# Development of Visible Light-Gated Bifunctional Cyclooctene Catalysts

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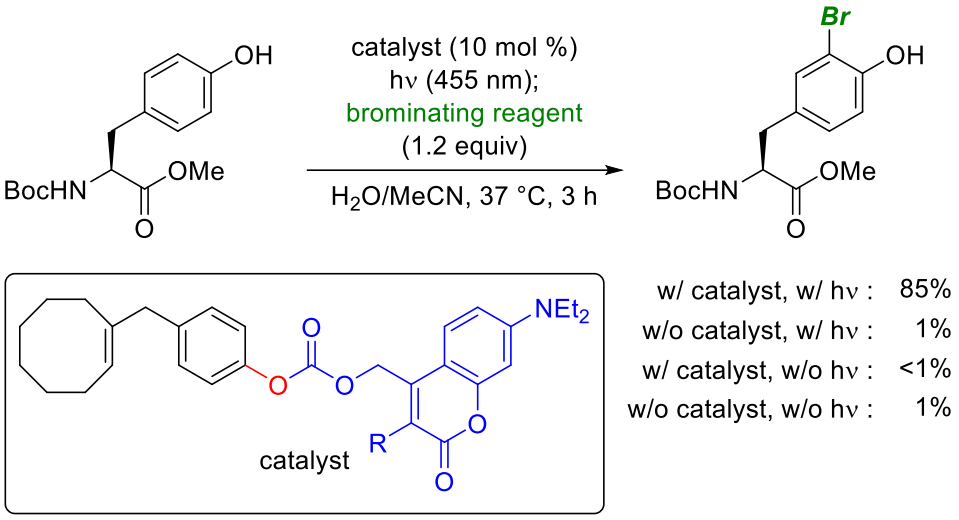
Bromination of biomolecules is significant for introduction of mass tags, which have an unusual isotopic abundance and useful for analyzing complex biomolecular systems. In this context, spatiotemporally controlled bromination of biomolecules has potentials as a powerful chemical biology tool, and for this purpose, photochemical reaction is useful. However, the methodology is underdeveloped. We recently developed bifunctional catalysts using cyclooctene derivatives, which are frequently used as click reaction tags and their biocompatibility is well-recognized,[1] and the catalytic activity is controllable through protection and deprotection of their substituents.[2] In this study, we developed light-gated bifunctional cyclooctene catalysts for bromination, which were activated in situ thorough deprotection by irradiation of ultraviolet and visible light. These catalysts were useful for bromination of tyrosine derivatives, which would be applicable to modification of peptides and proteins.

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