

## Product datasheet

# Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker ab52642

Recombinant RabMAb

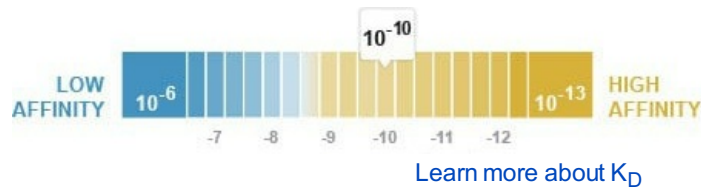
★★★★☆ 34 Abreviews 219 References 19 Images

### Overview

<b>Product name</b>	Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker
<b>Description</b>	Rabbit monoclonal [EP1576Y] to S100 beta - Astrocyte Marker
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> IHC (PFA fixed), IHC-Fr, ICC/IF, WB, IP, IHC-P
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human <b>Predicted to work with:</b> Goat, Zebrafish, Macaque monkey
<b>Immunogen</b>	Synthetic peptide within Human S100 beta aa 50 to the C-terminus (C terminal). The exact sequence is proprietary. Database link: <a href="#">P04271</a>
<b>Positive control</b>	IHC-P: Human, mouse and rat cerebral cortex. Human spiral ganglion and melanoma tissue; Normal WT and laser-treated mouse retina; Native and acellular peripheral nerve sections; Embryonic mouse brain tissue, brain tissue; WB: B16F0 and A-375 cell lysates, mouse spinal cord, rat brain; ICC/IF: A-375 cells, primary rat neurons IP: Human fetal brain; IHC-Fr: Mouse and rat cerebrum, Hu cerebral cortex
<b>General notes</b>	This product is a recombinant monoclonal antibody, which offers several advantages including: <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> For more information <a href="#">see here</a> . 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> . <b>We are constantly working hard to ensure we provide our customers with best in class antibodies. As a result of this work we are pleased to now offer this antibody in purified format. We are in the process of updating our datasheets. The purified format is designated 'PUR' on our product labels. If you have any questions regarding this update, please contact our Scientific Support team.</b>

### 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>Dissociation constant (K<sub>D</sub>)</b>	K <sub>D</sub> = 5.50 x 10 <sup>-10</sup> M



<b>Storage buffer</b>	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EP1576Y
<b>Isotype</b>	IgG

## Applications

**The Abpromise guarantee** Our [Abpromise guarantee](#) covers the use of ab52642 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
IHC (PFA fixed)		Use at an assay dependent concentration.
IHC-Fr	★★★★★ (3)	Use at an assay dependent concentration. Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20).
ICC/IF	★★★★★★ (6)	1/100.
WB	★★★★★ (4)	1/1000 - 1/5000. Detects a band of approximately 11 kDa (predicted molecular weight: 11 kDa).
IP		1/50.
IHC-P	★★★★★★ (16)	1/200 - 1/1000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. See <a href="#">IHC antigen retrieval protocols</a> .

## Target

**Function** Weakly binds calcium but binds zinc very tightly-distinct binding sites with different affinities exist for both ions on each monomer. Physiological concentrations of potassium ion antagonize the binding of both divalent cations, especially affecting high-affinity calcium-binding sites. Binds to and initiates the activation of STK38 by releasing autoinhibitory intramolecular interactions within

the kinase. Interaction with AGER after myocardial infarction may play a role in myocyte apoptosis by activating ERK1/2 and p53/TP53 signaling.

### Tissue specificity

Although predominant among the water-soluble brain proteins, S100 is also found in a variety of other tissues.

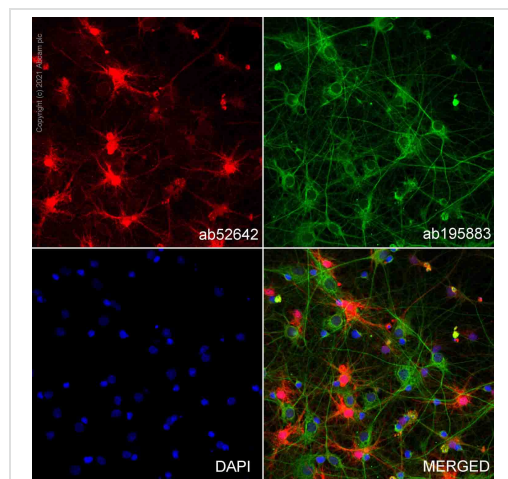
### Sequence similarities

Belongs to the S-101 family.  
Contains 2 EF-hand domains.

