Thesis Title Angioarchitecture of Tree Shrew's Small Intestine as Revealed by Corrossion Cast Technique in Conjunction with SEM

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ABSTRACT

The microcirculation of the tree shrew's small intestine has been studied using vascular corrosion cast technique in conjunction with SEM, with complementary application of routine paraffin technique and convensional SEM for the study of histological and morphological aspects of the intestinal wall. It is found that the mesenteric arteries form the vascular arcade before giving off vasa recta which send out branches in the intestinal wall supplying the muscular externa before becoming submucosal plexus. The arteriole from the submucosal plexus gives rise to capillaries surrounding the intestinal glands. The capillaries travel to the tip of the villus and forming capillary plexus at this

area before converging to form the efferent central vein. This vascular pattern could be classified into "tuft-pattern" of Stoehr (1967). Furthermore, regional differences of blood supplies are also found as the duodenal mucosa relatively contains the most extensive vascular plexus. In the jejunum the arrangement is slightly less with a looser mesh and even looser plexus in the ileum. In addition, the areas where the lymphoid nodules or aggregated lymphoid nodules occupy, the cast could be identified as "dome-like" features. The villi of tree shrew's small intestine vary in shape from ridge-like projections in the first part of the duodenum to tall tongue-like shape in the second part of the duodenum and the jejunum. In the ileum, the villous projection shows two forms of small tongue-like and finger-like shapes. The findings of this study are compared with those found in other primates, and the possible relationship of the vascular pattern as occur in the tree shrew with mechanism concerning regulatory of hydrostatic pressure during active digestion and absorption in the intestinal mucosa are documented.