abcam

ab57573

Anti-SMURF1 antibody [1D7]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human SMURF1 aa 150 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link Q9HCE7
Carrier free	Yes
Clone number	1D7
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information SMURF1

Function	E3 ubiquitin-protein ligase that acts as a negative regulator of BMP signaling pathway. Mediates ubiquitination and degradation of SMAD1 and SMAD5, 2 receptor-regulated SMADs specific for the BMP pathway. Promotes ubiquitination and subsequent proteasomal degradation of TRAF family members and RHOA. Promotes ubiquitination and subsequent proteasomal degradation of MAVS (PubMed:23087404). Acts as an antagonist of TGF-beta signaling by ubiquitinating TGFBR1 and targeting it for degradation (PubMed:21791611). Plays a role in dendrite formation by melanocytes (PubMed:23999003).

Storage

Shipped at conditions	Blue Ice
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

This product was changed from ascites to tissue culture supernatant on 15 May 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	SMURF1 also known as SMAD-specific E3 ubiquitin protein ligase 1 functions as an E3 ubiquitin ligase involved in the targeted degradation of proteins. This protein weighs approximately 72 kDa and expresses primarily in various human tissues including bone lung and kidney. SMURF1 plays an essential role in regulating protein turnover by tagging substrates for proteasomal degradation. It interacts with substrates through a C2 domain which aids in membrane localization and substrate recognition effectively controlling cellular protein levels and their functions.
Biological function summary	SMURF1 influences numerous cellular processes such as bone morphogenetic protein (BMP) signaling by regulating the availability and stability of signaling molecules. It does not function in isolation; it is a component of a ubiquitin-proteasome system complex that includes other cofactors assisting its activity. SMURF1 therefore affects cell growth differentiation and homeostasis by managing signal transduction pathways critical for these cellular activities.
Pathways	SMURF1 is involved in the BMP and Wnt signaling pathways. Both are fundamental for various biological activities including embryonic development and cell cycle regulation. Within these pathways SMURF1 influences the activity of SMAD6 and related proteins modulating their turnover and impact on downstream signaling processes. These pathways also interact with other cellular pathways but SMURF1's specific role remains concentrated on modulating protein ubiquitination events.

Associated diseases and disorders	SMURF1 has been linked to cancer and osteoporosis. Its dysregulation can disrupt normal cellular signaling contributing to tumorigenesis or impaired bone maintenance. In cancer its interaction with proteins such as SMAD7 can alter cell signaling promoting uncontrolled cell growth. In osteoporosis SMURF1's regulation of bone remodeling processes might be compromised leading to decreased bone mass and fragility. Understanding SMURF1's roles may open avenues for therapeutic interventions in these disorders.

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

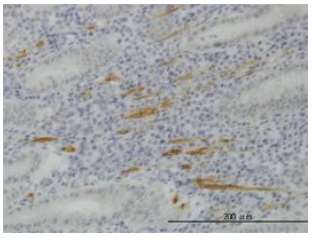
We do not recommend this combination. It is not covered by our product promise.

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.

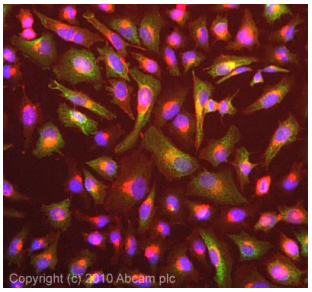
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-SMURF1 antibody [1D7] (ab57573)

SMURF1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-SMURF1 antibody

SMURF1 antibody (ab57573) used in immunohistochemistry at 2ug/ml on formalin fixed and paraffin embedded human stomach.
This image was generated using the ascites version of the product.

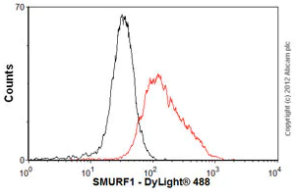


Immunocytochemistry/ Immunofluorescence - Anti-SMURF1 antibody [1D7] (ab57573)

SMURF1 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-SMURF1 antibody

ICC/IF image of ab57573 stained HeLa cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1%BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab57573, 5µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

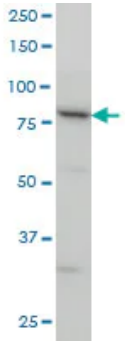
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-SMURF1 antibody [1D7] (ab57573)

SMURF1 Flow Cytometry staining using mouse Anti-SMURF1 antibody

Overlay histogram showing MCF7 cells stained with ab57573 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab57573, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This image was generated using the ascites version of the product.



Western blot - Anti-SMURF1 antibody [1D7] (ab57573)

SMURF1 Western blot staining using mouse Anti-SMURF1 antibody

SMURF1 antibody (ab57573) at 1ug/lane + HeLa cell lysate at 25ug/lane.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-SMURF1 antibody [1D7] (ab57573)

Predicted band size: 86 kDa

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