phoretic mobilities in low-pH buffers are also produced. With resorcinol fed to germinating *Vicia faba* or *Pisum sativum* seeds the major acidic product yields *m*-hydroxyphenyl β -D-glucoside and P_i when treated with dilute alkali, and complete acid hydrolysis produces resorcinol, glucose and P_i in equimolar quantities. Feeding germinating seeds with resorcinol and [32 P] P_i results in incorporation of label into the compound. Methylation and hydrolysis gives 2,3,4-tri-*O*-methylglucose and hence the derivative would appear to *m*-hydroxyphenyl β -D-glucopyranoside 6'-phosphate. Analogous phosphorylated compounds are formed when higher-plant tissues are fed with other simple phenols, phenolic alcohols or phenolic aldehydes.

o-Hydroxybenzyl alcohol is converted into *o*-hydroxybenzyl β -D-glucoside 6'(?)-phosphate by plant tissues. A compound with similar chromatographic and electrophoretic properties occurs naturally in *Filipendula ulmaria* and in *Salix* spp.

Aerobacter aerogenes has been reported to utilize phenolic glucosides by a system involving phosphorylation followed by a hydrolytic cleavage of the products that is catalysed by specific 'phospho- β -glucosidases' (Schaeffer & Schenkein, 1968). It is possible that higher plants may metabolize phenolic glucosides by a similar mechanism with phosphorylation preceding hydrolysis and not vice versa.

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Aggregated States of Mitochondrial Structural Protein

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Recently there has been much interest in the category of proteins, termed 'structural' or 'organizer' proteins, that are thought to form the backbone of membranes (see, e.g., Lenaz, 1968; Criddle, 1969). Present opinion is that structural protein may be not a homogeneous species but a group of proteins of similar structure and physicochemical characteristics (Green, Haard, Lenaz & Silman, 1968; Lejsek & Lusena, 1969).

In sedimentation-velocity studies on mitochondrial structural protein solubilized in 0.1% sodium dodecyl sulphate (Criddle, Bock, Green & Tisdale, 1962) the protein sedimented as a single

symmetrical boundary, most preparations having a sedimentation coefficient of 1.9–2.2S. However, in some 20% of the preparations studied the sedimentation coefficient was rather higher (2.6–2.8S).

We have examined the sedimentation properties of mitochondrial structural protein prepared from rat liver by a method developed in this laboratory. Preparations were studied under a variety of conditions of detergent composition and concentration, buffer composition, temperature and pH, and the results reported are based on some 90 sedimentation-velocity experiments. For most of the studies the detergent used was sodium dodecyl sulphate.

Species of mitochondrial structural protein sedimenting at $s_{20,w}^0$ values of 2.6 and 3.4S were identified and also species sedimenting at 5.7, 8.3 and 11.5S, the present results on these latter not permitting extrapolation to infinite dilution. Tentative identification of a species sedimenting between 2.6 and 3.4S is reported, preliminary results suggesting that the 2.6S, 3.4S and intermediate form may represent different conformational forms of monomeric structural protein. In all experiments carried out the presence and proportion of aggregates of mitochondrial structural protein, favoured by low concentration of sodium dodecyl sulphate, was dependent on the conditions during solubilization; dissociation to smaller aggregates promoted by dilution was irreversible under the conditions used. Some 3.4S species was nearly always present in preparations containing aggregates, but at concentrations below 3.5mg/ml such preparations evidenced only the 3.4S species sedimenting as a single symmetrical boundary, as did the other monomeric species at all concentrations.

The amino acid composition of our structural protein preparation agrees closely with that reported by other workers for mitochondrial structural protein. Investigations as to the degree of heterogeneity of the preparation are in progress, the need to distinguish between possible heterogeneity of the structural protein and presence of aggregated species being borne in mind.

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