

Indanone building blocks from lignin degradation products

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Valorization of lignocellulosic biomass for organic synthesis is a sustainable alternative to using petroleum resources. In particular, lignin degradation can allow access to valuable aromatic building blocks. However, the cleavage of lignin to desired structures is a very challenging task, far from being a mature field⁵. Although some chemical methods already exist, they are harsh and hardly controllable. Enzymatic methods are milder, but often only feasible only in small scale. Prof. Anett Schallmey's team, at the Technische Universität Braunschweig, is studying the enzymatic degradation of lignin to obtain functionalized synthons such as synrigyl-, guaiacol-3-hydroxy propanone and *p*-hydroxyphenyl-3-hydroxypropanones (SHP, GHP, and HHP respectively, Figure 1)². In the frame of a collaborative project with Prof. Schallmey, we tackled the synthetic valorization of the above products¹. We have now developed an original [elimination/Nazarov cyclization]^{3,4} domino sequence to obtain indanone scaffolds from HHP, GHP, and SHP.

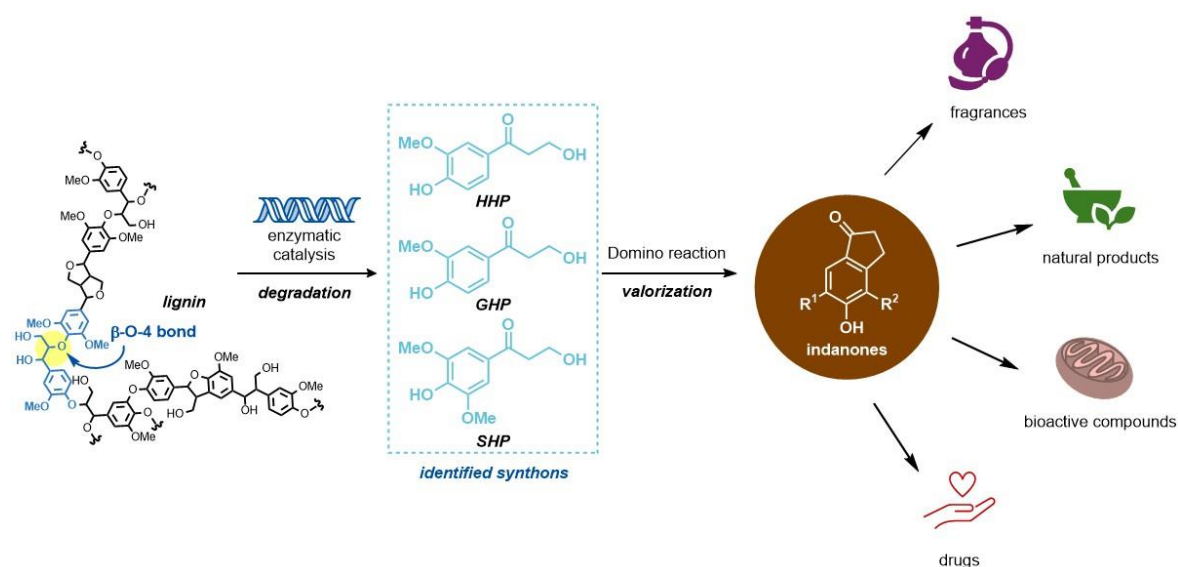


Figure 1. Accessing valuable building blocks from lignin enzymatic degradation product

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