

## Product datasheet

# Anti-Smad4 antibody [SP306] - C-terminal, prediluted ab228205

Recombinant RabMAb

7 Images

### Overview

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<b>Product name</b>	Anti-Smad4 antibody [SP306] - C-terminal, prediluted
<b>Description</b>	Rabbit monoclonal [SP306] to Smad4 - C-terminal, prediluted
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> IHC-P
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Immunogen</b>	Synthetic peptide within Human Smad4 aa 500 to the C-terminus (C terminal). The exact sequence is proprietary. Database link: <a href="#">Q13485</a>
<b>Positive control</b>	IHC-P: Human placenta, pancreas, kidney, colon, pancreatic adenocarcinoma, colon adenocarcinoma and renal cell carcinoma tissues.
<b>General notes</b>	FOR RESEARCH USE ONLY. For commercial use, please contact <a href="mailto:partnerships@abcam.com">partnerships@abcam.com</a> .

### Properties

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<b>Form</b>	Prediluted
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C. Do Not Freeze.
<b>Storage buffer</b>	pH: 7.6 Preservative: 0.1% Sodium azide Constituents: Tris buffered saline, 1% BSA
<b>Purity</b>	Protein A/G purified
<b>Purification notes</b>	Purified from TCS by protein A/G.
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	SP306
<b>Isotype</b>	IgG

### Applications

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Our [Abpromise guarantee](#) covers the use of **ab228205** 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-P		1/1. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. Primary antibody incubation for 10 minutes at room temperature. Pre-diluted / ready to use.

## Target

### Function

Common SMAD (co-SMAD) is the coactivator and mediator of signal transduction by TGF-beta (transforming growth factor). Component of the heterotrimeric SMAD2/SMAD3-SMAD4 complex that forms in the nucleus and is required for the TGF-mediated signaling. Promotes binding of the SMAD2/SMAD4/FAST-1 complex to DNA and provides an activation function required for SMAD1 or SMAD2 to stimulate transcription. Component of the multimeric SMAD3/SMAD4/JUN/FOS complex which forms at the AP1 promoter site; required for synergistic transcriptional activity in response to TGF-beta. May act as a tumor suppressor.

### Involvement in disease

Defects in SMAD4 are a cause of pancreatic cancer (PNCA) [MIM:260350].  
Defects in SMAD4 are a cause of juvenile polyposis syndrome (JPS) [MIM:174900]; also known as juvenile intestinal polyposis (JIP). JPS is an autosomal dominant gastrointestinal hamartomatous polyposis syndrome in which patients are at risk for developing gastrointestinal cancers. The lesions are typified by a smooth histological appearance, predominant stroma, cystic spaces and lack of a smooth muscle core. Multiple juvenile polyps usually occur in a number of Mendelian disorders. Sometimes, these polyps occur without associated features as in JPS; here, polyps tend to occur in the large bowel and are associated with an increased risk of colon and other gastrointestinal cancers.  
Defects in SMAD4 are a cause of juvenile polyposis/hereditary hemorrhagic telangiectasia syndrome (JP/HHT) [MIM:175050]. JP/HHT syndrome phenotype consists of the coexistence of juvenile polyposis (JIP) and hereditary hemorrhagic telangiectasia (HHT) [MIM:187300] in a single individual. JIP and HHT are autosomal dominant disorders with distinct and non-overlapping clinical features. The former, an inherited gastrointestinal malignancy predisposition, is caused by mutations in SMAD4 or BMPR1A, and the latter is a vascular malformation disorder caused by mutations in ENG or ACVRL1. All four genes encode proteins involved in the transforming-growth-factor-signaling pathway. Although there are reports of patients and families with phenotypes of both disorders combined, the genetic etiology of this association is unknown.  
Defects in SMAD4 may be a cause of colorectal cancer (CRC) [MIM:114500].

### Sequence similarities

Belongs to the dwarfin/SMAD family.  
Contains 1 MH1 (MAD homology 1) domain.  
Contains 1 MH2 (MAD homology 2) domain.

### Domain

The MH1 domain is required for DNA binding.  
The MH2 domain is required for both homomeric and heteromeric interactions and for transcriptional regulation. Sufficient for nuclear import.

### Post-translational modifications

Monoubiquitinated on Lys-519 by E3 ubiquitin-protein ligase TRIM33. Monoubiquitination hampers its ability to form a stable complex with activated SMAD2/3 resulting in inhibition of TGF-beta/BMP signaling cascade. Deubiquitination by USP9X restores its competence to mediate TGF-beta signaling.

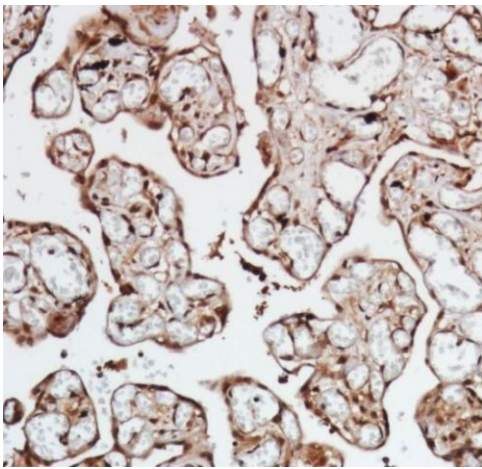
## Cellular localization

Cytoplasm. Nucleus. Cytoplasmic in the absence of ligand. Migrates to the nucleus when complexed with R-SMAD.

