



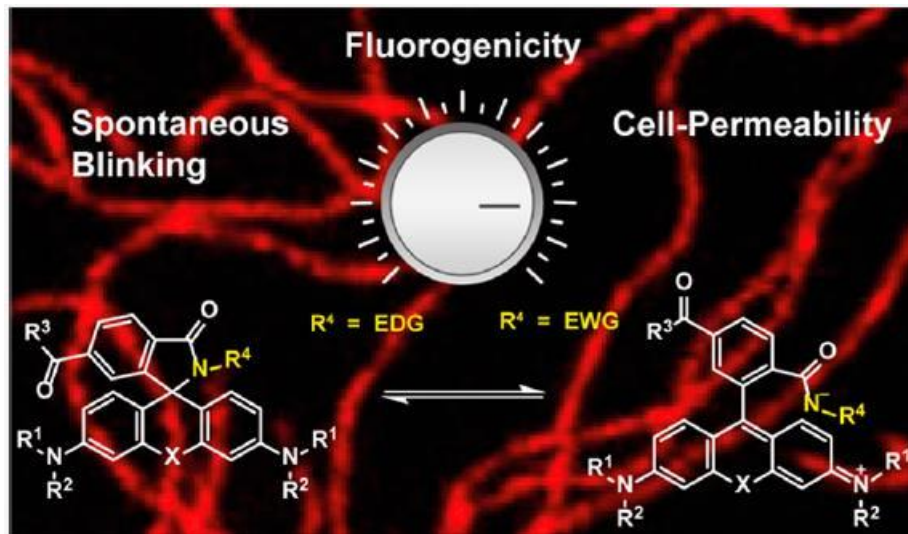
# 2021 Literature report V

**Reporter: Wu Shaowei**

**Date: 2021-09-09**

# Systematic Tuning of Rhodamine Spirocyclization for Super-resolution Microscopy

Nicolas Lardon, Lu Wang,\* Aline Tschanz, Philipp Hoess, Mai Tran, Elisa D'Este, Jonas Ries, and Kai Johnsson\*



# Author



Kai Johnsson

## Position and Status

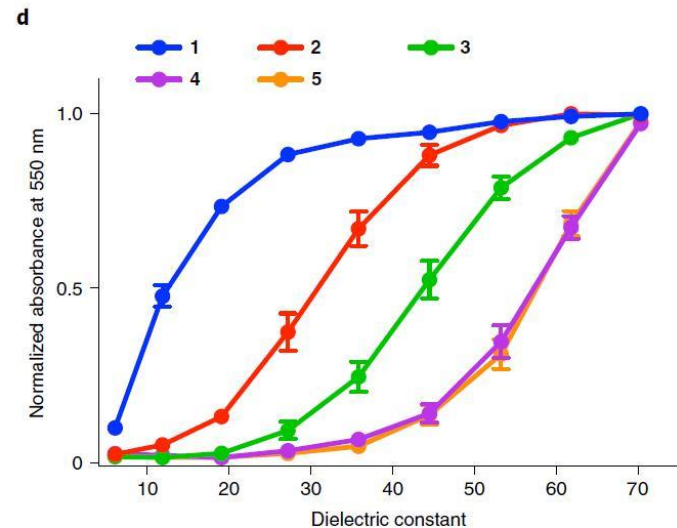
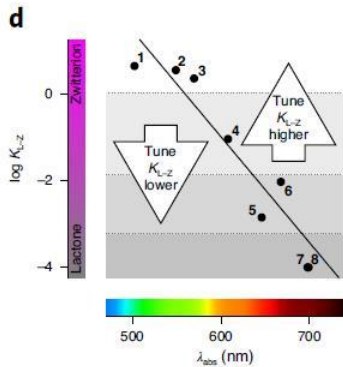
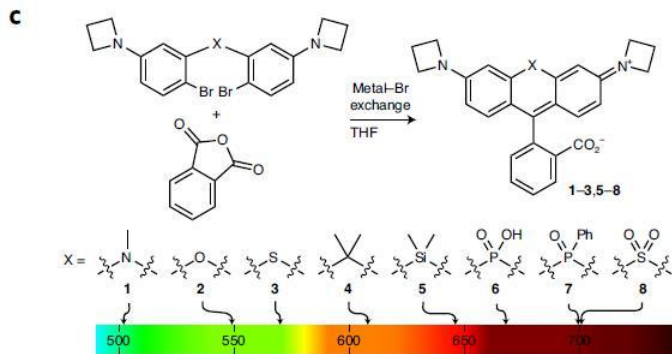
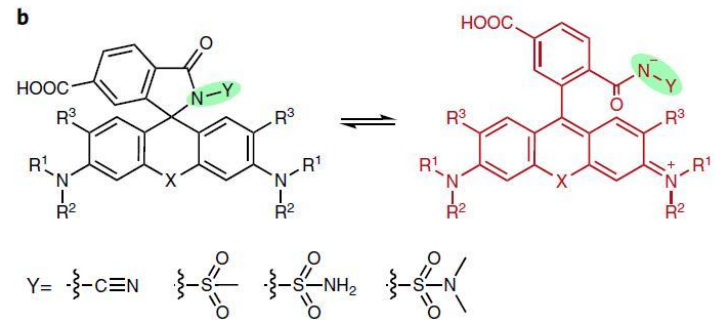
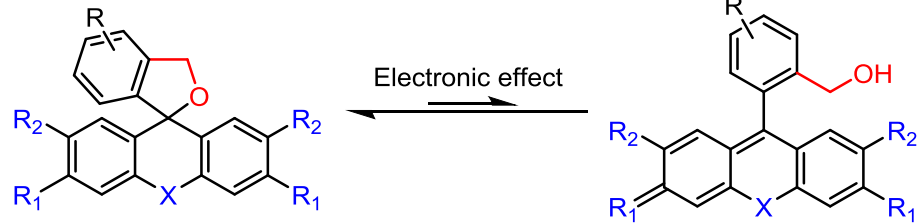
Professor EPFL

