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muscle rigidity or erythema congestivum during halothane-test and frequencies of PSE muscle. Ascending rates of plasma CPK were correlated with L-value (brightness of color) of muscle in Landrace ($r=0.3021$, $P<0.05$) and in Large White pigs ($r=0.3014$, $P<0.05$). Blood lactate were correlated with L-value ($r=0.3906$, $P<0.01$), water holding capacity ($r=0.4489$, $P<0.01$) and extensible ratio ($r=0.3225$, $P<0.05$) of muscle in Landrace pigs. On the other hand, other results, i. e., correlations between the blood parameters and muscle characteristics were not significant. In conclusion, there were no clear relationships between antemortem parameters employed in this study and frequencies of PSE muscle or muscle characteristics. The possibility and value of antemortem detection of PSE muscle by the methods used for these parameters was discussed.

STUDIES ON MAREK'S DISEASE TUMOR-ASSOCIATED SURFACE ANTIGEN

Kazuo SUZUKI

*Department of Epizootiology
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan*

The purpose of the present study is to examine the serological, physical, and chemical natures of Marek's disease tumor-associated surface antigen (MATSA) on line cells derived from Marek's disease tumors. In the serological study, antisera to two Marek's disease derived line cells (MSB-1 and RPL-1) did not cross-react with the corresponding heterologous line cells, as examined by the indirect membrane immunofluorescent antibody (IFA) and the complement-dependent antibody cytotoxicity (CDAC) tests. For solubilization of the tumor antigen from MSB-1 cells, sodium deoxycholate (SoDOC) was most effective, and the method combining freeze-thawing and sonication was also effective. However, solubilization by three other kinds of non-ionic detergents (Triton X-100, Tween 80, and NP-40) resulted in failure. The activity of the soluble tumor antigen was detected by IFA-blocking and CDAC-blocking tests, and the physical and chemical natures of the antigen were characterized as follows:

- 1) In thermo-stability test, the soluble tumor antigen was stable when heated at 45°C for 30 minutes, but was inactivated by heating at 50°C or more for 30 minutes.
- 2) In pH stability test, the soluble tumor antigen was stable at pH 6.0~8.5.
- 3) The soluble tumor antigen was stable after treatment with ether, but unstable after treatment with NaIO_4 and proteolytic enzymes (pronase and trypsin). The treatment of intact MSB-1 cells with pronase resulted in the reduction of the positive proportion of MATSA by the IFA test.

4) The precipitation experiment showed that the soluble tumor antigen was precipitable in more than 33 % saturated $(\text{NH}_4)_2\text{SO}_4$.

5) The molecular weight of the SoDOC soluble tumor antigen, estimated by SDS-polyacrylamide gel electrophoresis, was about $80,000 \pm 10,000$ dalton.

**EXPERIMENTAL STUDIES ON LYMPHOGRAPHY IN DOGS
ON LYMPHOGRAPHIC FINDINGS OF OILY
CONTRAST MEDIUM INJECTED INTO
THE PELVIC LIMBS OF DOGS**

Fumio TACHIBANA

*Department of Veterinary Surgery
Faculty of Veterinary Medicine
Hokkaido University, Sapporo 060, Japan*

This study was undertaken to observe the pictures of the lymph system in canine lymphography of the pelvic limbs. For this purpose experiments were carried out using 34 healthy adult dogs. Lipiodol Ultra-Fluide and Myodil were injected into the lymphatic vessel in the pelvic limbs.

The results of the lymphograms were as follows:

1) On the opaque faculty the lymphograms with 0.2 ml/kg and 0.4 ml/kg of Lipiodol Ultra-Fluide were better than those with 0.2 ml/kg of Myodil. However, on the opaque area the difference in both was not noticed.

2) In the pulmonary embolism the greater the administration dose of the contrast medium was increased, the more the incidence was increased. The pulmonary embolism was shown in all of animals with 0.4 ml/kg of Lipiodol Ultra-Fluide. The incidence of the pulmonary embolism was higher in the group with 0.2 ml/kg of Myodil than in the group with 0.2 ml/kg of Lipiodol Ultra-Fluide.

3) By the contrast medium injected into the lymphatic vessel in the pelvic limbs, popliteal lymph nodes, lateral iliac lymph nodes, medial iliac lymph nodes, sacral lymph nodes, deep inguinal lymph nodes, lumbar aortic lymph nodes, and cranial mediastinal lymph nodes were visible.

4) By the incidence of lymph nodes in the lymphogram, the pictures of the canine lymph system were classified into three types. But it was found that the courses of the lymphatic vessels were all different.