abcam

ab278660

FITC Anti-Lamin A + Lamin C (phospho S22) antibody [LaminACS22-CF12]

Recombinant

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	FITC
Excitation/Emission	Ex: 495nm, Em: 519nm
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 0.2% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human LMNA pS22. The exact immunogen used to generate this antibody is proprietary information. Database link P02545
Clone number	LaminACS22-CF12
Purification technique	Affinity purification Protein A/G
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human

Dilution info	5 µL for 10^6 Cells
Notes	-

Target data

See full target information LMNA phospho S22

Function

Lamin-A/C. Lamins are intermediate filament proteins that assemble into a filamentous meshwork, and which constitute the major components of the nuclear lamina, a fibrous layer on the nucleoplasmic side of the inner nuclear membrane (PubMed:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:2188730, PubMed:22431096, PubMed:2344612, PubMed:23666920, PubMed:24741066, PubMed:31434876, PubMed:31548606, PubMed:37788673, PubMed:37832547). Lamins provide a framework for the nuclear envelope, bridging the nuclear envelope and chromatin, thereby playing an important role in nuclear assembly, chromatin organization, nuclear membrane and telomere dynamics (PubMed:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:22431096, PubMed:23666920, PubMed:24741066, PubMed:31548606, PubMed:37788673, PubMed:37832547). Lamin A and C also regulate matrix stiffness by conferring nuclear mechanical properties (PubMed:23990565, PubMed:25127216). The structural integrity of the lamina is strictly controlled by the cell cycle, as seen by the disintegration and formation of the nuclear envelope in prophase and telophase, respectively (PubMed:2188730, PubMed:2344612). Lamin A and C are present in equal amounts in the lamina of mammals (PubMed:10080180, PubMed:10580070, PubMed:10587585, PubMed:10814726, PubMed:11799477, PubMed:12075506, PubMed:12927431, PubMed:15317753, PubMed:18551513, PubMed:18611980, PubMed:22431096, PubMed:23666920, PubMed:31548606). Also involved in DNA repair: recruited by DNA repair proteins XRCC4 and IFFO1 to the DNA double-strand breaks (DSBs) to prevent chromosome translocation by immobilizing broken DNA ends (PubMed:31548606). Required for normal development of peripheral nervous system and skeletal muscle and for muscle satellite cell proliferation (PubMed:10080180, PubMed:10814726, PubMed:11799477, PubMed:18551513, PubMed:22431096). Required for osteoblastogenesis and bone formation (PubMed:12075506, PubMed:15317753, PubMed:18611980). Also prevents fat infiltration of muscle and bone marrow, helping to maintain the volume and strength of skeletal muscle and bone (PubMed:10587585). Required for cardiac homeostasis (PubMed:10580070, PubMed:12927431, PubMed:18611980, PubMed:23666920). Prelamin-A/C. Prelamin-A/C can accelerate smooth muscle cell senescence (PubMed:20458013). It acts to disrupt mitosis and induce DNA damage in vascular smooth muscle cells (VSMCs), leading to mitotic failure, genomic instability, and premature senescence (PubMed:20458013).

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Store in the dark

Notes

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	Lamin A and Lamin C also known as lamin A/C are proteins encoded by the LMNA gene. These proteins are key components of the nuclear envelope where they provide structural support and maintain the shape of the nucleus. The lamin A/C molecule has a molecular weight of approximately 60-70 kDa. Expression of lamin A and lamin C occurs predominantly in differentiated cells where these proteins integrate into the nuclear lamina alongside other lamin molecules like lamin B. Lamin A alone sometimes referred to by designations like 4C11 plays a significant role in mechanical support at a molecular level.
Biological function summary	Lamin A/C proteins play a role in maintaining nuclear stability chromosome organization and gene regulation. They are part of a complex network within the nuclear lamina that includes interactions with proteins and DNA. Lamin A with a molecular weight distinct from other lamins participates in assembling this supportive matrix and contributes to DNA maintenance and repair processes. Their interaction with chromatin and gene expression regulation emphasizes their influence on important cellular functions.
Pathways	Lamin A/C proteins engage in the mechanosensory signaling and DNA damage response pathways. They interact with pathways involving the nuclear envelope structure and have connections to proteins like emerin and nuclear actin. Lamin A's role in these pathways supports its involvement in responding to mechanical stress and preserving genomic integrity highlighting its integration with these cellular processes.

Associated diseases and disorders	Mutations in lamin A/C are linked to disorders such as Hutchinson-Gilford Progeria Syndrome and Emery-Dreifuss Muscular Dystrophy. These conditions highlight the importance of lamin A/C in cellular stability and nuclear integrity. Proteins such as emerin often relate to lamin A/C in these diseases as disruptions to their interactions can lead to compromised nuclear function and disease phenotypes.

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

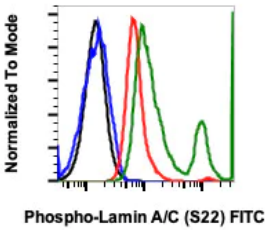
We do not recommend this combination. It is not covered by our product promise.

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.

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1 product image



Flow Cytometry - FITC Anti-Lamin A + Lamin C (phospho S22) antibody [LaminACS22-CF12] (ab278660)

Lamin A + Lamin C (phospho S22) Flow Cytometry staining using rabbit Anti-Lamin A + Lamin C (phospho S22) antibody

Flow cytometric analysis of Hela cells untreated (red) or treated with nocadozole (green) using ab278660, or concentration-matched Rabbit (G9) mAb IgG Isotype Control (FITC Conjugate) for cells untreated (black) or treated with nocodazole (blue).

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