Director at the Max Planck Institute for Medical Research, Department of Chemical Biology

## Research topics

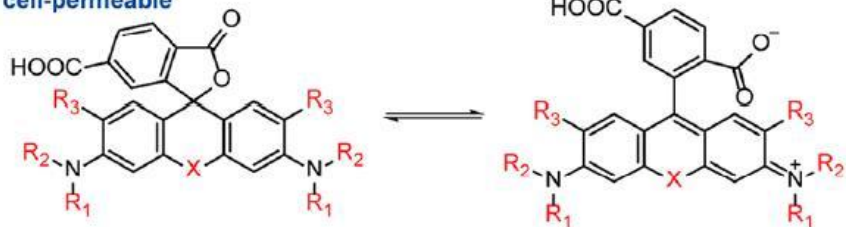
- Development of semisynthetic fluorescent sensor proteins to measure key metabolites in living cells.
- Development and application of methods for characterizing protein-protein interactions.
- Generation of small molecules for controlling protein function in living cells.
- Engineering of new protein functions for applications in functional proteomics.
- Synthesis of new spectroscopic probes for applications in cell biology.
- Mechanistic studies on drug candidates

# Introduction

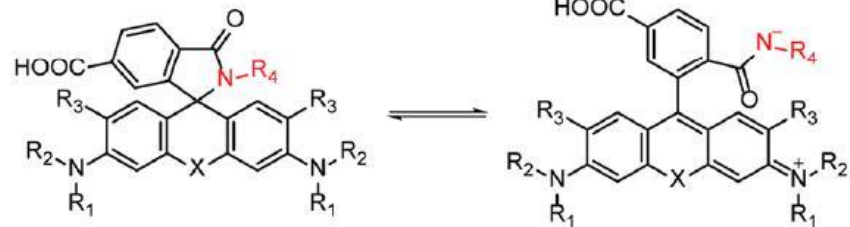
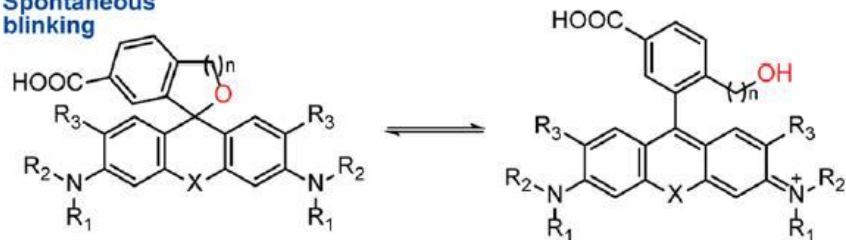


