

Aarhus, and to Professor Stig Veibel for their interest in this work and for valuable discussions.

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On the Hexosamine Component of Seromuroid

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Glucosamine has been shown by several authors to be a constituent of serum glycoproteins. Recent investigations at this institute have shown that 2-aminogalactose, chondrosamine, occurs together with sialic acid in submaxillary mucin, in gangliosides and in the acid glycoprotein of plasma^{1,2}. In the two former substances the only hexosamine obtained was chondrosamine. In the latter, chondrosamine formed the minor part of the hexosamine component, the major part consisting of glucosamine.

In order to find out if chondrosamine is present in other serum glycoproteins containing sialic acid (as indicated by the reactions characteristic of that compound)³ the present work was undertaken. The so called seromuroid, as it is usually prepared, is certainly neither a native nor a uniform serum component, but derives probably from different serum glycoproteins. As,

however, the sialic acid content is fairly high in seromuroid and this substance is comparatively easy to prepare it was chosen for the investigation.

Seromuroid was prepared mainly according to Rimington⁴. The preparation contained 5.8 per cent hexosamine and 7.9 per cent hexose. The sialic acid content was calculated to about 4 per cent. One g of this material was heated at 104° for 24 h with 5 N hydrochloric acid. The hydrolysate was shaken with charcoal and filtered. After evaporation in vacuo with repeated additions of methanol the filtrate was finally brought to a small volume and dry methanol was added. After standing overnight in an exsiccator a crystalline deposit had formed and was collected. The crystals were shown by the X-ray powder diagram to be α -glucosamine hydrochloride. When more methanol was added glucosamine crystals continued to form for a couple of days. The mother liquor was then brought to a thick syrup and dry methanol was added again. After three weeks in the exsiccator a crystalline mass could be collected. The X-ray powder diagram of these crystals were completely identical to that of an authentic specimen of β -chondrosamine hydrochloride (Fig. 1). In total about 5 mg of the chondrosamine salt were isolated.

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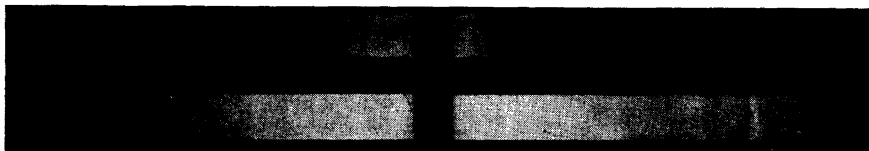


Fig. 1. I. Powder diagram of β -chondrosamine hydrochloride. II. Powder diagram of last aminosugar fraction obtained from seromuroid hydrolysate.