### Cellular localization

Cytoplasm. Nucleus.

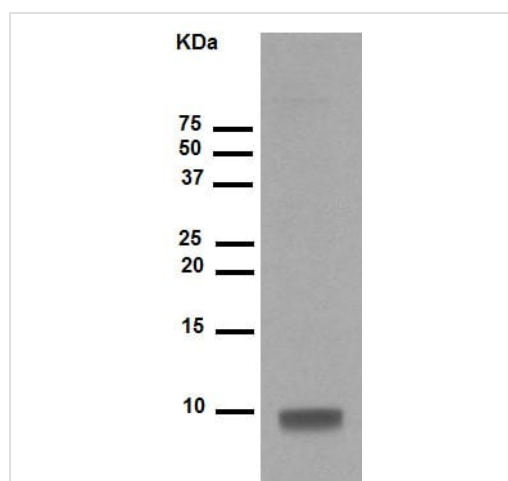
## Images



Immunocytochemistry/ Immunofluorescence - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

ab52642 staining S100 beta in primary rat neurons/glia, DIV14 (prepared from E18 rat hippocampal brain area, obtained from Transnetyx Tissue by BrainBits, LLC, cat.no. SDHEP). The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab52642 at 5µg/ml and ab195883, Rat monoclonal to alpha Tubulin (Alexa Fluor® 488), at 2µg/ml (shown in green). The secondary antibody (shown in red) was ab150083, Alexa Fluor® 647 Goat anti-Rabbit IgG (H+L) used at a 1/1000 dilution for 1h at room temperature. Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Western blot - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642) at 1/5000 dilution (purified) + A-375 (human malignant melanoma cell line) at 10 µg

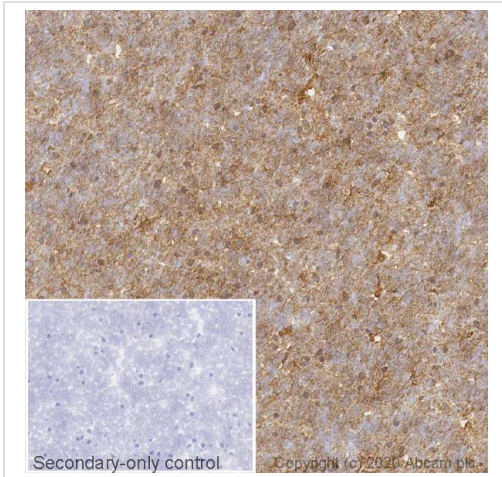
### Secondary

Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

**Predicted band size:** 11 kDa

**Observed band size:** 11 kDa

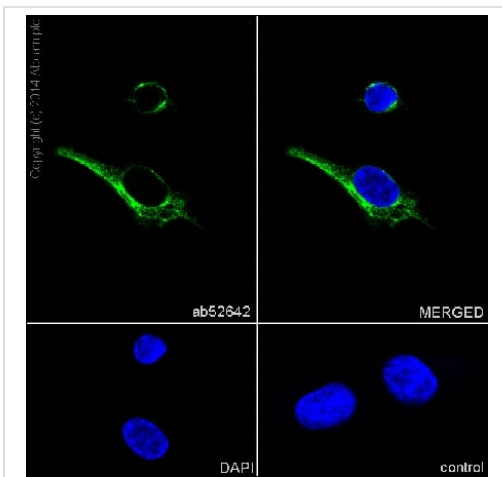
Blocking and Diluting buffer and concentration: 5% NFD/MTBST



Immunohistochemistry (Frozen sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

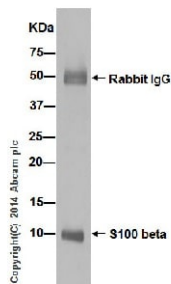
IHC image of S100 beta staining in a section of frozen normal human cerebral cortex performed on a Leica BOND™ system using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with [ab16659](#), 1/5000 dilution, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.