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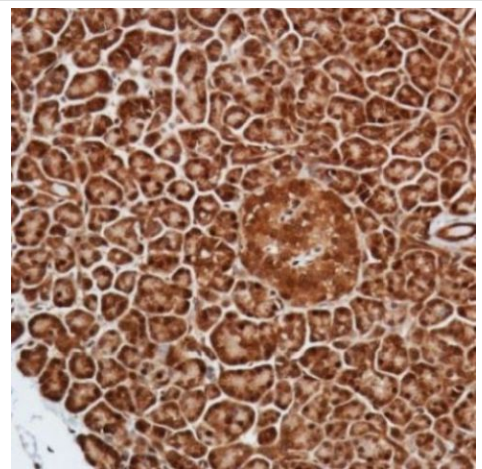
## Images

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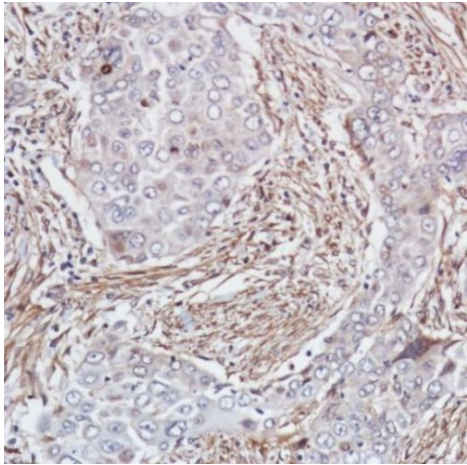
Formalin-fixed, paraffin-embedded human placenta tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
- C-terminal, prediluted (ab228205)



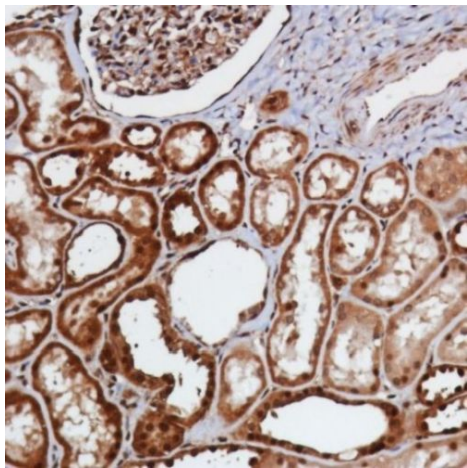
Formalin-fixed, paraffin-embedded human pancreas tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
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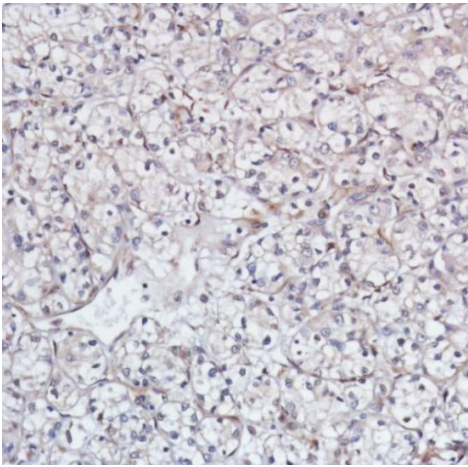
Formalin-fixed, paraffin-embedded human pancreatic adenocarcinoma tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
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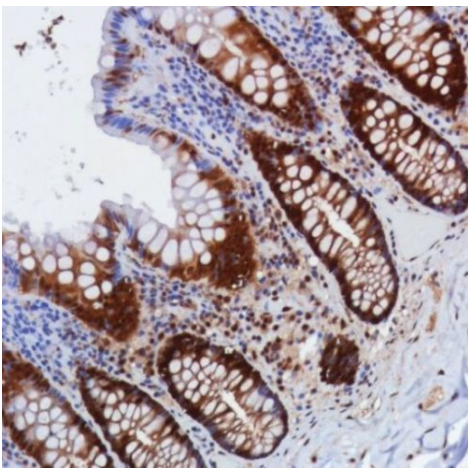
Formalin-fixed, paraffin-embedded human kidney tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
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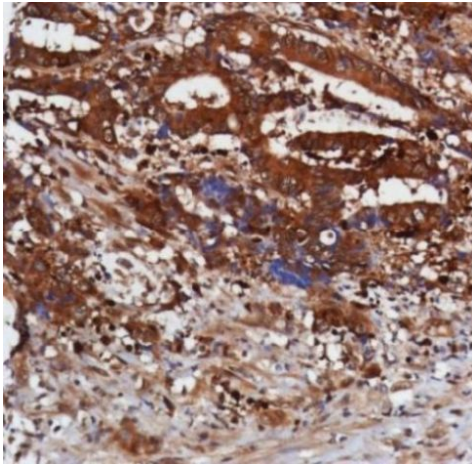
Formalin-fixed, paraffin-embedded human renal cell carcinoma tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
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Formalin-fixed, paraffin-embedded human colon tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
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Formalin-fixed, paraffin-embedded human colon adenocarcinoma tissue stained for Smad4 using ab228205 in immunohistochemical analysis.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Smad4 antibody [SP306]  
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**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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