# Strategy

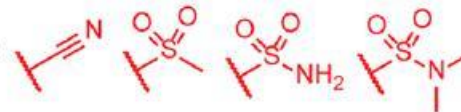
Previous work:  
Fluorogenic and  
cell-permeable



Spontaneous  
blinking



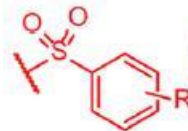
Previous work:



Fluorogenic and  
cell-permeable

$R_4 =$

This work:

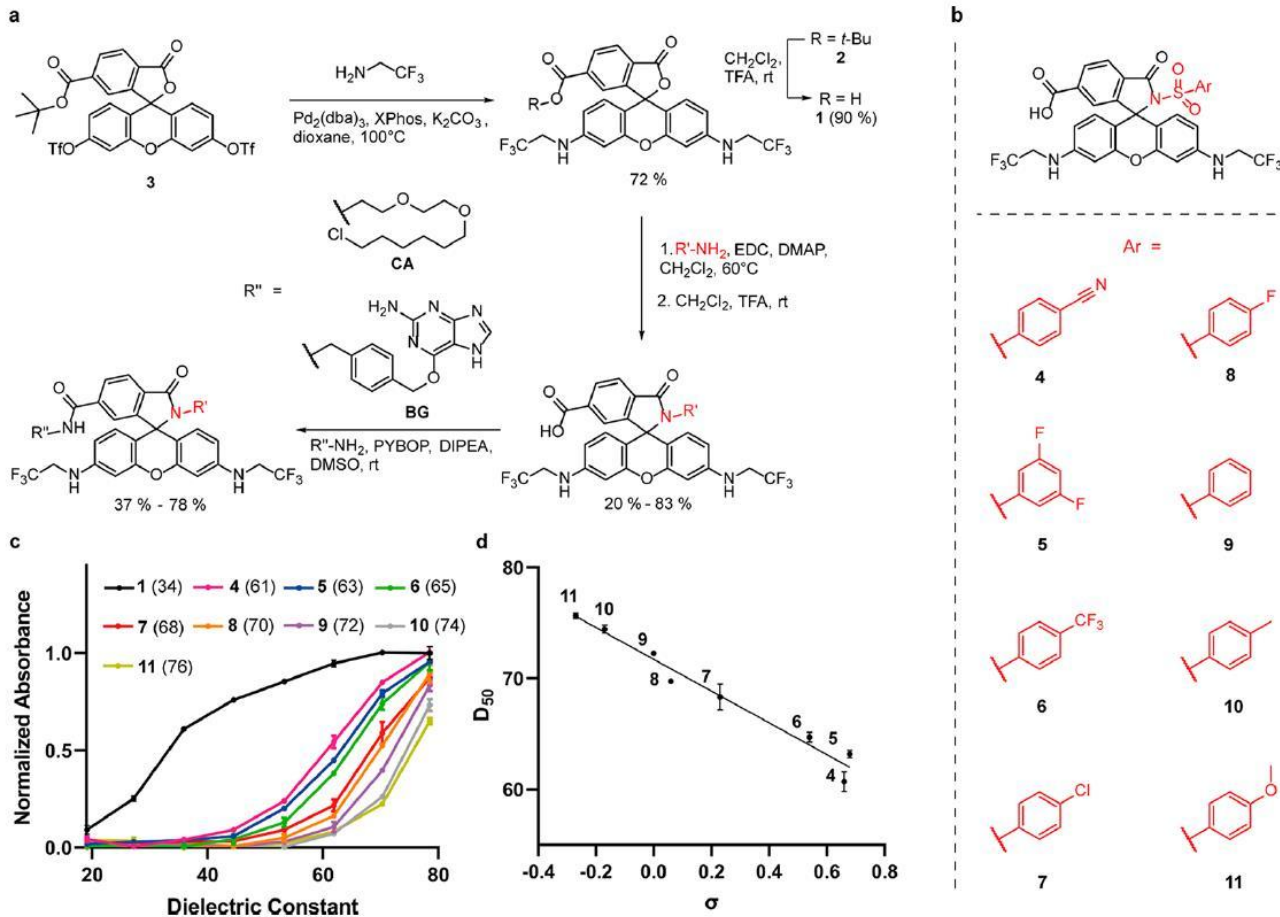


Fine-tuning of  
fluorogenicity

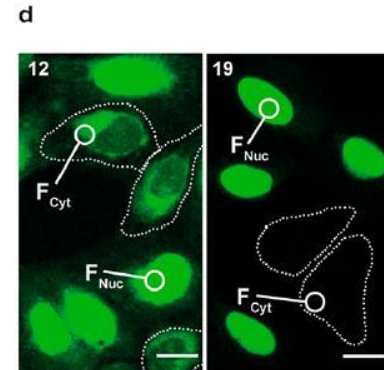
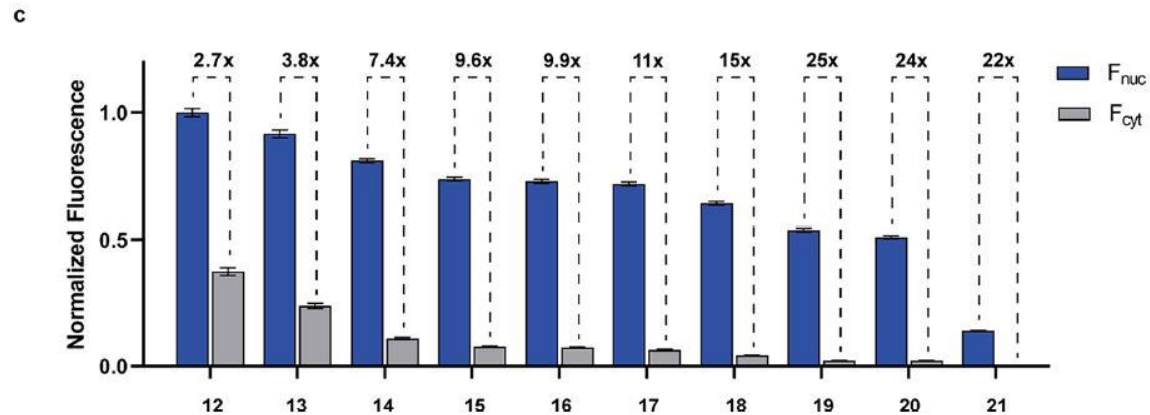
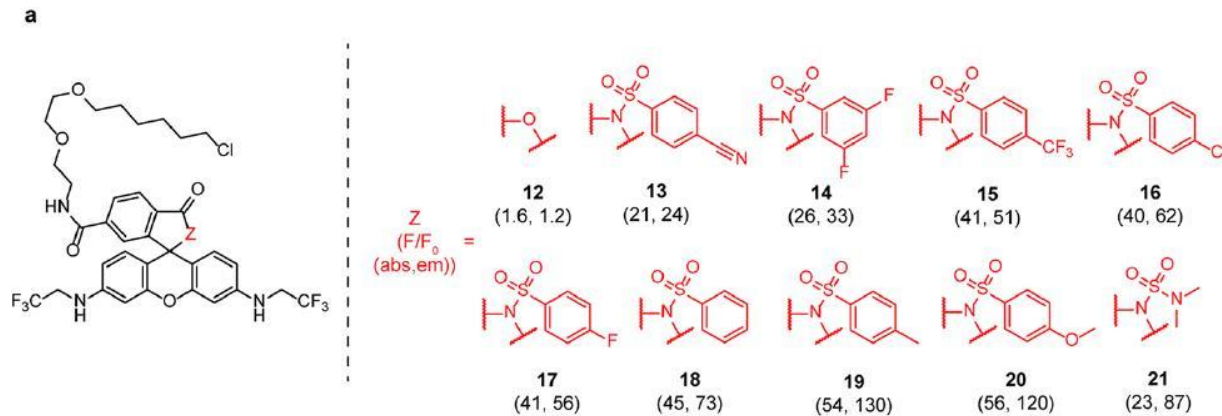


