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LYMPHOCYTE TRANSFORMATION OF PERIPHERAL BLOOD LYMPHOCYTES IN SUCKLING PIGLETS

Takeo OHSUGI

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

It is well known that piglets less than four weeks old are immunodeficient. This status seems to be due to immaturity in activity of the helper-T lymphocytes in this period. The purpose of the present studies was to clarify lymphocyte transformation of peripheral blood lymphocytes with mitogen from suckling piglets in order to elucidate the activity of T lymphocytes in this stage.

The results of the experiments are summarized as follows.

1) Ficoll-Conray 400 gradient centrifugation technique was used for separation of porcine blood lymphocytes to *in vitro* studies. For separation of lymphocytes from porcine peripheral blood, it was found that good lymphocyte recovery and pure lymphocytes were obtained by Ficoll-Conray 400 mixtures with densities of 1.082 to 1.085.

2) Lymphocyte transformation with mitogen was tested in peripheral blood lymphocytes from suckling piglets aged 1, 2, 3, 4 and 5 weeks respectively. A high level of lymphocyte responses similar to those of adult lymphocytes, were seen in the 1 week old piglets. Differences of stimulation indexes (SI) of lymphocyte responses of suckling piglets were not significant among any age during the experiment.

3) The effect of the administration of peptidoglycan (PG), transfer factor (TF) and chemical composites of cultural supernates derived from *Streptomyces olivaceogriseus*, *sp. nov.* (FR 41565) upon lymphocyte responses in suckling piglets was investigated. The value of SI between piglets treated with and without PG, TF and FR 41565 was not significant.

The results suggested that the percentage of T lymphocytes in peripheral blood lymphocytes and the lymphocyte responses with mitogen of piglets are almost the same as those of adult swine.