Cyclin dependent kinase 2

The protein encoded by this gene is a member of the cyclin-dependent kinase family of Ser/Thr protein kinases. This protein kinase is highly similar to the gene products of S. cerevisiae cdc28, and S. pombe cdc2, also known as Cdk1 in humans. It is a catalytic subunit of the cyclin-dependent kinase complex, whose activity is restricted to the G1-S phase of the cell cycle, and is essential[citation needed] for the G1/S transition. This protein associates with and is regulated by the regulatory subunits of the complex including cyclin E or A. Cyclin E binds G1 phase Cdk2, which is required for the transition from G1 to S phase while binding with Cyclin A is required to progress through the S phase. Its activity is also regulated by phosphorylation. Two alternatively spliced variants and multiple transcription initiation sites of this gene have been reported.

The role of this protein in G1-S transition has been recently questioned as cells lacking Cdk2 are reported to have no problem during this transition.