abcam

ab55676

Anti-Nodal antibody [5C3]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human Nodal homolog aa 250 to C-terminus. The exact immunogen used to generate this antibody is proprietary information. Database link Q96S42
Carrier free	Yes
Clone number	5C3
Purification technique	Affinity purification Protein A
Light chain type	kappa
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information Nodal homolog

Function	Essential for mesoderm formation and axial patterning during embryonic development.

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 28th 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	Nodal also known as NODAL protein is a growth factor belonging to the transforming growth factor beta (TGF-β) superfamily with a molecular mass of approximately 44 kDa. This protein acts mechanically by transmitting signals through receptors on the cell surface initiating intracellular responses critical for embryonic development. Nodal expression occurs mostly in early embryonic tissues including the primitive streak and visceral endoderm. In adults it shows limited expression yet you might find it in some cancer cells. Nodal antibodies can be used for research to study its expression patterns and roles in various contexts.
Biological function summary	Nodal plays an important role in processes such as mesoderm formation and left-right body axis specification. It is part of a signaling complex that includes co-factors like Cripto and receptor heteromers composed of Activin receptors and SMAD proteins. These interactions initiate cascades influencing cell fate decisions impacting diverse biological activities like cell proliferation and migration. Antinodal mechanisms act to modulate these signals ensuring proper gradient formation necessary for precise developmental outcomes.
Pathways	Nodal integrally fits within the TGF-β signaling pathway and the Wnt signaling pathway. It closely interacts with proteins such as Lefty and PITX2. The TGF-β pathway involves multiple SMAD proteins directing Nodal signals toward gene expression changes important for embryonic patterning. Meanwhile interactions with the Wnt pathway provide cross-talk opportunities that can affect a cell's destiny highlighting Nodal's broad regulatory capacity in embryogenesis.
Associated diseases and disorders	Nodal is implicated in conditions like cancer and congenital abnormalities. In cancer aberrant Nodal expression connects with increased tumor aggressiveness and metastasis often through pathways involving proteins such as E-cadherin and N-cadherin which are important for cell adhesion and motility. In congenital disorders mutations or dysregulation in Nodal signaling can result in defects like holoprosencephaly often tied to the Hedgehog signaling pathway illustrating its critical developmental contributions.

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

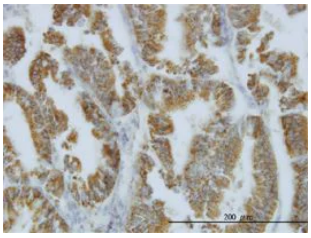
We do not recommend this combination. It is not covered by our product promise.

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.

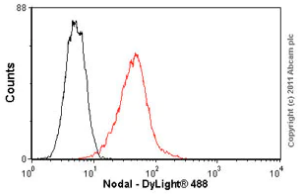
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Nodal antibody [5C3] (ab55676)

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

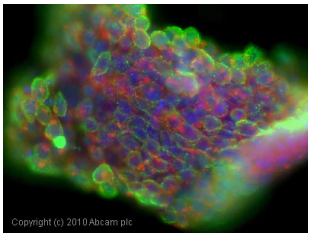
Nodal antibody (ab55676) used in immunohistochemistry at 3ug/ml on formalin fixed and paraffin embedded human endometrium cancer.
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-Nodal antibody [5C3] (ab55676)

Nodal Flow Cytometry staining using mouse Anti-Nodal antibody

Overlay histogram showing HEK293 cells stained with ab55676 (red line). The cells were fixed with 4% paraformaldehyde (10 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 (ab55676, 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 IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HEK293 cells fixed with 100% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.
This image was generated using the ascites version of the product.



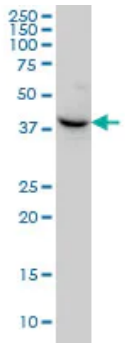
Immunocytochemistry/ Immunofluorescence - Anti-Nodal antibody [5C3] (ab55676)

Nodal Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Nodal antibody

ICC/IF image of ab55676 stained mouse embryonic stem 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 (ab55676, 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.



Western blot - Anti-Nodal antibody [5C3] (ab55676)

Nodal Western blot staining using mouse Anti-Nodal antibody

Nodal antibody (ab55676) 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-Nodal antibody [5C3] (ab55676)

Predicted band size: 40 kDa

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