Immunocytochemistry/ Immunofluorescence - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

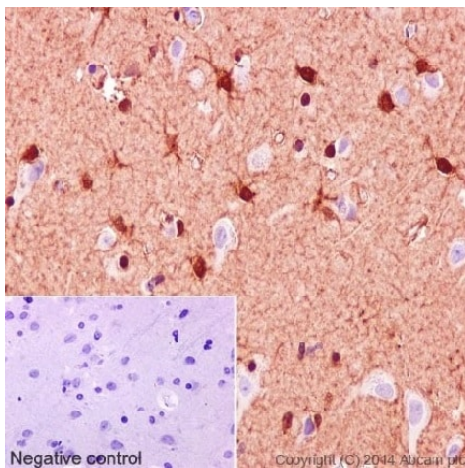
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 A-375 (human malignant melanoma cell line) cells labeling S100 beta with purified [ab52642](#) at 1/100 dilution, followed by Goat anti rabbit IgG (Alexa Fluor® 488) [ab150077](#) secondary antibody at 1/500 dilution (green). The nuclear counter stain is DAPI (blue). The negative control is as follows; [ab52642](#) at 1/100 dilution followed by [ab150120](#) (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.



Immunoprecipitation - Anti-S100 beta antibody  
[EP1576Y] - Astrocyte Marker (ab52642)

S100 beta was immunoprecipitated from human fetal brain with purified ab52642 at 1/50 dilution. Western blot was performed from the immunoprecipitate using ab52642 and Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated was used as secondary antibody at 1/1000 dilution.

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

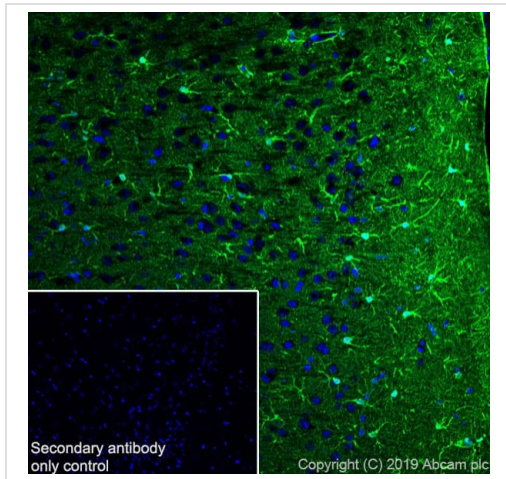


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody  
[EP1576Y] - Astrocyte Marker (ab52642)

Immunohistochemical analysis of paraffin embedded human cerebral cortex tissue labeling S100 beta with purified ab52642 at 1/1000 dilution. Secondary antibody was Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Counter stain: Hematoxylin.

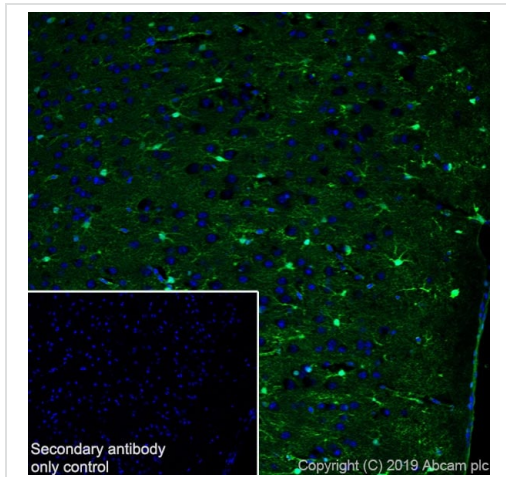
Negative control: Using PBS instead of primary antibody.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Frozen sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

