

duramycin, duramycin did not change the efficiency of the pump. At higher concentration (about 30 μ g of duramycin per 20 μ g of reconstituted enzyme), the mixture became turbid, and Na⁺-transport activity was inhibited (unpublished results).

The reversibility of the inhibitory effect of duramycin by phospholipids may be a clue to its mode of action. Asolecithin, PE, and PS, but not PC vesicles, became turbid when duramycin was added at low concentrations (5 μ g/mg of lipid). This result suggests that duramycin directly interacts with some phospholipids. The lubrol-solubilized dog kidney (Na⁺,K⁺)-ATPase was much more sensitive than the membranous preparation. It is therefore not clear whether the inhibitor interacts directly with the protein or whether it interferes with a specific protein-lipid interaction.

Duramycin inhibits the ATPase activity of clathrin-coated vesicles and of plasma membranes. It has little effect on the Ca²⁺-ATPase of sarcoplasmic reticulum and none on the F₁-ATPase of bovine heart mitochondria even at very high concentrations (Stone et al., 1984; Racker et al., 1984). It does, however, inhibit at high concentrations the ATPase activity of submitochondrial particles from bovine heart. The difference in susceptibility between F₁ and submitochondrial particles may be due to the curious association of the enzyme with an inhibitory mitochondrial protein and its reversal by phospholipids (Bulos & Racker, 1968). Thus, duramycin may have an inhibitory effect on mitochondrial ATPase similar to that of oligomycin. The remarkable specificity of the interaction between duramycin and lipids may therefore lend itself to further explorations of lipid-protein interactions.

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Registry No. Duramycin, 1391-36-2; ATPase, 9000-83-3; *p*-nitrophenylphosphatase, 9073-68-1.

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