Condensation Assay

This collection of ImageJ plugins measure the area occupied by a given feature in single-channel, grayscale, fluorescence microscopy images. The assay is based on the previously described area-based analysis method (Maddox et al., 2006), which was used to measure chromosome condensation dynamics in the C. elegans zygote. This method's use is not limited to chromosome condensation and has also been used to measure nuclear expansion rates during mitotic exit in different biological contexts and cytoskeletal filament bundling during cytokinesis.

Image requirements:

Images must be single channel, grayscale images with any number of slices in z and time points.

Here is a short description of the provided plugins:

1) Condensation_Assay_.ijm
    - Runs on single channel, z-stack time-lapse images
    - Select region to be analyzed in each frame
    - Saves a maximum intensity projection of the selected region as a TIFF
    - Saves area analysis as an .xls file
2) Condensation_Assay_TS_.ijm
    - Runs on an image saved from Condensation_Assay_.ijm
    - Returns thresholded image
    - Useful for quickly testing different threshold values

REFERENCES:

If you use this plugin, please cite:

Maddox, P.S., N. Portier, A. Desai, and K. Oegema. 2006. Molecular analysis of mitotic chromosome condensation using a quantitative time-resolved fluorescence microscopy assay. *Proceedings of the National Academy of Sciences of the United States of America*. 103:15097-15102.

ImageJ macro installation:

https://imagej.nih.gov/ij/docs/guide/146-31.html