

Publication**Active cyclin B1-Cdk1 first appears on centrosomes in prophase****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 59341**Author(s)** Jackman, Mark; Lindon, Catherine; Nigg, Erich A; Pines, Jonathon**Author(s) at UniBasel** [Nigg, Erich](#) ;**Year** 2003**Title** Active cyclin B1-Cdk1 first appears on centrosomes in prophase**Journal** Nature Cell Biology**Volume** 5**Number** 2**Pages / Article-Number** 143-8

Cyclin B1-Cdk1 is the key initiator of mitosis, but when and where activation occurs has not been precisely determined in mammalian cells. Activation may occur in the nucleus or cytoplasm, as just before nuclear envelope breakdown, Polo-like kinase1 (Plk1) is proposed to phosphorylate cyclin B1 in its nuclear export sequence (NES), to trigger rapid nuclear import. We raised phospho-specific antibodies against cyclin B1 that primarily recognise the active form of the complex. We show that cyclin B1 is initially phosphorylated on centrosomes in prophase and that Plk1 phosphorylates cyclin B1, but not in the NES. Furthermore, phosphorylation by Plk1 does not cause cyclin B1 to move into the nucleus. We conclude that cyclin B1-Cdk1 is first activated in the cytoplasm and that centrosomes may function as sites of integration for the proteins that trigger mitosis.

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