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Title	STUDIES ON THE ANTIGENIC DETERMINANT OF SEROVAR-SPECIFIC ANTIGEN OF LEPTOSPIRA INTERROGANS SEROVAR COPENHAGENI STRAIN SHIBAURA
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The cytotoxic effects of anti-MSB-1 chicken sera from chickens hyper-immunized with inactivated MSB-1 cells were also tested. In the complement dependent antibody cytotoxicity (CDAC) test, the complement activities of sera from several animal species were compared. Furthermore, antisera to MD derived cell line (MSB-1 and RPL-1) cells were prepared in rabbit and tested for their specificities and cross-reactivities to the surface antigens of both cell line cells.

The results obtained were as follows :

- 1) The cytotoxic effect of PBL from MDV infected chickens against MSB-1 cells was detected by the lymphocyte cytotoxicity (LC) test.
- 2) The cytotoxic effect of PBL from HVT vaccinated chickens against the MSB-1 cells was not detected by the LC test.
- 3) In the CDAC and antibody dependent cell-mediated cytotoxicity (ADCC) tests, the cytotoxic effects of sera from MDV infected or HVT vaccinated chickens against MSB-1 cells were not detected.
- 4) The cytotoxic effects of anti-MSB-1 chicken sera against MSB-1 cells were detected by both the CDAC and ADCC tests.
- 5) In the CDAC test using anti-MSB-1 chicken serum and MSB-1 cells, the duck complement showed satisfactory activity for the test when it was used alone or together with the rabbit complement.
- 6) In the CDAC and membrane fluorescent antibody tests, anti-MSB-1 and anti-RPL-1 rabbit sera reacted specifically with the corresponding MSB-1 and RPL-1 cells, respectively ; however, these antisera did not react with the heterologous cell line cells.

**STUDIES ON THE ANTIGENIC DETERMINANT OF SEROVAR-  
SPECIFIC ANTIGEN OF *LEPTOSPIRA INTERROGANS*  
SEROVAR *COPENHAGENI* STRAIN SHIBAURA**

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Nondialyzable delipidized type-specific main antigen (NDTM antigen) was prepared from the organisms of *Leptospira interrogans* serovar *copenhageni* strain Shibaura.

The NDTM antigen of *copenhageni* Shibaura showed an inhibition of the complement fixation between the type-specific main (TM) antigen of strain

Shibaura and the homologous antiserum, which suggests that the NDTM antigen contained an antigenic determinant. The NDTM antigen of *copenhageni* Shibaura contained 10 amino acids, whereas the NDTM antigens of *kremastos* Kyoto and *hebdomadis* Hebdomadis (variant) contained 16 amino acids. There was an extremely large amount of Alanine in the NDTM antigen of *copenhageni* Shibaura. Lysine was not detectable in the NDTM antigen of *copenhageni* Shibaura; however, there was a large amount in the NDTM antigens of *kremastos* Kyoto and *hebdomadis* Hebdomadis (variant). The amino acid compositions of *kremastos* Kyoto and *hebdomadis* Hebdomadis (variant) were similar. There were remarkable differences in amino acid compositions noticed between the NDTM antigen of *copenhageni* Shibaura and those of *kremastos* Kyoto and *hebdomadis* Hebdomadis (variant). In these strains the difference of amino acid compositions of NDTM antigens was correlated with the difference of their serologic behavior.

The NDTM antigens were found to inhibit specific leptospiral microscopic agglutination. The 50% agglutination of the leptospiras was inhibited in the presence of about 200–250  $\mu\text{g/ml}$  of the NDTM antigens. This inhibitory effect of NDTM antigens was lost by treating the antigen with proteolytic enzymes, protease and trypsin.

These findings reveal the significant role of protein as the antigenic determinant of the NDTM antigens.

## **RADIOSENSITIZATION OF MOUSE L CELLS BY THE ELECTRON AFFINIC RADIOSENSITIZER, RO-07-0582**

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The present investigation was undertaken to elucidate the effect of a radiosensitizer on mouse L cells in culture following X-irradiation.

It is well known that the radiosensitivity of cells irradiated in the presence of oxygen is higher than in those irradiated without oxygen. Under an aerobic condition, the survival curve of irradiated cells showed a shoulder region with an extrapolation number of 6.4 and a mean lethal dose ( $D_0$  value) of 126 rad. On the other hand, under an extremely hypoxic condition prepared with nitrogen gas using a stainless steel apparatus, the survival curve was found to have no shoulder region, and there was an extrapolation number of 1.1 and a  $D_0$  value