



Showcasing research from Professor Hiroki Oguri's laboratory,
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Direct photochemical intramolecular [4+2] cycloadditions of dehydrosecodine-type substrates for the synthesis of the *iboga*-type scaffold and divergent [2+2] cycloadditions employing micro-flow system

A highly efficient, photochemical flow synthesis of three distinct indole alkaloidal scaffolds has been achieved by exploiting conformationally preorganised, multipotent intermediates that closely emulate the plant-derived dehydrosecodine precursor. Through site-selective photoactivation of the dihydropyridine moiety, this strategy unlocks divergent [4+2]/[2+2] cycloaddition pathways, vastly expanding access to complex alkaloidal architectures. Furthermore, it extends natural biosynthetic pathways by harnessing the hidden yet pre-encoded reactivity of the dehydrosecodine-type precursor, eliminating the need for external photocatalysts or photosensitisers.

As featured in:



See Hiroki Oguri *et al.*,
Chem. Sci., 2024, 15, 15599.