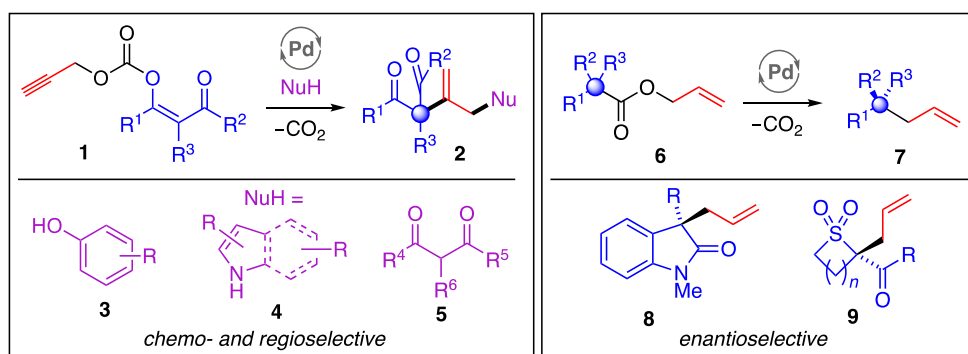


## DECARBOXYLATIVE CATALYTIC CONSTRUCTION OF QUATERNARY CARBON CENTRES

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The construction of quaternary carbon centres, particularly in enantioselective form, remains to be a formidable task to organic chemists.<sup>1</sup> Our research focuses on the development of new metal-catalysed approaches to the chemo-, regio- and stereoselective assembly of congested carbon centres. We have developed the first Pd-catalysed intermolecular coupling of nucleophiles with propargylic enol carbonates **1** that proceeds with high levels of *chemo-* and *regioselectivity* due to the decarboxylative nature of the reaction. This process installs two new bonds and an all-carbon quaternary centre in **2**, and enables the coupling of enolates with a range of nucleophiles derived from phenols **3**,<sup>2</sup> pyrroles and indoles **4**,<sup>3</sup> and 1,3-dicarbonyls **5**.<sup>4</sup> The analogous allylic electrophiles **6** can result in the *enantioselective* decarboxylative allylic alkylation of nucleophiles (**7**), and we have developed stereoselective routes to novel heterocyclic products for medicinal chemistry, including indoles **8**,<sup>5</sup> and cyclic sulfones **9**.<sup>6</sup>



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