

Publication**Assembly and cell cycle dynamics of the nuclear lamina****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 59423**Author(s)** Nigg, E A**Author(s) at UniBasel** [Nigg, Erich](#) ;**Year** 1992**Title** Assembly and cell cycle dynamics of the nuclear lamina**Journal** Seminars in cell biology**Volume** 3**Number** 4**Pages / Article-Number** 245-53

The nuclear lamina is a karyoskeletal structure composed of intermediate filament type proteins. It underlies the inner nuclear membrane and confers mechanical stability to the nuclear envelope. In addition, it interacts with chromatin and may thereby participate in determining the three-dimensional organization of the interphase nucleus. During mitosis, the nuclear lamina is transiently disassembled, most probably through hyperphosphorylation of lamin proteins by the protein kinase p34cdc2, a key regulator of the eukaryotic cell cycle. Mitotic disassembly of the lamina is necessary but not sufficient for nuclear envelope breakdown. Electron microscopic analyses have begun to provide insights into the principles that govern lamina assembly in vitro, and sequence motifs required for targeting newly synthesized lamins to the nuclear envelope have been identified. Of particular interest, lamins were shown to undergo a type of hydrophobic modification known as isoprenylation. Finally, recent studies addressing the nature of lamin-chromatin interactions may provide the basis for elucidating the role of lamins in organizing the distribution of interphase chromatin.

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