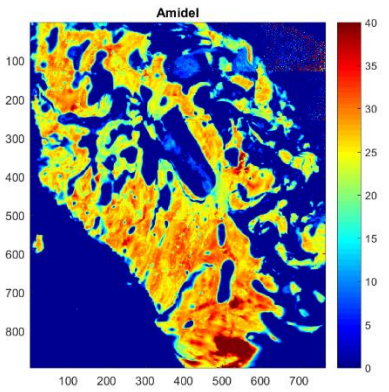
STRUCTURAL ANALYSIS OF BIOMEDICAL TISSUE SAMPLES WITH FTIR AND RAMAN MICROSPECTROSCOPY

- Microspectroscopy: vibrational spectroscopy coupled to microscopy
- FTIR: absorbance of infrared light
- Raman: inelastic scattering of light
- Chemical and spatial information – compound types and locations in tissues



WORKFLOW

SAMPLE PREPARATION FOR FTIR

- Fixation, embedding in plastic, cutting to thin sections
- Or cryosectioning
- Sections to IR transparent windows

Raman does not usually require sample preparation!

EXAMPLES

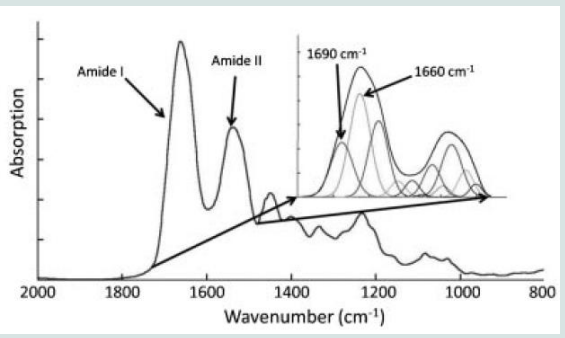
Sample types:

- Hard tissues - bone, cartilage, tooth
- Smooth tissues – brain, cancer, cells

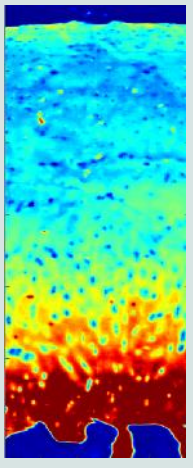
Research questions:

- Structural changes related to pathologies
- Development of diagnostic methods
- Effects of treatments or medication

MEASUREMENT AND DATA ANALYSIS



- Spectral manipulations
- Spectral maps
- Statistics, interpretation



SIB LABS INFRASTRUCTURES

IMAGING FTIR

Agilent Cary 670/620 & 128x128 FPA detector

CONFOCAL IMAGING RAMAN MICROSCOPE

Thermo DXR2xi

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