

Lamin B1

Cat.No. 404 013; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: not tested yet ICC: 1 : 500 IHC: not tested yet IHC-P/FFPE: 1 : 1000
Immunogen	Synthetic peptide corresponding to AA 8 to 19 from human LaminB1 (UniProt Id: P20700)
Reactivity	Reacts with: human (P20700), pig. No signal: mouse (P14733), rat (P70615). Other species not tested yet.
Specificity	specific for Lamin B1

TO BE USED IN VITRO / FOR RESEARCH ONLY NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Lamin B1 (LMNB1) is an intermediate filament-type protein of the nuclear lamina and is ubiquitously expressed throughout development. It plays important roles in many cellular processes like the distribution of heterochromatin and the regulation of gene expression and splicing. The maintenance of LMNB1 protein levels is required for DNA replication and repair and thus mutations in B-type lamins are usually lethal.

Duplication of the LMNB1 gene causes adult-onset autosomal-dominant leukodystrophy (ADLD), a rare neurological disorder in which overexpression of LMNB1 causes progressive central nervous system demyelination. Improper Lamin B1 expression is often present in tumor cells and decreased levels are observed for example in colon cancer, breast cancer and B-cell malignancies. Lamin B1 loss is also a senescence-associated biomarker and distinguishes senescent from proliferating cells in pre-neoplastic lesions or marks senescent cells in various age-related pathologies.

These antibody are suited to distinguish murine from human cells in humanized mouse models.

Selected General References

SEPT12/SPAG4/LAMINB1 complexes are required for maintaining the integrity of the nuclear envelope in postmeiotic male germ cells.
Yeh CH, Kuo PL, Wang YY, Wu YY, Chen MF, Lin DY, Lai TH, Chiang HS, Lin YH
PloS one (2015) 10(3): e0120722.

Lamin B1 regulates somatic mutations and progression of B-cell malignancies.
Klymenko T, Bloehdorn J, Bahlo J, Robrecht S, Akyuzhanova G, Cox K, Estenfelder S, Wang J, Edelmann J, Strefford JC, Wojdacz TK, et al.
Leukemia (2018) 32(2): 364-375.

Role of lamin b1 in chromatin instability.
Butin-Israeli V, Adam SA, Jain N, Otte GL, Neems D, Wiesmüller L, Berger SL, Goldman RD
Molecular and cellular biology (2015) 35(5): 884-98.

The role of lamin B1 for the maintenance of nuclear structure and function.
Camps J, Erdos MR, Ried T
Nucleus (Austin, Tex.) (2015) 6(1): 8-14.

Redistribution of the Lamin B1 genomic binding profile affects rearrangement of heterochromatic domains and SAHF formation during senescence.
Sadaie M, Salama R, Carroll T, Tomimatsu K, Chandra T, Young AR, Narita M, Pérez-Mancera PA, Bennett DC, Chong H, Kimura H, et al.
Genes & development (2013) 27(16): 1800-8.

The clinicopathological significance of lamin A/C, lamin B1 and lamin B receptor mRNA expression in human breast cancer.
Wazir U, Ahmed MH, Bridger JM, Harvey A, Jiang WG, Sharma AK, Mokbel K
Cellular & molecular biology letters (2013) 18(4): 595-611.

Lamin B1 loss is a senescence-associated biomarker.
Freund A, Laberge RM, Demaria M, Campisi J
Molecular biology of the cell (2012) 23(11): 2066-75.

The integrity of a lamin-B1-dependent nucleoskeleton is a fundamental determinant of RNA synthesis in human cells.
Tang CW, Maya-Mendoza A, Martin C, Zeng K, Chen S, Feret D, Wilson SA, Jackson DA
Journal of cell science (2008) 121(Pt 7): 1014-24.

Lamin B1 is required for mouse development and nuclear integrity.
Vergnes L, Péterfy M, Bergo MO, Young SG, Reue K
Proceedings of the National Academy of Sciences of the United States of America (2004) 101(28): 10428-33.

Decreased and aberrant nuclear lamin expression in gastrointestinal tract neoplasms.
Moss SF, Krivosheyev V, de Souza A, Chin K, Gaetz HP, Chaudhary N, Worman HJ, Holt PR
Gut (1999) 45(5): 723-9.

Binding of matrix attachment regions to lamin B1.
Ludérus ME, de Graaf A, Mattia E, den Blaauwen JL, Grande MA, de Jong L, van Driel R
Cell (1992) 70(6): 949-59.

Teratocarcinoma stem cells and early mouse embryos contain only a single major lamin polypeptide closely resembling lamin B.
Stewart C, Burke B
Cell (1987) 51(3): 383-92.