Expression of the Subunits of Protein Kinase CK2 During Oogenesis in Xenopus laevis

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Northern?blot analysis of RNAs from different tissues demonstrated that the mRNA for the protein kinase CK2? subunit is very abundant in the ovary of Xenopus laevis. The competitive reverse?PCR technique has been used to quantitate the mRNA for both CK2? and CK2? subunits during oogenesis. The results obtained using eight different animals consistently show an increment of 2?3?fold in the mRNA for both subunits in vitellogenic oocytes (stages II?VI). Each stage?VI oocyte contains approximately 5 × 10?7 molecules CK2? mRNA and 1 × 10?7 molecules CK2? mRNA. These amounts are considerably higher than many other mRNAs analyzed in these cells. Activity measurements of CK2 using casein or a specific model peptide revealed increments of about 10?12?fold during oogenesis, and also indicated that the amount of enzyme in the nucleus accounted for 15?30% of the total enzyme in the oocyte at all stages. Western?blot analysis of CK2? indicated that the amount of this protein subunit also increased