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KEY WORD : BASEMENT MEMBRANE / LAMININ

SIRIKUL PRADITSATHAPORN: LAMININ EXPRESSION IN THE BASEMENT MEMBRANES OF NEWBORN RATS. THESIS ADVISOR: VIJITTRA LEARDKAMOLKARN, Ph.D., BOONSIRM WITTHACHUMNARN KUL, M.D., Ph.D., REON SOMANA, M.D., Ph.D. 80 P. ISBN 974-589-105-3

Basement membrane is a special class of extracellular matrix which functionally serves as supramolecular support for tissues and is involved in the phenotypic expression of cells. Several components of basement membrane, such as collagen IV, laminin, heparan sulfate proteoglycan, fibronectin, and nidogen have been studied and well defined by immunohistochemical, biochemical and molecular biological techniques. Laminin, a major non-collagenous component in the basement membrane, is glycoprotein formed from three distinct polypeptide chains ( $\alpha$ ,  $\beta$ 1,  $\beta$ 2) linked by disulfide bonds. Laminin has been found at sites where specific cells-cells, cells-tissues interactions during embryogenesis and is implicated to be involved in all cell behaviors. It also plays a significant role in macromolecule filtration in the kidney. Whether laminin is involved in other physiological functions of the cell remains in question.

This experiment was planned to investigate the normal distribution of laminin in different rat organs during postnatal period using immunofluorescence techniques. The expression of laminin in organs was analyzed on tissue sections that has been labelled with anti-laminin IgG, the serum purified from rabbit immunized with EHS tumor laminin. In the kidney, fluorescence labelling of anti-laminin IgG was intense in the basement membrane of glomeruli during developing and maturing stages, Bowman's capsule and tubular basement membrane. In the liver, the labelled antigen was presented in the basement membrane of portal vessel and the central vein of young and mature liver, but absent in the hepatic sinusoids. In the lung, the parenchyma was heavily invested with laminin positive immunoreaction both in the basement membrane of the forming alveoli and in the basement membrane of epithelial bronchus. In the small intestine, distribution of laminin was intensely labelled in the epithelial basement membranes of the crypts of Lieberkühn and the villi. It was also expressed in the muscular layers of the small intestine. In the testis, indirect immunofluorescence labelling localized laminin into the basement membrane of seminiferous tubules of newborn rats as a non-linear, fragmented (or discontinuous) pattern. Whereas in adult testis, it showed a sharp linear lining in the basement membrane of seminiferous tubules. Conclusively, the evidence suggests that during tissue organogenesis and continuing growth, laminin is required and actively participates in the processes. Once the tissues become mature, laminin remains to function as the supporter and may be involved in the further remodelling process of the organs.