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HCl as a reference standard) and 6% uronic acid (glucuronic acid as a reference standard) were found. Neutral and acid sugars contained in the type specific antigen were identified as rhamnose, xylose, arabinose, galactose and uronic acid.

A sharp fall in antigenicity was recognized by the complement fixation test after the type specific antigen was treated with 0.02 M sodium periodate.

The antigenic determinant group was located in the partially hydrolyzed type specific antigen by the complement fixation inhibition test. The type specific antigen was hydrolyzed with 0.5 N and 2 N HCl at 100°C for two hours and fractionated with a small column of Dowex 50 (H form) and the successive elution with water, 0.5 N and 2 N HCl. A strong inhibition was shown by the fractions eluted with 0.5 N and 2 N HCl, which contained hexosamine. Slight inhibition or none was shown by the fractions eluted with water, which contained on hexosamine. A correlation was found between the hexosamine content in these fractions and the per cent of inhibition. The antigenic determinant of the leptospiral type specific antigen is, therefore, considered essentially related to hexosamine.

## **RADIATION EFFECTS ON THE STRUCTURE OF POSTERIOR SILKGLAND RIBOSOMES IN VITRO**

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In the present study it was attempted to obtain information on ribosomal dissociation following X-irradiation. Ribosomes prepared from the posterior silk glands of silkworm (*Bombyx mori* L.) would seem to afford a suitable material in terms of the ribosomes.

Ribosomal dissociations were examined by sucrose gradient centrifugation after the dialysis against buffer solutions with various magnesium concentrations. Ribosomes dialyzed against a buffer with 0.2~0.05 mM magnesium were dissociated into ribosomal subunits, which were observed in the sedimentation profile, while ribosomes with 5 mM magnesium concentration were not. Ribosomal subunits showed a tendency of unfolding in the magnesium concentrations below 0.02 mM.

Ribosomal dissociation and association were also examined by using analytical ultracentrifuge equipped with ultraviolet optics. The sedimentation coeffi-

ponents of single ribosomes, large subunits and small subunits, were found to be 81S, 61S and 44S respectively. Ribosomal subunits dissociated in the moderate magnesium concentration (0.5~0.2 mM) reassociated into 81S single ribosomes, when the magnesium concentration was restored to its initial level.

In examining the structural change of silk gland ribosomes subjected to X-irradiation, measurements were made of the sedimentation profiles of sucrose gradient centrifugation. In 2,000R irradiated ribosomes after the dialysis against a buffer with 0.2 mM magnesium and lacked magnesium, no change was found in their sedimentation profiles. However, in the irradiated sample dialyzed against a buffer with 0.05~0.02 mM magnesium, a tendency of "unfolding" was progressed than in the non-irradiated one.

## CYTOGENETICAL STUDIES ON SWINE INTERSEXES

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Eight cases of swine intersexes, about 6 months old, from a slaughterhouse were investigated on macroscopical and histological findings of the sexual organs, chromosome karyotype, sex chromatin, drum stick and the presence of spermatozoa on gonadal smears. Six normal animals, three of each sex, of similar ages were used as controls. The results obtained will be summarized as follows :

1) The intersexes examined were classified into the following 5 types according to the morphology of the gonads.

Type A: both sides testis-like: 2 cases ;

Type B: both sides ovo-testis: 2 cases ;

Type C: one side testis-like, the other side ovo-testis: 1 case ;

Type D: one side ovary-like, the other side testis-like: 1 case ;

Type E: one side ovary-like, the other side ovo-testis: 2 cases.

2) Histological findings of the testis-like gonad and ovo-testis showed the seminiferous tubules without any male germ cells, but features of the sertoli cells and interstitial cells were similar to those in normal males.

3) Thirty metaphase plates were examined for chromosome karyotype of leucocytes derived from the sternum bone marrow. Intersex cases, as well as control females, exhibited unexceptionally the normal female karyotype in the swine, 38,XX, whereas normal males had 38,XY.