**Fluorescence recovery after photobleaching (FRAP)**

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**Abstract:** This protocol details methods of the FRAP analysis of LRRK2-induced liposome tubules *in vitro*

**Protocol:**

1, Prepare LRRK2-liposome mixtures in a PCR tube with 300nM GFP-LRKK2, 20μM liposomes (labeled with trace amounts of rhodamine-PE) and 1mM GMPPNP.

2, Immediately deposit 6-10μL samples of step 1 on a 35-mm glass bottom dish and incubate at 370C for 30 minutes.

**Note:** Drop some buffer in the dish to prevent samples from drying out due to evaporation during incubation.

3, FRAP experiments were performed with a Spinning disk confocal (SDC) microscopy at room temperature on a Nikon Ti-E inverted microscope using the Improvision UltraVIEW VoX system, with the settings as:

Time-lapse images were acquired every 15s; Three images were acquired before bleaching; Three ROIs were bleached with a 488nm laser for 500ms; Post-bleach images were acquired up to 10 minutes at 15s intervals.