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Draft Synchrotron-Fourier transform infrared maps of ovalbumin-induced murine chronic allergic airways disease: Correlation with conventional histology and immunofluorescence

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Synchrotron-Fourier transform infrared (FTIR) tissue mapping is yet to be investigated in chronic models of allergic airways diseases. Here, spectra derived from synchrotron-FTIR maps were used to analyse an ovalbumin (OVA)-induced murine chronic allergic airways disease model. Analysis of the chemical maps resulted in distinct clusters and significant changes in the lipid, proteins and nucleic acid regions of the spectra between the saline control and OVA-induced allergic airway response within murine lung tissue samples. These results are supported by structural and biological changes within conventional histological and immunofluorescence methodologies. Future studies will aim to include larger and higher resolution maps to improve clustering and quality of the data produced to elucidate the underlying mechanisms involved in a chronic murine model of OVA-induced allergic airways disease.

Keywords

FTIR, tissue mapping, OVA, chronic allergic airways

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