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### **Organization of avian thymic medulla and surfactant production**

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**T**hymic medulla of the chicken is compartmentalized to keratin positive network (KPN) and keratin negative areas (KNA). KPN is connected with the cortical epithelial reticular cells (ERC) and the KNA is a dilation of the interlobular septae consisting of reticular connective tissue. "Derailed" differentiation or development of thymic ERC results in thymic cyst and/or Hassall's body's formation. Both cysts and Hassall's bodies locate in the KPN of thymic medulla. Possibly, the differentiation of the cells of the thymic cyst and Hassall's body's cells stopped in the early and late stages of development, respectively. The thymic ERC and the surfactant producing type II pneumocytes of the lung develop from the foregut endoderm. The transmission electron microscope shows that the cells of the multicellular cysts are polarized and the structure of the cytoplasmic granules identical with that of the type II pneumocytes. At the apical side of the cyst epithelial cells express alpha smooth muscle actin. The lumen of the cysts is filled with a substance of medium electron density and strongly stained with anti-surfactant SP-B. These findings indicate that the cyst epithelium actively secretes surfactants which contribute to the central tolerance of thymus and innate immunity. The thymic ERC and the surfactant producing epithelial cells of the cysts express MHC class II antigen unlike the type II pneumocytes.

#### **Biography**

Imre Olah has completed his MD at age of 24 from Semmelweis University Faculty of Medicine. He completed PhD and DSc from Hungarian Academy of Sciences. He did his Postdoctoral studies at the Anatomy, Histology and Embryology Department, Semmelweis University. He worked as Research Associate in Department of Biological Structure, Washington State University Seattle, Poultry Science Department Mississippi State University, and Clemson University South Carolina. He was the Professor and Head of Department of Human Morphology and Developmental Biology, Semmelweis University. He has published more than 130 papers and book chapters.

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