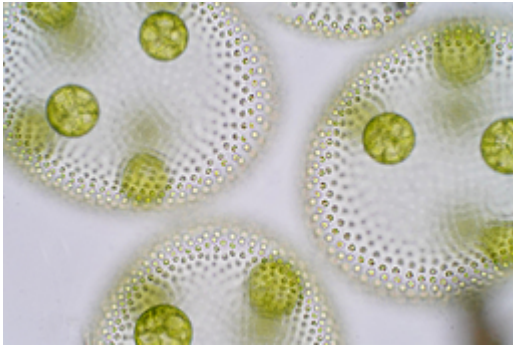




FRET Calculator - Software

TECHNOLOGY NUMBER: 4605



OVERVIEW

Quantitative image analysis software that analyzes FRET stoichiometry

- Provides sensitive, rapid and repeatable detection of FRET complexes in cells
- Simplified graphical user interface and three-dimensional FRET stoichiometric reconstruction

BACKGROUND

Quantitative methods of microscopic imaging, particularly in dynamic living systems, are increasingly "in-demand" by researchers. One such method, FRET (fluorescence resonance energy transfer), measures the timing and location of intermolecular interactions in living cells. However, to-date, commercially available methods measure FRET in arbitrary units, cannot discriminate FRET efficiency or the fractions of donor and acceptor molecules in complex.

Researchers at the University of Michigan have developed a software program for analyzing FRET stoichiometry. The "FRETcalculator" software provides a simplified Graphical User Interface (GUI) for both FRET stoichiometry and three dimensional FRET stoichiometric reconstruction (3DFSR). After a straight-forward instrument calibration with appropriate controls and the calculation of FRET constants (via the FRET calibration portion of the GUI), the user simply provides images collected at the appropriate wavelengths. (NOTE: FRETcalculator is quantitative image analysis software.

Since the mathematics are complex, a high-end computer with adequate processing power and memory is required. FRETcalculator operates most efficiently in a 64-bit environment (Windows or LINUX OS), but a 32-bit application is available. In addition, the software is built upon the MatLab environment, so a MatLab license may be required. Furthermore, the software also requires the installation of DIPimage software libraries which are distributed by Delft University.)

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