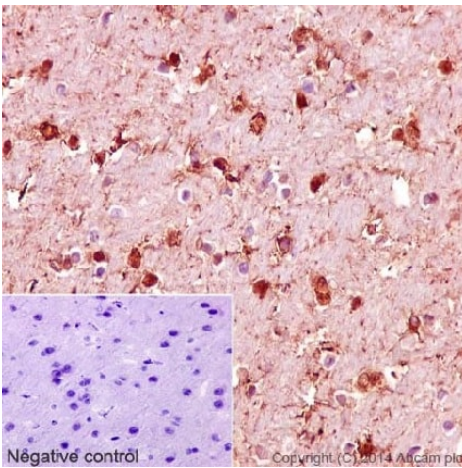
Immunohistochemistry (Frozen sections) analysis of rat cerebrum tissue sections labeling S100 beta with purified ab52642 at 1/100 (9.9  $\mu\text{g/ml}$ ). Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20). Goat anti rabbit IgG (Alexa Fluor<sup>®</sup> 488, ab150077) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. DAPI was used as a counterstain.



Immunohistochemistry (Frozen sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

Immunohistochemistry (Frozen sections) analysis of mouse cerebrum tissue sections labeling S100 beta with purified ab52642 at 1/100 (9.9  $\mu\text{g/ml}$ ). Heat mediated antigen retrieval using sodium citrate buffer (10mM citrate pH 6.0 + 0.05% Tween-20). Goat anti rabbit IgG (Alexa Fluor<sup>®</sup> 488, ab150077) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. DAPI was used as a counterstain.



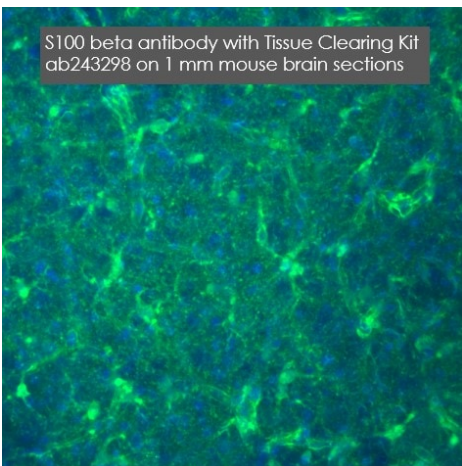


Immunohistochemical analysis of paraffin embedded rat cerebral cortex tissue labeling S100 beta with purified ab52642 at 1/1000 dilution. Secondary antibody was Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/500 dilution. Counter stain: Hematoxylin.

Negative control: Using PBS instead of primary antibody.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker ([ab52642](#))

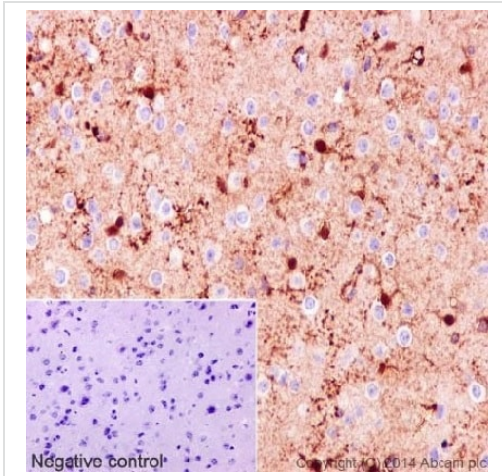


S100 beta antibody ab52642 was used with Tissue Clearing Kit [ab243298](#) to penetrate, stain and clear a 1 mm coronal section of mouse brain. Blue: DAPI, Green: S100 beta.

Learn more about [tissue clearing kits, reagents, and protocols](#) designed to make it easier to stain thick tissue sections and get more data from each valuable tissue section.

To use this antibody with tissue clearing, use Tissue Clearing Kit [ab243298](#). For 1 mm brain sections, we recommend a starting dilution of 1:200, and also using Goat Anti-Rabbit IgG H&L AlexaFluor488 ([ab150077](#)) at a dilution of 1:400.

