Thesis Title: Cellular Immune Response to *Opisthorchis viverrini*: In vitro Study of Mitogenic Effect of Metacercarial and Adult Antigens

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ABSTRACT

Opisthorchiasis, a common disease which is a public health problem of Thai people especially in the Northeastern part of Thailand. Chronic infection in patients of these parasitic disease mostly occurred with bile duct cancer, cholangiocarcinoma and probably hepatocellular carcinoma. Moreover, patients who had recovered from the disease were able to have re-infection again. Cellular immune response was studied by cellular proliferation assay and IL-2 detection in patients and animal model which infected with *Opisthorchis viverrini* (O.V.). Blood samples taken from ten patients with egg positive in their stool from endemic area, were isolated

for mononuclear cell (PBMC) population and activated with metacercarial and adult O.V. antigens compared with non-specific mitogens; Phytohaemagglutinin (PHA) Concanavalin A (Con A). Whereas forty O. viverrini infected hamsters were used as animal model. Splenic cells were prepared and activated to all above mentioned antigens in comparison with those of uninfected control hamsters.

The results showed that both stages of *O. viverrini* antigens exhibit their mitogenic activity, since they are able to stimulate normal human PBMC and normal hamsters splenic cells. Normal human PBMC had relative higher proliferative response to metacercarial antigen than adult antigens. While in normal hamsters, no difference in stimulation the response between metacercarial and O.V. adult antigens were observed. The mitogenic activity are found in the early period as well as mitogens stimulation.

The cells in the disease stage of patients and infected hamsters were able to respond to PHA and Con A stimulation, which delineated their usual activity. Infected hamster showed higher response to both stages of antigen at two different periods of infection, 3 and 48 weeks of experimental period. Whereas in patients, response to adult antigen stimution were found and high concentration 5 µg/ml of metacercarial antigen. IL-2 was able to detect in patients as well as in normal individu-

als, which represented their normal production function. Infected hamsters at 48 weeks of experimental period, production of IL-2 were not correlated with the increasing of cellular response. This lymphoproliferative disorder might be due to the impairment of the immunoregulatory system in chronic stage of disease or probably correlate with the carcinogenesis mechanism.