光駆動二官能性シクロオクテン触媒の開発

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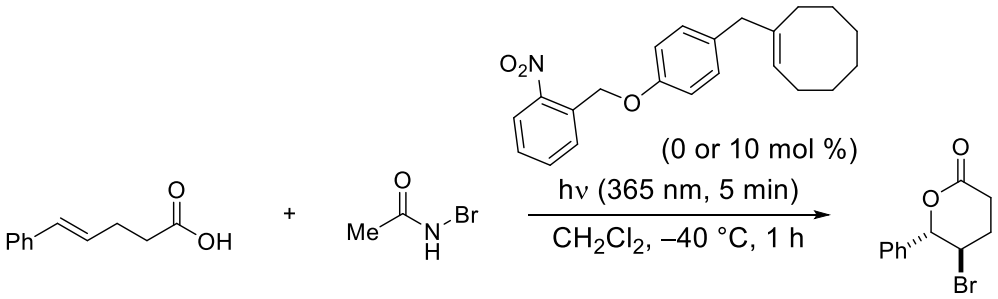
Development of Light-Gated Bifunctional Cyclooctene Catalysts (*Graduate School of Engineering, Kyoto University*) ○Takuto Shimazu, Tagui Nagano, Keisuke Asano, Seijiro Matsubara

Light-gated catalysts are useful for spatiotemporal control of molecular transformations.[1] Thus, they are potentially applicable to chemical biology techniques, however, light-gated organocatalysts are underdeveloped toward biocompatible reactions. In this study, light-gated catalysts were developed using bifunctional cyclooctene catalysts bearing photoremovable protecting groups. On the basis of the established chemistry as bioconjugation tags,[2] the cyclooctenes are recognized as biocompatible structures.

Keywords : Light-Gated Catalyst; Cyclooctene; Bifunctional Catalyst; Photoremovable Protecting Group

光駆動触媒は分子変換の時空間制御に利用できる[1]。時空間制御反応はケミカルバイオロジー技術に応用可能だが、生体適合反応を指向した光駆動有機触媒はほとんど開発されていない。今回、二官能性シクロオクテン触媒と光分解性保護基を利用することで光駆動触媒を開発した。生体共役反応性タグ[2]としてしばしば利用されるシクロオクテン構造は生体適合性にも優れていると考えられる。



w/ catalyst, w/ hν :	83%
w/o catalyst, w/ hν :	2%
w/ catalyst, w/o hν :	4%
w/o catalyst, w/o hν :	5%

1) N. Zivic, P. K. Kuroishi, F. Dumur, D. Gigmes, A. P. Dove, H. Sardon, *Angew. Chem., Int. Ed.* **2019**, *58*, 10410.
2) N. K. Devaraj, R. Weissleder, R. *Acc. Chem. Res.* **2011**, *44*, 816.