Immunohistochemistry (PFA fixed) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker ([ab52642](#))

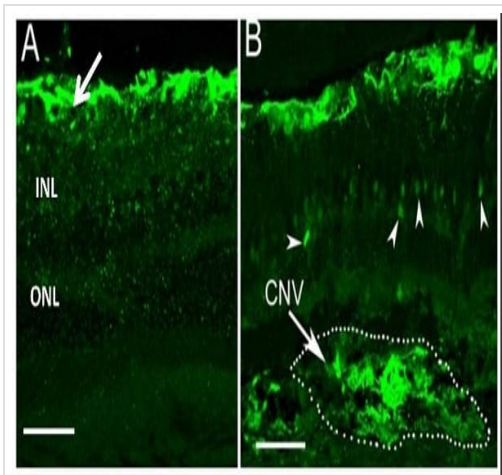


Immunohistochemical analysis of paraffin embedded mouse cerebral cortex tissue labeling S100 beta with purified ab52642 at 1/1000 dilution. Secondary antibody was Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Counter stain: Hematoxylin.

Negative control: Using PBS instead of primary antibody.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)



S100 beta is present in CNV lesions.

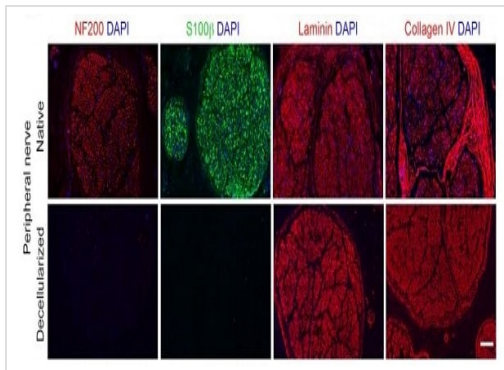
**A)** S100 beta expression in a normal WT mouse retina. Strong immunoreactivity is present in the astrocytes (arrow). The position of the inner nuclear layer (INL) and outer nuclear layer (ONL) are indicated. Scale bar is 50 μm.

**B)** S100 beta expression in WT mouse retinal at day 7 post-laser treatment. S100B was detected in the outer plexiform layer (arrowheads). Strong S100 beta expression was detected at the site of CNV. Scale bar is 50 μm.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

Image from Chen Met et al., PLoS One. 2014;9(2):e89548. Fig 3.; doi: 10.1371/journal.pone.0089548. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

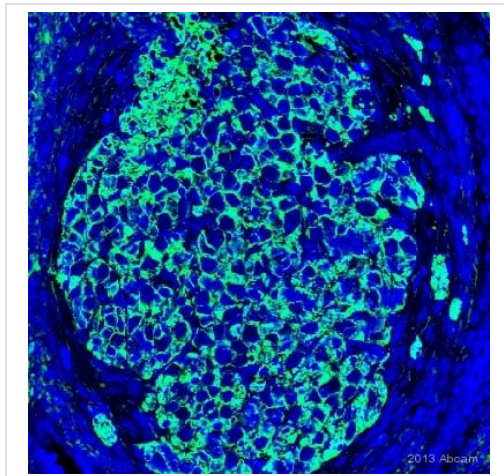




Immunofluorescent imaging of native and acellular human peripheral nerve sections stained for the axon protein Neurofilaments (NF200), the Schwann's cell marker S100 $\beta$  (ab52642) and for the extracellular matrix proteins Laminin and Collagen IV. Sections were counterstained with DAPI to confirm the removal of the cell nuclei upon decellularization (scale bar: 100  $\mu$ m).

