

# 酵素応答性光増感中分子プローブを用いる酵素活性評価

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# Introduction: Stimuli-responsive fluorescent probes



#### - by-product from self-immolation process may affect on biological response.

emissive probe quenched probe L. Feng, X. Ma, et al. J. Am. Chem. Soc. 2019, 141, 1126.

M. Oe, K. Miki, K. Ohe, Org. Biomol. Chem. doi: 10.1039/d0ob00899k.

**Probe design: esterase-responsive probe** 

emissive probe

### Probe Design

#### **Our previous results: pH-responsive cyanine dyes**



# Esterase-responsive fluorescent Cy5 dye



### Summary

We have successfully developed a new class of turn-on fluorescent probes for an esterase: (1) a flexible linker between substrate and fluorophore accelerating the enzymatic reaction, (2) no by-products, preventing undesired biological response. The esterase-mediated formation of a carboxylate efficiently induces fluorescence activation through mercapto group-detachment.

