compositions of these species agreed with the data on soya-bean ribosome components reported by Ingle, Key & Holm (1965). The mitochondrial preparation, however, revealed two RNA species intermediate in size between the two major cytoplasmic ribosomal RNA components. The more prominent of the mitochondrial components was found to have a relatively low GC content.

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Specific Assay of Glycosulphatase Acting on Sulphate Esters of D-Glucose and of D-Galactose and on Mixed Substrates

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The oxidation of D-glucose by D-glucose oxidase from *Aspergillus niger* forms the basis of colorimetric methods for the determination of this sugar in biological fluids (Ogston, 1948). D-Galactose oxidase from *Dactylium dedroites*, another enzyme of high specificity, is used in the assay of D-galactose in a similar procedure (Cooper, Smith, Bacila & Medina, 1959; Roth, Segal & Bertole, 1965).

These procedures have been adapted to the assay of glycosulphatase to determine, specifically the activity against sulphate esters of D-glucose or D-galactose, and are particularly useful in mixed-substrate experiments. It has been shown that in each case 6-O-sulphate esters of D-glucose and D-galactose and sulphate ions do not interfere in the assay, and for liberation of hexose in the range 2–100 µg./ml. linear calibration curves are obtained. By using the two methods with D-glucose 6-O-sulphate and D-galactose 6-O-sulphate respectively as substrates, the activities and pH-activity curves

obtained were in good agreement with those obtained by the pH-stat method (Lloyd & Stuart, 1966; Lloyd & Fielder, 1967). The enzyme used was a partially purified glycosulphatase from *Patella vulgata* (Lloyd & Stuart, 1966). For this enzyme acting on the 6-O-sulphate esters of D-glucose and D-galactose respectively at pH 6.0, the following values were obtained: optimum substrate concentration, 0.04, 0.04 M; activity, 3295, 4035 units; K_m , 1.86, 28.3 mM. When, in the hexose oxidase methods of assay, *Patella* glycosulphatase was incubated with D-glucose 6-O-sulphate (0.04 M) together with D-galactose 6-O-sulphate (0.04 M) the following activities were recorded: 2729 (D-glucose oxidase assay) and 460 (D-galactose oxidase assay). These data suggest that a single enzyme is responsible for the desulphation of both sugars.

The view that a single enzyme is acting on both substrates is supported by other data including constancy in the ratio of activities for different preparations of the enzyme and identical pH optima, and by studies on some inhibitors.

Difficulties accompanying the use of D-glucose 6-O-sulphate as substrate for *Patella* glycosulphatase have been indicated earlier (Lloyd & Fielder, 1967). Although there is evidence that there are at least three sulphatases present in the initial extract from the viscera of *Patella vulgata* that act on carbohydrate sulphates, it is clear that the 6-O-sulphates of D-glucose and D-galactose are alternative substrates for the glycosulphatase under investigation.

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Desulphation of Chondroitin Sulphate by an Enzyme from *Patella vulgata*

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The viscera of *Patella vulgata* contains a glycosulphatase that is active against monosaccharide mono- and poly-sulphates (Lloyd, Lloyd & Owen, 1962; Lloyd & Stuart, 1966). Recently it has been shown that there is also present an enzyme that liberates inorganic sulphate from chondroitin