Ming-fai Fong
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Topic: SBFI Con9 Analysis
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Introduction

The following analyses pertain to the following experiment:

2010.06.24 SBFI Con9 Experimental Notes

Regions of Interest

I defined ROIs around two cells that remained visible throughout the experiment. Some examples are below.

I also made some new macros in ImageJ to streamline the process for batch operations. I have listed and described their functions below:

Macro Name	Task Performed
mov2tif	Inputs a directory containing *.mov files. Creates an average of the first 60 frames for each movie, adjusts the minimum intensity to cover full dynamic range, and re-saves as a *.tif file in a designated directory.
batchROImeasure	Inputs directories for averaged images and corresponding ROIs. Measures min/max/mean intensity for each ROI/image combination and tags by ROI area. Saves information as *.txt files in a designated directory.

Computing Ratios

I have written a Matlab script called **ratio_calc** that performs the following tasks:

- reads a folder of ImageJ-generated *.txt files containing measurements of area, mean, min, and max intensities for each ROI (different files in the folder represent different time/concentration conditions)
- performs sorting and background subtraction for mean intensities for each condition, and calculates the appropriate fluorescence ratios
- saves the following information into a data structure called data:
    - headings- original file names with condition information (e.g. 0Na_10min_340)
    - orig340- original mean emitted fluorescence when excited at 340nm
    - orig380- original mean emitted fluorescence when excited at 380nm
    - ratio- contains processed fluorescence ratios
    - times- contains time of fluorescence measurement
- plots fluorescence ratios by time of measurement, labeling different conditions