Spontaneous  
blinking

# Structures and Characterization

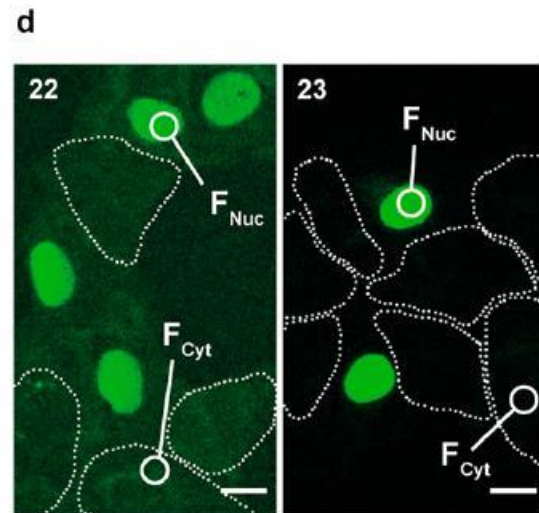
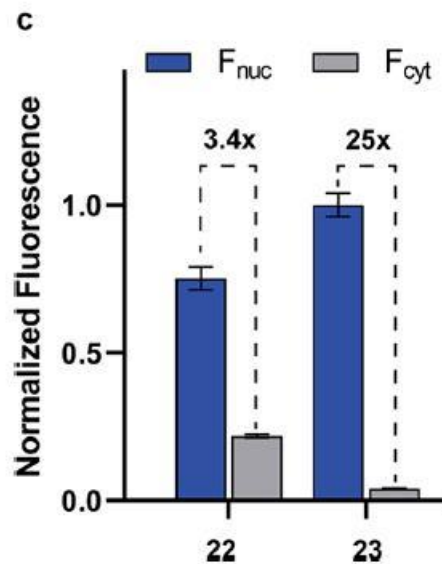
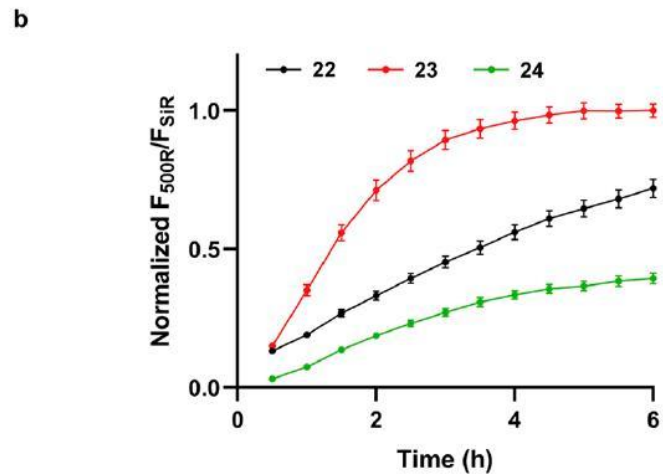
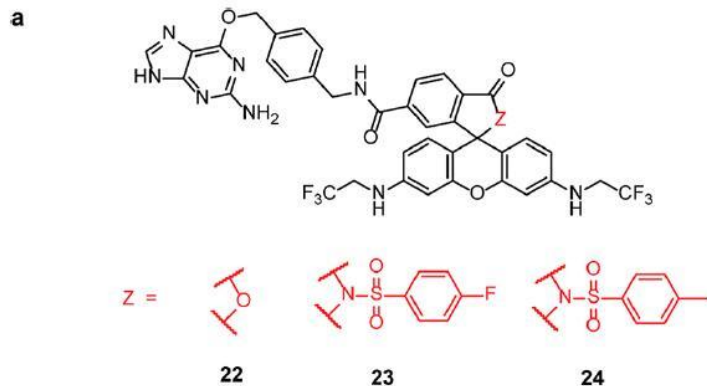


# HaloTag Labeling



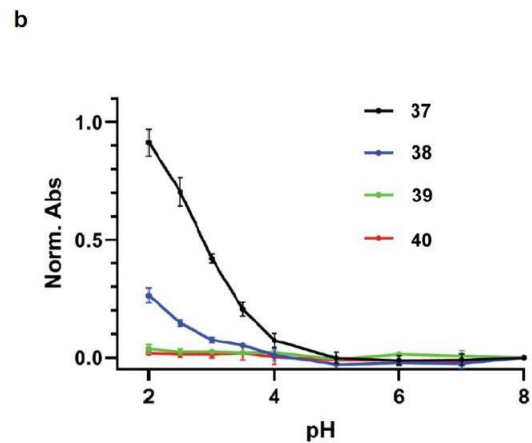
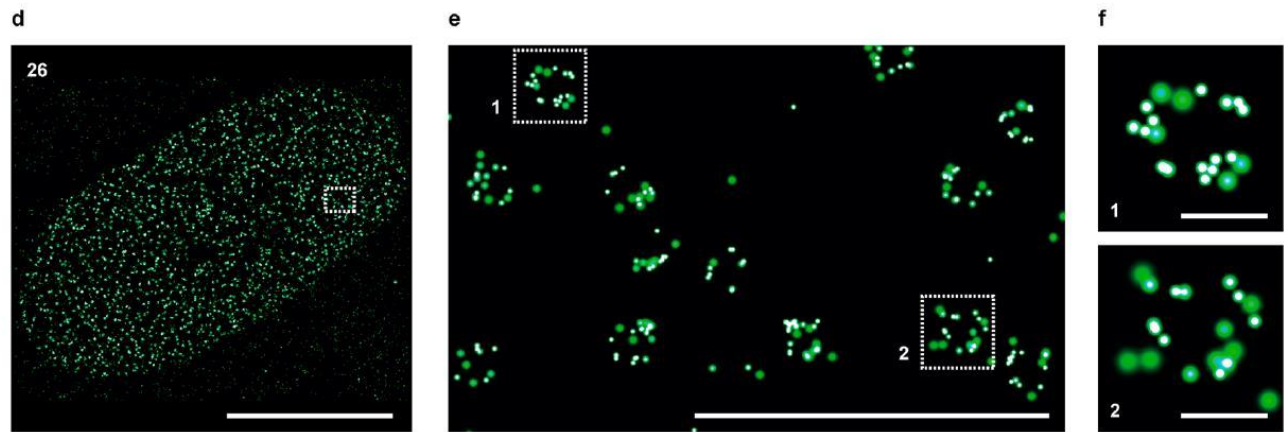
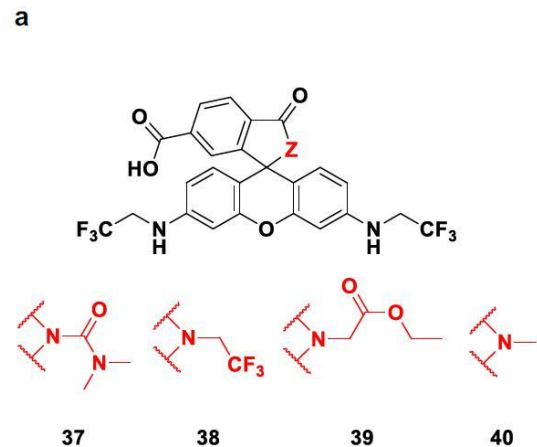
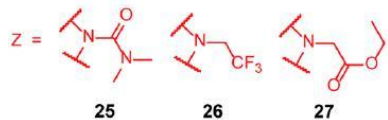
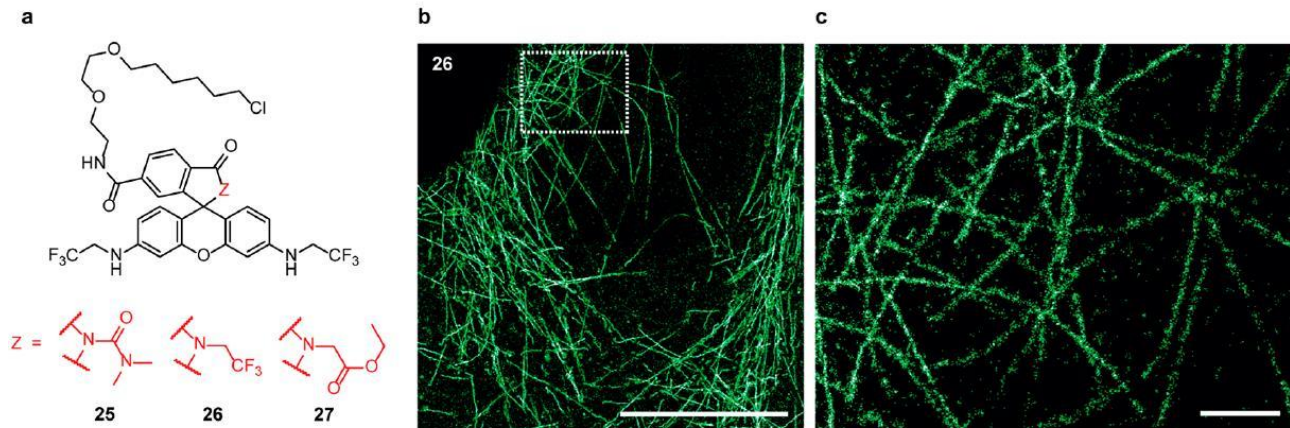


