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Wacker oxidation with 2,5-diallyl PCUD derivatives

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Herein is reported a simple synthetic approach to functionalized polycyclic cage compounds related to Cookson's dione derivative by utilizing Claisen rearrangement, Diels–Alder reaction (DA), [2+2] photocycloaddition, Luche reduction, dehydration, and Wacker oxidation as key steps. Access to such hybrid molecules containing heterocycles and caged systems provides new opportunities in medicinal chemistry and access to high energy density materials (HEDMs). 2,5-Diallyl cage compounds containing diallyl moiety have been successfully functionalized into methyl ketones by Wacker oxidation.

Keywords: Claisen rearrangement, Dehydration, Luche reduction, PCUD, Wacker oxidation