abcam

Product datasheet

Anti-Asporin antibody ab31303

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Overview

Product name	Anti-Asporin antibody
Description	Goat polyclonal to Asporin
Host species	Goat
Tested applications	**Suitable for:** WB, ICC
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Synthetic peptide corresponding to Human Asporin aa 150-250 (internal sequence). Run BLAST with ExPASy Run BLAST with NCBI
Positive control	WB: Human tonsil, human uterus, mouse and rat skeletal muscle tissue lysates. ICC: HeLa cells.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	pH: 7.30 Preservative: 0.02% Sodium azide Constituents: 99% Tris buffered saline, 0.5% BSA
Purity	Immunogen affinity purified
Purification notes	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide
Clonality	Polyclonal
Isotype	IgG

Applications

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The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab31303 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
WB	★★★☆☆ (2)	Use a concentration of 1 - 3 µg/ml. Detects a band of approximately 40 kDa (predicted molecular weight: 43 kDa). 1 hour primary incubation is recommended for this product.
ICC		Use at an assay dependent concentration.

Target

Function Negatively regulates periodontal ligament (PDL) differentiation and mineralization to ensure that the PDL is not ossified and to maintain homeostasis of the tooth-supporting system. Inhibits BMP2-induced cytodifferentiation of PDL cells by preventing its binding to BMPR1B/BMP type-1B receptor, resulting in inhibition of BMP-dependent activation of SMAD proteins (By similarity). Critical regulator of TGF-beta in articular cartilage and plays an essential role in cartilage homeostasis and osteoarthritis (OA) pathogenesis. Negatively regulates chondrogenesis in the articular cartilage by blocking the TGF-beta/receptor interaction on the cell surface and inhibiting the canonical TGF-beta/Smad signal. Binds calcium and plays a role in osteoblast-driven collagen biomineralization activity.

Tissue specificity Higher levels in osteoarthritic articular cartilage, aorta, uterus. Moderate expression in small intestine, heart, liver, bladder, ovary, stomach, and in the adrenal, thyroid, and mammary glands. Low expression in trachea, bone marrow, and lung. Co-localizes with TGFB1 in chondrocytes within osteoarthritic (OA) lesions of articular cartilage.

Involvement in disease Genetic variations in ASPN are associated with susceptibility to osteoarthritis type 3 (OS3) [MIM:607850]; also known as osteoarthritis of knee/hip. Osteoarthritis is a degenerative disease of the joints characterized by degradation of the hyaline articular cartilage and remodeling of the subchondral bone with sclerosis. Clinical symptoms include pain and joint stiffness often leading to significant disability and joint replacement. Note=Susceptibility to osteoarthritis is conferred by a triplet repeat expansion polymorphism. ASPN allele having 14 aspartic acid repeats in the N-terminal region of the protein (D14), is overrepresented relative to the common allele having 13 aspartic acid repeats (D13). The frequency of the D14 allele increases with disease severity. The D14 allele is also overrepresented in individuals with hip osteoarthritis.
Defects in ASPN are a cause of susceptibility to intervertebral disk disease (IDD) [MIM:603932]. A common musculo-skeletal disorder caused by degeneration of intervertebral disks of the lumbar spine. It results in low-back pain and unilateral leg pain. Note=Susceptibility to intervertebral disk disease, particularly lumbar disk degeneration, is conferred by a triplet repeat expansion polymorphism. ASPN allele having 14 aspartic acid repeats in the N-terminal region of the protein (D14), is associated with the disorder in some populations (PubMed:18304494).

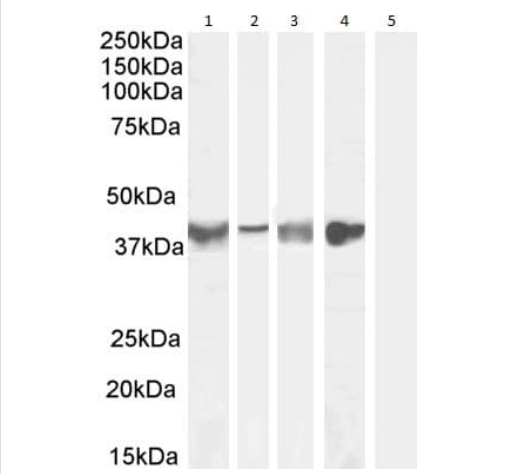
Sequence similarities Belongs to the small leucine-rich proteoglycan (SLRP) family. SLRP class I subfamily.
Contains 11 LRR (leucine-rich) repeats.
Contains 1 LRRNT domain.

