

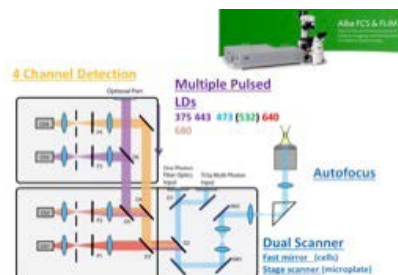
CENTER FOR FLUORESCENCE SPECTROSCOPY

CIBR: Center for Innovative Biomedical Resources

CORE INSTRUMENTATION

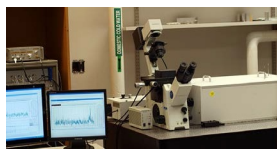
Fluorescence Lifetime Imaging Microscope

State-of-the-art imaging system, Alba V (FLIM and FCS) is designed for cellular imaging and bioassay readout and quantitative analysis. The system is equipped with multiple lasers, multiple channels, dual scanners and dual lifetime imaging capability (TD and FD).



Single Molecule Fluorescence Microscope

- Multiple lasers
- Lifetime capability
- FCS



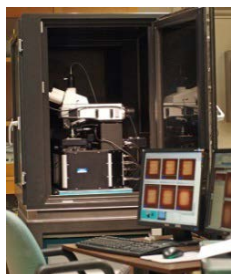
Time-Resolved Fluorescence Spectrometer

- Super Continuum Laser
- Automated system



Atomic Force Microscope and NSOM WITec alpha300S

- Contact Mode
- AC Mode
- Confocal capability



MISSION

The Center for Fluorescence Spectroscopy (CFS) provides state-of-the-art fluorescence instrumentation for studies of structure, function, and dynamics of biological macromolecules. CFS also provides the expertise on applications of fluorescence for bioassays and cellular imaging.

CORE SERVICES

The CFS makes available state-of-the-art spectroscopic instrumentation and techniques for fluorometric bioassay development and cellular imaging.

Techniques include:

- Fluorescence energy transfer (FRET)
- Fluorescence polarization (FP)
- Fluorescence correlation spectroscopy (FCS)
- Single molecule detection (SMD)
- Time-resolved spectroscopy
- Fluorescence lifetime imaging microscopy (FLIM)

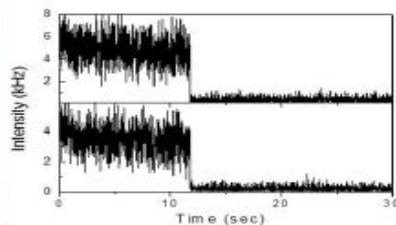
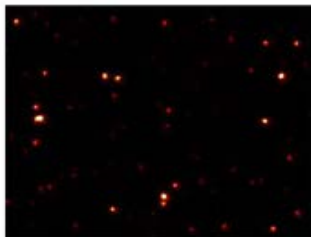
Facility also provides technical expertise on all aspects of fluorescence techniques used in basic science and biological/medical applications.

Cell imaging and studies of biomolecule interactions of assemble molecules and on single molecule basis are available with fluorescence microscopies.

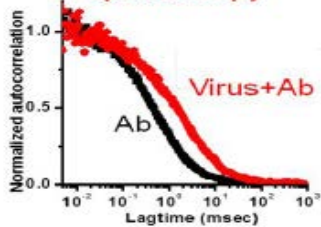
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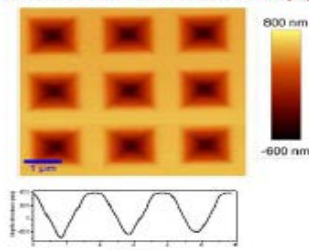
Single Molecule Detection



Fluorescence Correlation Spectroscopy



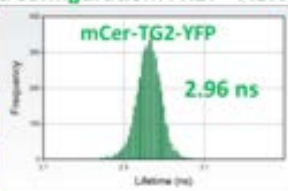
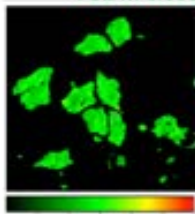
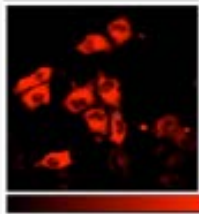
Atomic Force Microscopy



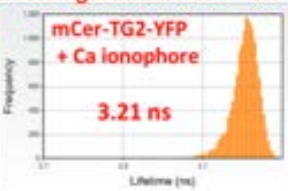
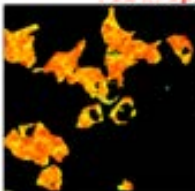
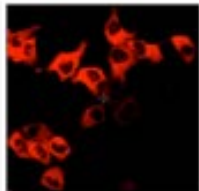
FLIM-FRET

Study of Conformational Changes of TG2 Enzyme in Cells

TG2 in closed configuration: FRET= 7.8%



TG2 in open configuration: FRET ~ 0%



Intensity image

Lifetime image

Lifetime Distribution

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