A Simple Procedure for the Preparation of Single Crystals of Orthorhombic Mercury(II)oxide

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The procedures described in the literature for the preparation of single crystals of orthorhombic mercury(II)oxide [1] have been found to be rather uncertain and give poor results. In connection with studies on the hexagonal modification of this substance a simple method was found for the synthesis of beautiful crystals of the orthorhombic form. One part of 0.1 M K_2HgI_4 was mixed with two parts of 10–13 M NaOH and poured into a gold tube which was covered with a gold lid. The tube was slid into a pyrex glass tube which was sealed and placed in an oven at 100–175°C for about 70 h.

The crystals appeared in the form of light red rods with lustrous faces of up to 2 mm extension. Amply exposed powder patterns obtained in a Guinier focusing camera did not show any reflexions not belonging to the pattern for orthorhombic mercury(II)oxide.

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Separation of Acid Mucopolysaccharides by Paper Electrophoresis

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The separation of acid mucopolysaccharides from various sources by means of paper electrophoresis has been reported by several investigators [1-4]. The conditions for the electrophoresis as well as the methods of locating the separated mucopolysaccharide fractions have differed in each particular case. For the purpose of investigating the mucopolysaccharide contents of mucous membranes a number of methods were tested, but no particular procedure was found to be entirely satisfactory. However, a system was developed which allowed a distinct separation of hyaluronic acid and chondroitin sulphate. This system represents a combination of some of the methods referred to above.

Methods. A box, similar to that described by Grassmann [5], was constructed from parts cut out of 0.5 cm thick Perspex acrylic sheet to serve as support for the paper.

The buffer solution employed was made by combining 100 ml of 0.9 M sodium chloride with 50 ml of 0.2 M phosphate buffer (pH 7.0) and diluting to a total volume of one liter with distilled water.

The paper used was Whatman No. 3 MM ilter paper for chromatography.

The electrophoresis was carried out at 160 V for 18 h at room temperature.

Prior to electrophoresis, a paper strip, 57 cm in length and 4 cm wide, was moistened with buffer from both ends to within 1 cm from the midline and blotted dry with filter paper. The paper was next placed in the box, and the vertical ends of the paper were dipped into the buffer. The horizontal stretch of the paper strip in position in the box was 40 cm. Buffer equilibration was allowed to proceed for 30 min. From 50 to 100 μl of a crude mucopolysaccharide mixture dissolved in the buffer were then applied along the midline to the wet paper. Another 30 min were allowed to pass before the current was connected.

Following electrophoresis, the paper strip was dried at 110°C for 30 min. Acid mucopolysaccharide fractions were next located in the manner described by Bera *et al.*[2] In order to obtain satisfactory results, however, it was necessary subsequent to the immersion of the paper in Cetavlon to wash it in hot running tap water for 45 min. The paper was then dried at 110°C for one hour, sprayed with the bromocresol purple reagent, and again dried at 110°C for 15 min.

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