striking contrast with serum proteins. The specific radioactivity of the serum proteins was highest in the globulin fraction and decreased in correlation with the decrease of molecular weights of the serum proteins in the globulin and albumin fractions.

The results indicate that the proteins of tissues that display a rapid rate of cell proliferation and/or rapid synthesis of proteins, hormones and antibodies (gastrointestinal epithelium, pancreas, thymus, spleen, liver) show a high affinity for assimilation of glucose carbon, in sharp contrast with the relatively low rates of assimilation of glucose carbon by heart or skeletal muscles. However, the brain proteins had a higher specific radioactivity than did the liver proteins.

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Activation of Membrane Adenosine Triphosphatase by Chelating Reagents and Phospholipids

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Solubilization of a microsomal fraction from brain tissue with deoxycholate removes most or all of the ouabain-inhibited ATPase* activity and subsequent addition of certain phospholipid dispersions, notably phosphatidylserine, partly restores this activity, suggesting that the ATPase consists of a phospholipid-protein complex (Tanaka & Abood, 1964; Fenster & Copenhaver, 1967; Wheeler & Whittam, 1970). However, this interpretation was rendered questionable by the observation that phosphatidylserine also activates the ouabain-sensitive ATPase of the particulate enzyme, untreated with deoxycholate (Wheeler & Whittam, 1970). An alternative interpretation is that phosphatidylserine activates by virtue of its ability to chelate endogenous ions, such as Ca^{2+} or Fe^{2+} , that inhibit the ATPase. To test this possibility the effects of both EDTA and EGTA on similar preparations from rabbit kidney have been examined and compared with the effect of phosphatidylserine.

In the absence of added phospholipid the mean ouabain-sensitive ATPase activities (in μmol of P_i

liberated/min per g of protein) of the particulate and solubilized preparations were 172 and 31 respectively, and both of those rates increased, to 273 and 278, when 0.2mm-phosphatidylserine was added. However, addition of 0.2mm-EGTA to the particulate enzymes similarly stimulated the ATPase, to 314; and with both EGTA and phosphatidylserine the activation was virtually identical, giving a value of 295. Thus EGTA effectively mimicked the activating effect of the phospholipid. In contrast, 0.2mm-EGTA increased the ouabain-sensitive ATPase activity of the solubilized enzymes from 31 to only 58, whereas the further addition of the same concentration of phosphatidylserine raised the activity to 332. Almost identical results were obtained when EDTA was substituted for EGTA, and when these reagents were added at a final concentration of 2mm, compared with only 0.2mm-phosphatidylserine.

Phosphatidylserine therefore appears to activate the membrane ATPase both by its chelating ability and, presumably, by forming a phospholipid-protein complex. Further, the chelating action accounts completely for its activation of the particulate ATPase, but not of the solubilized enzyme, so that the phospholipid-protein-complex concept of the ATPase system remains tenable. This conclusion is not affected if the chelators and the phosphatidylserine produce their effects by some direct action on the enzyme, rather than by chelating endogenous metal ions.

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Some Catalytic Properties of IRC-50 Arvin

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Arvin, an enzyme fraction isolated from the venom of *Agkistrodon rhodostoma* (Esnouf & Tunnah, 1967), is useful for producing controlled defibrination in patients requiring anticoagulant therapy. Arvin catalyses a limited proteolysis of fibrinogen to yield a readily dispersible fibrin clot (Ewart, Hatton, Basford & Dodgson, 1970); it has no effect on other clotting factors (Bell, Pitney & Goodwin, 1968; Sharp, Warren, Paxton & Allington, 1968; Bell, Bolton & Pitney, 1968). Chromatography of

* Abbreviations: ATPase, adenosine triphosphatase; EGTA, ethanedioxybis(ethylamine) - NNN'N' - tetraacetate.