

closely related to the scintigram and in some findings, the depreciation of regional blood flow and ventilatory function were correlated, but the abnormality of blood flow in asthmatic attack were seen in some cases with the depreciation of blood flow, but in some, with the

increase of blood flow.

4. It was found that the disturbances of regional pulmonary function was closely related to selective bronchogram and selective pulmonary angiogram.

## Studies on the Protein synthesitic system of the Lung and Bronchus The incorporation of $^{14}\text{C}$ -amino acids into proteins

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With a view to studying the non-respiratory functions of the lung, investigations have been made into the protein synthesitic system of the lung, with special reference to the incorporation of amino acids into proteins in vivo as well as in vitro. In the present study, comparison was made between the protein synthesitic systems of the lung and the liver of normal rats.

The results obtained were as follows:

1) The incorporation of  $^{14}\text{C}$ -lysine in vivo was highest in the lung, followed by the bronchus, liver, spleen, and intestinal mucosa in consecutive order.

2) The incorporation of  $^{14}\text{C}$ -lysine into protein was almost linearly increased in the lung and liver for the first 20 minutes. Newly synthesized protein was demonstrated in the lung, though its amount was about one third of that in the liver.

3) As a result of protein synthesis in vitro where ATP-generating system was added to the microsomes and the supernatant enzyme obtained through ultra centrifugation, it was found that the microsomes from the lung yielded less protein than that from the liver.

4) The RNA/protein ratio of the separated microsomes was smaller for the lung than for the liver.

5) The incorporation of  $^{14}\text{C}$ -phenylalanine into microsomal protein in vitro, which is stimulated by polyuridylic acid, was remarkably expedited even when the lung microsome was used.

6) The microsomes obtained from the lung and the liver were comparatively studied by means of electron microscopy. As a result, it was confirmed that they were roughly uniform fractions containing, morphologically, ribosome (RNP).