## Allylboration of Aldehydes

## Key words

allylboration
aldehydes
TRIP

(R)-TRIP

proposed TS er up to 99.5:0.5


## Selected examples:





with (E)-boronate: $96 \%$ yield (anti), er = 98:2 with (Z)-boronate: 95\% yield (syn), er = 97:3

Significance: A highly enantioselective allylboration of aldehydes catalyzed by the chiral Brønsted acid $(R)$-TRIP is reported by the authors. This transformation shows a broad substrate scope: aryl, heteroayrl, $\alpha, \beta$-unsaturated and aliphatic aldehydes can all be efficiently allylated. Furthermore, the crotylboration of benzaldehyde also proceeded smoothly with high diastereo- and enantioselectivity in the presence of this acid catalyst.

Comment: Simple starting materials and a commercially available catalyst make this protocol a useful and efficient method for the synthesis of enantioenriched homoallylic alcohols. A transition state where the boronate is activated by protonation of the boronate oxygen with a chiral phosphoric acid is proposed by the authors. To confirm this activation model, further mechanistic investigation may be required.

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[^0]:    sYnfacts Contributors: Benjamin List, Saihu Liao
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