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

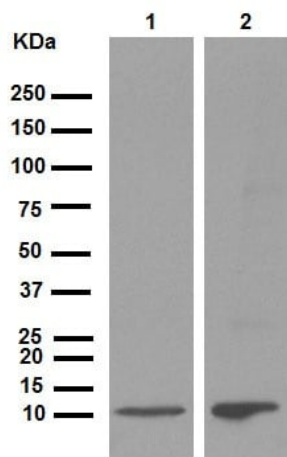
Image from Gerli MFM et al., PLoS One. 2018;13(1):e0191497 Fig 3.; doi: 10.1371/journal.pone.0191497. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>



Unpurified ab52642 staining S100 beta in human spiral ganglion tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and blocked with 1% BSA for 30 minutes at room temperature; antigen retrieval was by heat mediation in citrate buffer, pH 6.0. Samples were incubated with primary antibody (1/200 in PBS-T + 1% BSA) for 12 hours. An Alexa Fluor<sup>®</sup> 488-conjugated Donkey anti-rabbit IgG polyclonal (1/500) was used as the secondary antibody.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

This image is courtesy of an Abreview submitted by Heiko Locher



Western blot - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

**All lanes :** Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642) at 1/10000 dilution (purified)

**Lane 1 :** Mouse spinal cord

**Lane 2 :** Rat brain

Lysates/proteins at 20 µg per lane.

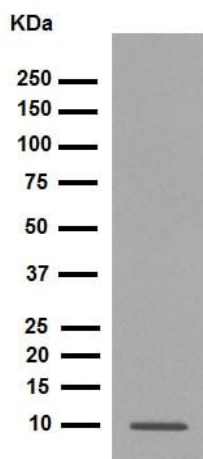
**Secondary**

**All lanes :** Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

**Predicted band size:** 11 kDa

**Observed band size:** 11 kDa

Blocking and Diluting buffer and concentration: 5% NFDm/TBST



Western blot - Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642) at 1/5000 dilution (purified) + B16F0 (mouse melanoma cell line) at 10 µg

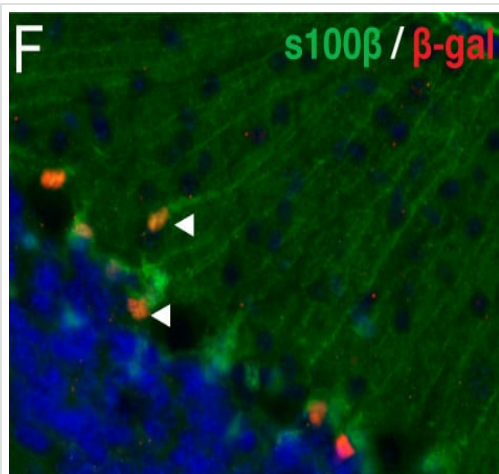
**Secondary**

Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/1000 dilution

**Predicted band size:** 11 kDa

**Observed band size:** 11 kDa

Blocking and Diluting buffer and concentration: 5% NFDm/TBST



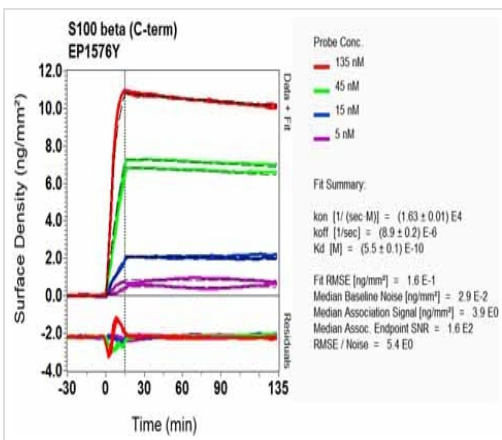
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-S100 beta antibody

[EP1576Y] - Astrocyte Marker (ab52642)

Image from Selvadurai HJ & Mason JO, PLoS One. 2011;6(8):e23012. Epub 2011 Aug 8. Fig 5.; doi:10.1371/journal.pone.0023012; August 8, 2011, PLoS ONE 6(8): e23012.

Immunohistochemical analysis of embryonic mouse brain tissue, staining S100 beta with unpurified ab52642.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



SPR Scanning - Anti-S100 beta antibody





[EP1576Y] - Astrocyte Marker (ab52642)

Equilibrium dissociation constant ( $K_D$ )

Learn more about  $K_D$

[Click here to learn more about  \$K\_D\$](#)

**Why choose a recombinant antibody?**

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

Anti-S100 beta antibody [EP1576Y] - Astrocyte Marker (ab52642)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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- Extensive multi-media technical resources to help you
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