)

Immunohistochemical analysis of paraffin-embedded rat spleen tissue labeling TGF beta 1 with ab215715 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Positive staining of megakaryocytes and platelets in rat spleen (PMID: 25305163). Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

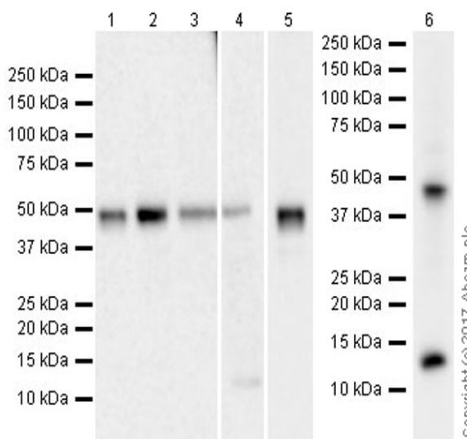




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta 1 antibody [EPR21143] (ab215715)

Immunohistochemical analysis of paraffin-embedded mouse spleen tissue labeling TGF beta 1 with ab215715 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Positive staining of megakaryocytes and platelets in mouse spleen (PMID: 25305163). Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.



Western blot - Anti-TGF beta 1 antibody [EPR21143] (ab215715)

**All lanes :** Anti-TGF beta 1 antibody [EPR21143] (ab215715) at 1/1000 dilution

**Lane 1 :** NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate at 20 µg

**Lane 2 :** L-929 (mouse connective tissue fibroblast cell line) whole cell lysate at 20 µg

**Lane 3 :** A549 (human lung carcinoma cell line) whole cell lysate at 20 µg

**Lane 4 :** HL-60 (human promyelocytic leukemia cell line) whole cell lysate at 20 µg

**Lane 5 :** RAW 264.7 (mouse macrophage cell line transformed with Abelson murine leukemia virus) whole cell lysate at 20 µg

**Lane 6 :** Mouse spleen lysate at 10 µg

### Secondary

**All lanes :** 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:** 12,44 kDa

**Exposure times:** Lanes 1-4: 3 minutes; Lane 5: 41 seconds; Lane







6: 24 seconds.

Blocking/Dilution buffer: 5% NFDM/TBST.

The molecular mass observed is consistent with the literature (PMID 2139036).

The blot was developed on a BIO-RAD® ChemiDoc™ MP instrument.

Why choose a recombinant antibody?

|  |  |
|--|--|
|  <p><b>Research with confidence</b><br/>Consistent and reproducible results</p> |  <p><b>Long-term and scalable supply</b><br/>Recombinant technology</p> |
|  <p><b>Success from the first experiment</b><br/>Confirmed specificity</p>      |  <p><b>Ethical standards compliant</b><br/>Animal-free production</p>   |

Anti-TGF beta 1 antibody [EPR21143] (ab215715)

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