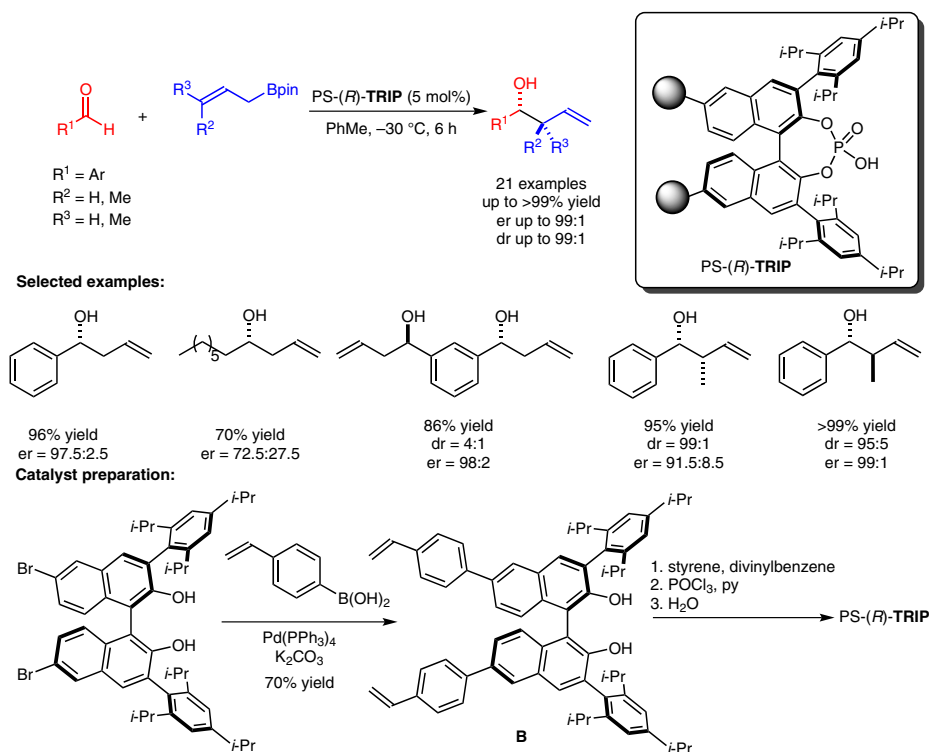


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Polystyrene-Supported TRIP: A Highly Recyclable Catalyst for Batch and Flow Enantioselective Allylation of Aldehydes

ACS Catal. **2016**, *6*, 7647–7651.

Allylboration of Aldehydes by Immobilized TRIP



Significance: The Pericàs and Rodríguez-Esrich groups report an enantioselective allylboration of aldehydes catalyzed by polystyrene-immobilized TRIP phosphoric acid. The catalyst was prepared by copolymerization of the BINOL derivative **B** with styrene and divinylbenzene, resulting in a functionalization level of 0.20–0.23 mmol/g. The desired homoallylic alcohols were obtained in generally good yields ($\leq 99\%$), enantioselectivities ($er \leq 99:1$), and diastereoselectivities ($dr \leq 99:1$). Interestingly, the scope was explored by using a single sample of the catalyst regenerated by simply washing the resin with a solution of HCl in EtOAc.

Comment: Heterogeneous catalysts offer the advantages of easy recyclability and simplified work-up procedures. Although methods for the immobilization of chiral phosphoric acids have been described, immobilization of the most successful acid (**TRIP**) had not previously been achieved. The authors applied their system to the continuous-flow catalytic enantioselective allylation of benzaldehyde, giving the corresponding product in 92% yield and an enantiomeric ratio of 95.5:4.5 with a turnover number of 282 and a productivity of 2.22 mmol/(h·g_{resin}).

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Synfacts 2017, 13(01), 0087 Published online: 19.12.2016
DOI: 10.1055/s-0036-1589800; Reg-No.: B08716SF

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Category

Organo- and Biocatalysis

Key words

allylboration

homoallylic alcohols

TRIP

immobilization

allylation

aldehydes

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