

Cell cycle regulatory protein p27KIP1 is a substrate and interacts with the protein kinase CK2

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The protein kinase CK2 is constituted by two catalytic (? and/or ??) and two regulatory (?) subunits. CK2 phosphorylates more than 300 proteins with important functions in the cell cycle. This study has looked at the relation between CK2 and p27KIP1, which is a regulator of the cell cycle and a known inhibitor of cyclin-dependent kinases (Cdk). We demonstrated that in vitro recombinant *Xenopus laevis* CK2 can phosphorylate recombinant human p27KIP1, but this phosphorylation occurs only in the presence of the regulatory ? subunit. The principal site of phosphorylation is serine-83. Analysis using pull down and surface plasmon resonance (SPR) techniques showed that p27KIP1 interacts with the ? subunit through two domains present in the amino and carboxyl ends, while CD spectra showed that p27KIP1 phosphorylation by CK2 affects its secondary structure. Altogether, these results suggest that p27KIP1 phosphorylation by CK2 probably involves a docking event mediated by the CK2? subunit. The p