

Abstract No. goug776

Synchrotron FTIR Mapping of Molecular Changes in Alzheimer Diseased Brain Tissue

K. Gough, M. Del Bigio, and M. Ogg (U. Manitoba)

Beamline(s): U10B

Introduction: We have been using synchrotron FTIR to map tissue from post-mortem, autopsy human brain, with samples coming from normal and from clinically diagnosed Alzheimer diseased subjects. IR spectra are analyzed to identify typical lesions of Alzheimer's disease, including a variety of aggregated proteins. This is part of an on-going study. During 2001, the sample study has been extended to ensure adequate sampling from age-matched subjects.

Methods and Materials: Post-mortem tissue is excised and frozen for sectioning. Samples are mounted on reflective slides and appropriate regions are mapped, with apertures ranging from 6-20 microns. Post-analysis of data is performed with the Omnic/Atlas software that is associated with the Nicolet instrument on which the data is acquired.

Results: Complete results for this study have now been acquired and data processing is nearly complete.

Conclusions: FTIR analysis has the potential to be very useful in the study of this disease. Conclusions from this study will be forthcoming in the following year, upon publication of results.

Acknowledgments: This research is supported by NSERC, CIHR and the University of Manitoba. The authors gratefully acknowledge the assistance of Dr. N. Marinkovic, Dr. Lisa Miller and Dr. Larry Carr of NSLS, as well as that of Dr. R. Julian (SRC) and Tim May (CLS). Beamtime for this research is obtained under the MOU between CLS and NSLS.

References: Preliminary results have been presented at conferences and workshops. Refereed papers are anticipated in 2002.