Product Information

Anti-Lamin A, Mature Antibody, Mouse Monoclonal

Clon 4A4, Purified from Hybridoma Cell Culture

SAB4200420

Product Description

Anti-Lamin A, mature (mouse IgG1 isotype) is derived from the hybridoma 4A4 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to the C-terminus of mature human Lamin A (GeneID: 4000). The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Cat. No. ISO2). The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Anti-Lamin A, mature recognizes human Lamin A and does not recognize Lamin C. The antibody may be used in several immunochemical techniques including immunoblotting (~ 72 kDa) and immunofluorescence.[1]

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.[2] 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.[3]

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.[4] They also interact with chromatin and nuclear pore complexes.[5]

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.[6] 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.[5] Lamin A is cleaved into a 47 kDa fragment during apoptosis. This cleavage seems to be essential for chromatin condensation and nuclear disassembly in apoptosis.[3,7] 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).[8,9] 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 as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze at −20 °C 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 dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.25-0.5 µg/mL is recommended using whole extracts of human HeLa cells.
Immunofluorescence: a working concentration of 0.25-0.5 µg/mL is recommended using human HeLa cells.

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

References

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