**Product datasheet**

**Anti-TGF beta Receptor I antibody ab31013**

<table>
<thead>
<tr>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product name</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Host species</strong></td>
</tr>
<tr>
<td><strong>Tested applications</strong></td>
</tr>
<tr>
<td><strong>Species reactivity</strong></td>
</tr>
<tr>
<td><strong>Immunogen</strong></td>
</tr>
<tr>
<td><strong>General notes</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
</tr>
<tr>
<td><strong>Storage instructions</strong></td>
</tr>
<tr>
<td><strong>Storage buffer</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Purity</strong></td>
</tr>
<tr>
<td><strong>Purification notes</strong></td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
</tr>
<tr>
<td><strong>Isotype</strong></td>
</tr>
</tbody>
</table>

**Applications**
Our Abpromise guarantee covers the use of ab31013 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICC/IF</td>
<td></td>
<td>1/500.</td>
</tr>
<tr>
<td>Flow Cyt</td>
<td></td>
<td>Use at an assay dependent concentration. ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.</td>
</tr>
<tr>
<td>IP</td>
<td></td>
<td>Use at 1 µg/mg of lysate.</td>
</tr>
<tr>
<td>WB</td>
<td></td>
<td>Use at an assay dependent concentration. Predicted molecular weight: 56 kDa.</td>
</tr>
<tr>
<td>IHC-P</td>
<td></td>
<td>1/50. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. Staining requires boiling tissue sections in 10mM citrate buffer, pH 6.0 for 10 min followed by cooling at room temperature for 20 min.</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 20223936</td>
</tr>
</tbody>
</table>

**Target**

**Function**
On ligand binding, forms a receptor complex consisting of two type II and two type I transmembrane serine/threonine kinases. Type II receptors phosphorylate and activate type I receptors which autophosphorylate, then bind and activate SMAD transcriptional regulators. Receptor for TGF-beta.

**Tissue specificity**
Found in all tissues examined, most abundant in placenta and least abundant in brain and heart.

**Involvement in disease**
Defects in TGFBR1 are the cause of Loeys-Dietz syndrome type 1A (LDS1A) [MIM:609192]; also known as Furlong syndrome or Loeys-Dietz aortic aneurysm syndrome (LDAS). LDS1 is an aortic aneurysm syndrome with widespread systemic involvement. The disorder is characterized by arterial tortuosity and aneurysms, craniosynostosis, hypertelorism, and bifid uvula or cleft palate. Other findings include exotropia, micrognathia and retrognathia, structural brain abnormalities, intellectual deficit, congenital heart disease, translucent skin, joint hyperlaxity and aneurysm with dissection throughout the arterial tree.

Defects in TGFBR1 are the cause of Loeys-Dietz syndrome type 2A (LDS2A) [MIM:608967]. LDS2 is an aortic aneurysm syndrome with widespread systemic involvement. Physical findings include prominent joint laxity, easy bruising, wide and atrophic scars, velvety and translucent skin with easily visible veins, spontaneous rupture of the spleen or bowel, diffuse arterial aneurysms and dissections, and catastrophic complications of pregnancy, including rupture of the gravid uterus and the arteries, either during pregnancy or in the immediate postpartum period. LDS2 is characterized by the absence of craniofacial abnormalities with the exception of bifid uvula that can be present in some patients.

Defects in TGFBR1 are the cause of aortic aneurysm familial thoracic type 5 (AAT5) [MIM:608967]. Aneurysms and dissections of the aorta usually result from degenerative changes in the aortic wall. Thoracic aortic aneurysms and dissections are primarily associated with a characteristic histologic appearance known as 'medial necrosis' in which there is degeneration and fragmentation of elastic fibers, loss of smooth muscle cells, and an accumulation of basophilic ground substance.

**Sequence similarities**
Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. TGFB receptor subfamily.
Contains 1 GS domain.
Contains 1 protein kinase domain.

