

Conditions affecting protein synthesis in amphibian oocytes

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The endogenous protein synthesis of *Xenopus laevis* and *Calyptocephalella caudiverbera* oocytes was studied by measuring the incorporation into acid-precipitable material of radioactive amino acids placed in the extracellular medium. Large differences of incorporation into protein were observed by using different labeled amino acids. For example, it was found that radioactive aspartic acid or glutamic acid was very poorly incorporated at concentrations under 0.1 mM. These differences are due to differences in uptake constants and in the internal pools of free amino acids which are very large for the acidic amino acids. Both types of oocytes behaved similarly with respect to magnesium ion concentration, temperature optimum and inhibitors of protein synthesis. They differed however in sensitivity to pH since *Xenopus laevis* oocyte protein synthesis was twofold higher at pH 8.5 than at pH 7 while *Calyptocephalella caudiverbera* oocytes showed no difference. Isolation of oocyte germinal vesicle