

The casein kinase 1 γ gene of *Drosophila melanogaster* is developmentally regulated and the kinase activity of the protein induced by DNA damage

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We report the molecular cloning and characterisation of the first CK1 (casein kinase) gene of *Drosophila melanogaster* (dmCK1). The protein sequence (DMCK1) shares significant homology with other mammalian CK1 protein kinases of the γ sub-class. The dmCK1 gene is expressed only in adult females and during early embryonic development as a single transcript. Western blot analysis of total protein extracts of different stages of development show that the gene product is likewise present during early embryogenesis and in adult females. Kinase activity studies show that DMCK1 is active when in vitro translated but inactive when immunoprecipitated from total early embryo extracts. However, after dephosphorylation treatment the immunoprecipitates show high kinase activity. More significantly, DMCK1 kinase activity present in the immunoprecipitates can be specifically activated by γ -irradiation of early embryos. Also, when DMCK1 is immunoprecipitated after irradiation it appears to undergo phos