

Effects of anisomycin on brain protein synthesis and passive avoidance learning in newborn chicks

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The effects of anisomycin (ANM) on newborn chicks have been studied with respect to brain protein synthesis, growth, EEG, toxicity, and several passive avoidance learning tasks. It was found that intracerebral ANM (80 nmol) gave a maximum inhibition of brain protein synthesis of 30%, while a combination of subcutaneous (10 μ mol; 53 mg/kg) plus intracerebral (80 nmol; 21 μ g) ANM, inhibited by 91% in the first 2 hr and by 75% in the subsequent 2 hr period. Cycloheximide (CXM) also in combined injections at the same doses as ANM, inhibited by 97% in the 4 hr that followed injection. However, all the CXM-injected chicks were dead by 18 hr, while the lethality of ANM did not differ from that of saline. ANM also did not affect EEG measured at 1, 3, 5, or 24 hr following the subcutaneous plus intracerebral injections, nor did ANM affect body or brain growth curves or brain protein accretion. In the learning experiments, animals were initially trained to peck at water-coated metal spheres (typ