Post-translational modifications
Phosphorylated at basal levels in the absence of ligand binding. Activated by multiple phosphorylation, mainly in the GS region.

Cellular localization
Membrane.

Images

Anti-TGF beta Receptor I antibody (ab31013) at 1 µg/ml + HepG2 (Human hepatocellular liver carcinoma cell line) Whole Cell Lysate at 10 µg

Secondary
Goat polyclonal to Rabbit IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Predicted band size: 56 kDa
Observed band size: 56 kDa

ab31013 staining TGF beta Receptor I in Human intestine tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and blocked with 5% BSA for 1 hour at room temperature; antigen retrieval was by heat mediation using Abcam Heat mediated solution ab973. Samples were incubated with primary antibody (1/100) for 20 hours at 4°C. A HRP-conjugated Goat polyclonal (1/500) was used as the secondary antibody.
ab31013 staining the TGF beta Receptor in Mouse liver immortalized cells by Flow Cytometry. Cells were cultured in 5% mouse serum + PBS. The sample was incubated with the primary antibody (1/10 in PBS + 5% mouse serum) for 40 minutes at 4°C. A Alexa Fluor 594-conjugated Mouse anti-rabbit (1/1000) was used as the secondary antibody.

Gating Strategy: Negative control without antibody.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta Receptor I antibody (ab31013)

Image courtesy of an anonymous Abreview

ab31013 staining TGF beta Receptor I in Human Lymph node tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and blocked with 10% serum for 1 hour at 20°C. Samples were incubated with primary antibody (1/50) for 12 hours at 4°C. A HRP-conjugated Goat anti-rabbit polyclonal (1/200) was used as the secondary antibody.
Western blot - Anti-TGF beta Receptor I antibody (ab31013) at 1/1000 dilution (for 18 hours at 4°C) + Mouse intestine whole tissue lysate at 15 µg

**Secondary**
An HRP-conjugated Goat anti-rabbit IgG polyclonal at 1/8000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

**Predicted band size:** 56 kDa  
**Observed band size:** 56 kDa

**Exposure time:** 1 minute

**Blocking Step:** 5% Milk for 1 hour at 4°C

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta Receptor I antibody (ab31013) staining the TGF beta receptor I in Human intestine tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with paraformaldehyde and blocked with 5% BSA for 1 hour at 18°C; antigen retrieval was by heat mediation with citric acid (pH 5.5). Samples were incubated with primary antibody (1/750) for 6 hours at 20°C. An HRP-conjugated Goat anti-rabbit IgG polyclonal (1/2500) was used as the secondary antibody.
Western blot - Anti-TGF beta Receptor I antibody (ab31013)
This image is courtesy of an anonymous Abreview

Anti-TGF beta Receptor I antibody (ab31013) at 1/750 dilution (for 16 hours at 4°C) + Rat intestine whole tissue lysate at 20 µg

Secondary
An HRP-conjugated Goat anti-rabbit IgG polyclonal at 1/10000 dilution
Developed using the ECL technique.
Performed under reducing conditions.

Predicted band size: 56 kDa
Observed band size: 56 kDa

Exposure time: 2 minutes

Blocking Step: 5% Milk for 1 hour at 20°C

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TGF beta Receptor I antibody (ab31013)
This image is courtesy of an anonymous Abreview

ab31013 at 1/50 staining rat heart tissue sections by IHC-P. The tissue was formaldehyde fixed and a heat mediated antigen retrieval step was performed in citrate buffer. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

Intense staining of rat heart valve was seen in fresh cut sections compared to weaker staining in those that had been cut 2 weeks previously. Primate placenta was used as a positive control as Abcam recommends - we saw a similar staining pattern to image already on their product page (i.e. clear positive staining was confirmed in the placental outer trophoblast layers). Negative controls (substitution of primary for buffer and suitable isotype) were clear.

Please note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"
Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors