

Inhibition by phenothiazine derivatives of the adenylate cyclase of amphibian oocytes

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The adenylate cyclase activity of membranes of *Xenopus laevis* oocytes and follicle cells was affected by the presence of 2-chloro-10-(3-aminopropyl)phenothiazine (CAPP) and two other antipsychotic drugs, fluphenazine and penfluridol. CAPP, at concentrations of 10 and 100 μ M, had opposite effects on the activation of the oocyte adenylate cyclase by effectors that act through the G/F regulatory subunit. Under these conditions, the drug stimulated the activation by fluoride and drastically inhibited the activation by guanyl-5'-yl-imidodiphosphate [Gpp(NH)p] and by cholera toxin and GTP. The activity of the catalytic subunit measured in the presence of either Mn²⁺- or forskolin was not affected by 100 μ M CAPP. However, concentrations of this drug above 100 μ M inhibited the adenylate cyclase activated by fluoride or by forskolin and also inhibited the activity of a calmodulin-independent cyclic nucleotide phosphodiesterase present in the same oocyte membrane preparation. Oocyte adenylate cyc