

## Decarboxylation of 2,4-vinyl-oxazolidine-diones (VOxD) for enantioselective cycloaddition via aza- $\pi$ -allylpalladium zwitterionic intermediate

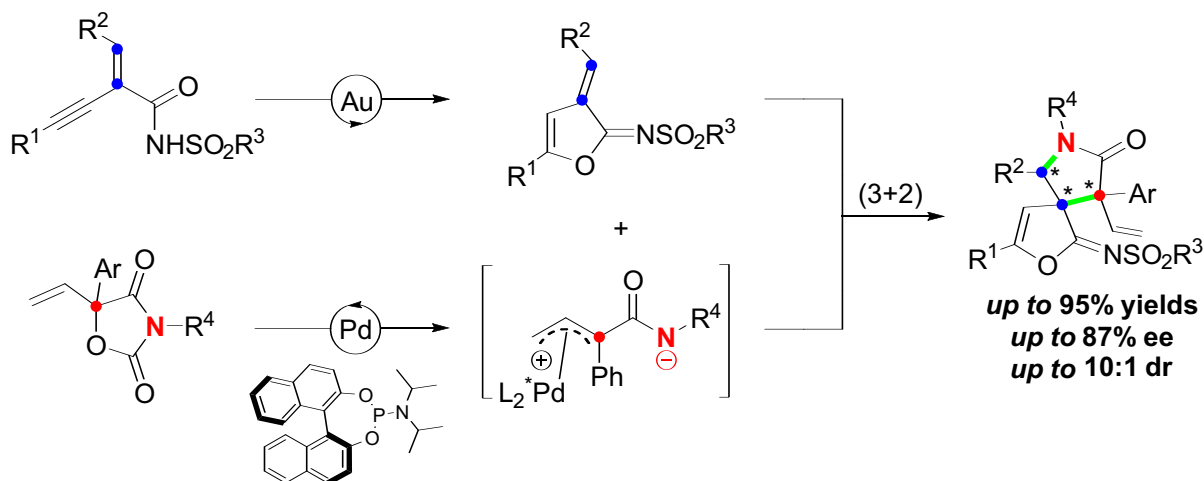
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Enantioenriched polycyclic architectures encompass a broad variety of natural and biologically significant compounds, and our group has long been interested in the development of stereoselective strategies for the synthesis of these scaffolds. For instance, we have previously worked a relay catalytic strategy using the complementary activations of gold catalysis and aminocatalysis for the stereoselective formation of enantioenriched furan-fused tetrahydropyridine motifs.<sup>1</sup> Meanwhile, our co-workers have developed a new dipolar precursor to generate an aza- $\pi$ -allylpalladium zwitterionic intermediate used in the synthesis of a variety heterocycles.<sup>2,3</sup> In this communication, we present an enantioselective spirocyclisation reaction that merge gold and palladium catalysis. This process involves a (3+2) cycloaddition of a  $\pi$ -allyl-palladium zwitterionic intermediate obtained from 2,4-vinyl-oxazolidinedione (VOxD) upon decarboxylation and readily available azadienes generated by gold-catalysed cycloisomerisation of ynamides. Our method efficiently gives rise to spiro skeletons, in yields ranging from 55% to 95%, diastereoselectivities from 2:1 dr to >10:1 dr and good levels of enantioselectivities (70% to 87%).



### References

- 1 Moreau, X. et Al. *Adv. Synth. Catal.* **2021**, 363, 4516–4520.
- 2 Archambeau, A. et Al. *Org. Lett.* **2023**, 25, 6453–6458.
- 3 Archambeau, A. et Al. *J. Org. Chem.* **2023**, 88, 9941–9945.