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ProductInformation

Anti-Lamin A (C-terminal)
produced in rabbit, affinity isolated antibody

Catalog Number **L1293**

Product Description

Anti-Lamin A (C-terminal) is developed in rabbit using a synthetic peptide corresponding to amino acid residues 598-611 of human lamin A with a C-terminal added cysteine, conjugated to KLH, as immunogen. The corresponding sequence differs by one amino acid in rat, by three amino acids in mouse, and by a gap of one amino acid in both rat and mouse lamin A. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Lamin A recognizes human, rat, and mouse lamin A. Applications include indirect immunofluorescence and immunoblotting (~ 70 kDa). Additional bands at 45-50 kDa may appear in some preparations, which may represent the cleaved fragments of lamin A. The antibody does not recognize lamin C. Detection of the lamin A bands by immunoblotting is specifically inhibited with the immunizing peptide.

Lamin A is a structural protein of the nuclear lamina. The nuclear lamina is a meshwork of intermediate filaments that underlies the inner face of the nuclear envelope.[1] The major components of the nuclear lamina are the lamins that may be classified into two types, A and B. Both A- and B- type lamins are characterized by an α-helical rod domain to enable assembly into filaments, a nuclear localization sequence, and a carboxy-terminal CAAX box isoprenylation sequence for nuclear membrane targeting.[2] A-type lamins, lamin A and lamin C, are products of a single gene, *LMNA,* which are produced by alternative splicing, resulting in proteins of 664 and 572 amino acids, respectively.[3] The first 566 amino acids of lamin A and C are identical. Prelamin A, the precursor of lamin A, has 98 unique amino acids and is farnesylated at its carboxy terminus after synthesis. The last 18 amino acids, which contain the farnesyl group, are removed by an endoproteolytic cleavage, producing the mature lamin A.[4]

Lamins are expressed in most somatic cells. They interact with integral proteins of the inner membrane of the nuclear envelope, such as LAPs 1 and 2 (lamina-associated polypeptides), LBR (lamin B receptor) and emerin.[5] They also interact with chromatin and nuclear pore complexes.[4]

Lamin A is cleaved into a 47 kDa fragment during apoptosis. Lamin A cleavage seems to be essential for chromatin condensation and nuclear disassembly in apoptosis.[2,6] Mutations in lamin A and C have been linked to a variety of rare human diseases including muscular dystrophy, lipodystrophy, cardiomyopathy, neuropathy, and progeroid syndromes (collectively termed laminopathies) and to premature aging (Hutchinson-Gilford progeria syndrome).[7,8] Most diseases arise from dominant, missense mutations.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile
Immunoblotting: a working concentration of 0.1-0.2 µg/mL is recommended using human HeLa nuclear extract and a chemiluminescence detection reagent.

Indirect immunofluorescence: a working antibody concentration of 1-2 µg/mL is recommended using human HeLa, rat NRK, and mouse 3T3 cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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