Domain The LRR 5 repeat can inhibit BMP2-induced cytodifferentiation and may be involved in the interaction with BMP2 (By similarity). The repeats LRR 10, LRR 11 and LRR 12 are involved in binding type I collagen. The poly-Asp region is involved in binding calcium.

Post-translational There is no serine/glycine dipeptide sequence expected for the attachment of O-linked

modifications	glycosaminoglycans and this is probably not a proteoglycan. The O-linked polysaccharide on 54-Ser is probably the mucin type linked to GalNAc. The N-linked glycan at Asn-282 is composed of variable structures of GlcNAc, mannose, fucose, HexNAc and hexose.
Cellular localization	Secreted > extracellular space > extracellular matrix.

Images



Western blot - Anti-Asporin antibody (ab31303)

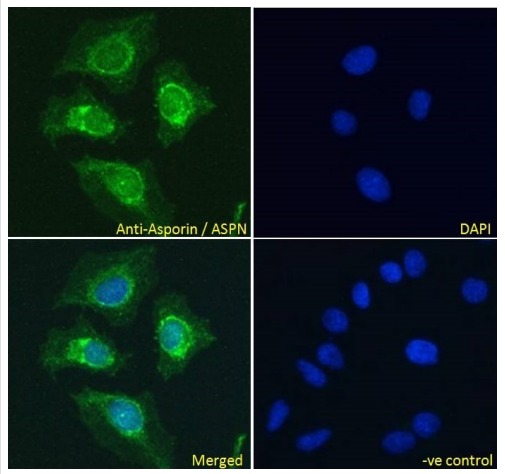
Lanes 1 & 3 & 5 : Anti-Asporin antibody (ab31303) at 0.1 µg/ml
Lane 2 : Anti-Asporin antibody (ab31303) at 0.3 µg/ml
Lane 4 : Anti-Asporin antibody (ab31303) at 1 µg/ml

Lane 1 : Human tonsil tissue lysate
Lane 2 : Human uterus tissue lysate
Lane 3 : Mouse skeletal muscle tissue lysate
Lane 4 : Rat skeletal muscle tissue lysate
Lane 5 : Human cerebellum tissue lysate

Lysates/proteins at 35 µg per lane.

Predicted band size: 43 kDa

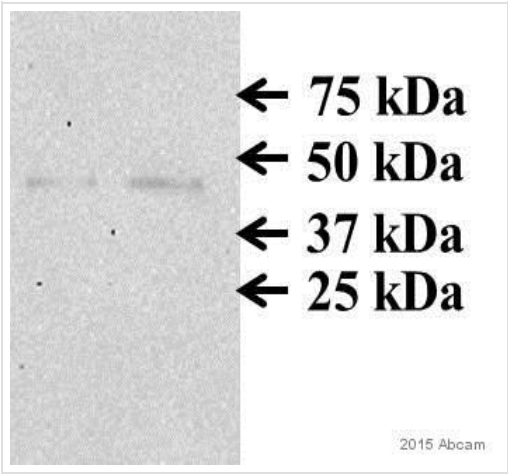
35µg protein in RIPA buffer. Detected by chemiluminescence.



Immunocytochemistry - Anti-Asporin antibody (ab31303)

Immunocytochemistry analysis of paraformaldehyde fixed HeLa cells, permeabilized with 0.15% Triton. Incubated with ab31303 for 1 hour (10µg/ml) followed by Alexa Fluor® 488 secondary antibody (4µg/ml), showing nuclear membrane staining. The nuclear stain is DAPI (blue).

Negative control: Unimmunized goat IgG (10µg/ml) followed by Alexa Fluor® 488 secondary antibody (4µg/ml).



Western blot - Anti-Asporin antibody (ab31303)

This image is courtesy of an anonymous Abreview

All lanes : Anti-Asporin antibody (ab31303) at 1/1000 dilution

All lanes : Human osteosarcoma cell line whole lysate

Lysates/proteins at 30 µg per lane.

Secondary

All lanes : HRP-conjugated anti-goat IgG polyclonal at 1/2000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 43 kDa

Observed band size: 42 kDa

Exposure time: 1 minute

Blocked with 5% milk for 1 hour at 27°C.

Incubated with the primary antibody diluted in blocking buffer for 12 hours at 4°C.

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