Thesis Title Responses of Wistar Rat to Experimental Inoculation with Hepatitis E Virus (HEV)

Name Miss Yaowapa Maneerat

Degree Doctor of Philosophy (Pathobiology)

Thesis Supervisory Committee

Rachanee Udomsangpetch, Ph.D.

Edward T. Clayson, Ph.D.

G. David Young, D.V.M., M.Sc.

Tongtavutch Anukarahanonta, M.D., Ph.D.

Vina Churdboonchart, Ph.D.

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ABSTRACT

To determine whether laboratory rats are susceptible to infection with the hepatitis E virus (HEV), Wistar rats were inoculated intravenously with human feces containing HEV. At 0 (preinoculation), 4, 7, 11, 14, 18, 21, 25, 28, and 35 days post inoculation (dpi), 3 animals each were euthanized and necropsied. Stool and sera specimens taken at necropsy were examined by PCR for the detection of HEV RNA. Tissues collected at necropsy were examine by light microscopy for detection of histopathological changes and by direct immunofluorescence for detection of viral antigens. Sera were also examined by

ELISA for the presence of HEV-specific antibodies. HEV RNA was detected in stool at 7 dpi and in serum intermittently between 4-35 dpi. HEV antigens were detected in liver, peripheral blood mononuclear cells, spleen, mesenteric lymphnode and small intestine intermittently between 4-35 dpi. Histopathologic lesions attributable to HEV infection were detected in liver, spleen and lymphnode. Inoculated rats developed mild hepatitis similar to the hepatitis observed in non-human primates and pigs in previous studies. HEV-specific antibodies were not detected by this ELISA. The results suggest that Wistar rats are susceptible to infection with HEV.