

## **X-ray refraction imaging of the lung and histological correlations**

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### Rationale and Objectives;

Authors performed this study to observe microstructures of the lung using synchrotron radiation beam and matched findings with histological observations.

### Materials and Methods;

X-ray refraction image from *ex-vivo* ventilating rat lung was obtained with 8KeV of monochromatic beam. Obtained images were analyzed and compared with conventional light microscopic findings from same sample.

### Results;

Pulmonary microstructures including alveolar ducts, alveolar sacs, alveoli, alveolar walls and perialveolar capillary networks were clearly identified and had good correlation with conventional light microscopic findings. The shape of alveoli kept more round than in microscopic image.

### Conclusion;

The findings suggest that synchrotron radiation provides a novel research tool for respiratory medicine and possible clinical application in near future.