# SNAP-tag Labeling

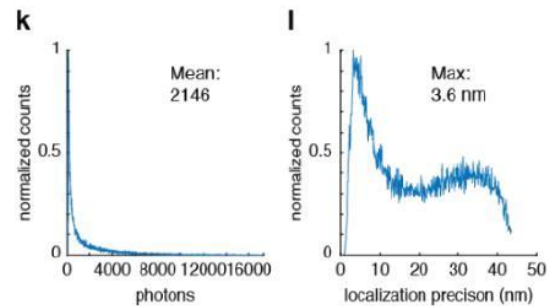
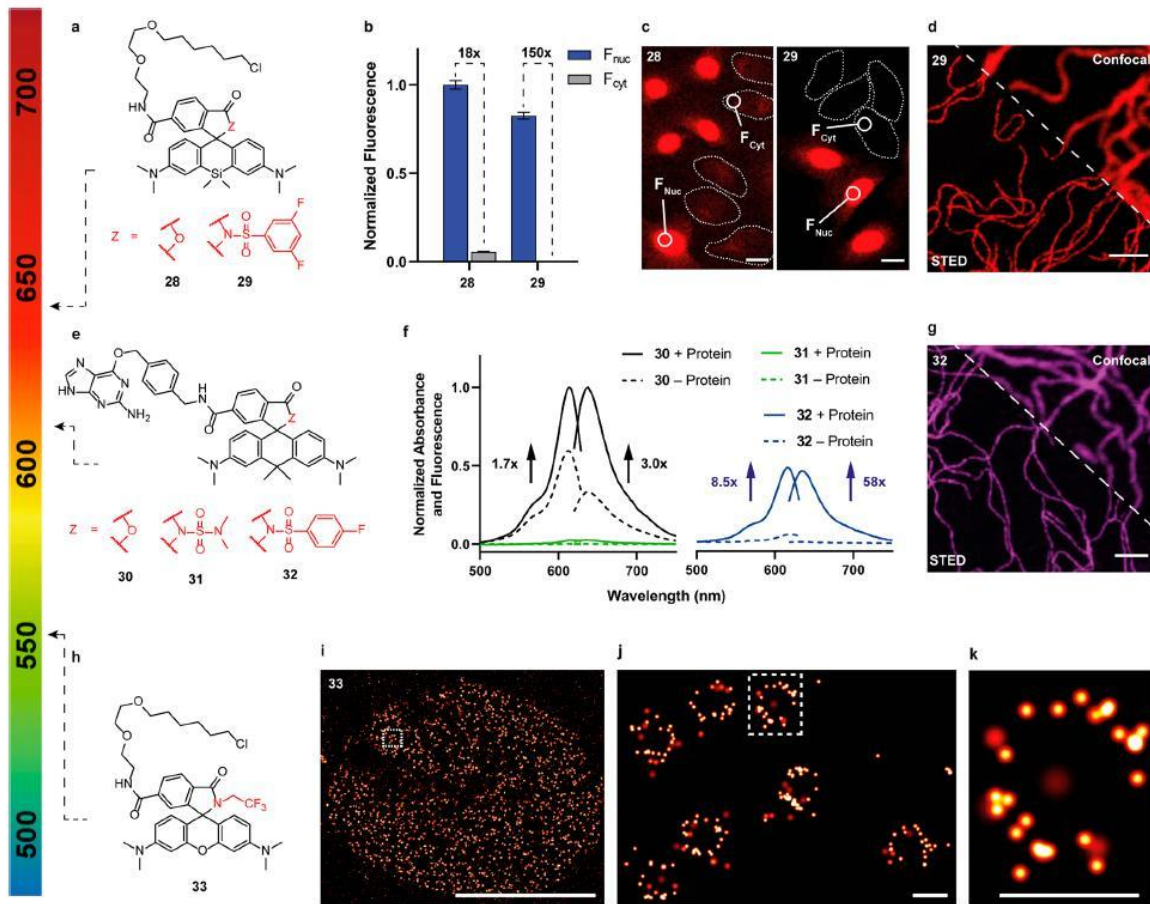




# Spontaneously Blinking for SMLM



# Extending the Strategy



# Summary

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- 在大范围内精确调节罗丹明螺环化反应的通用策略
- HaloTag 和 SNAP-tag免洗成像
- 作为自闪染料用于SMLM
- 多色衍生