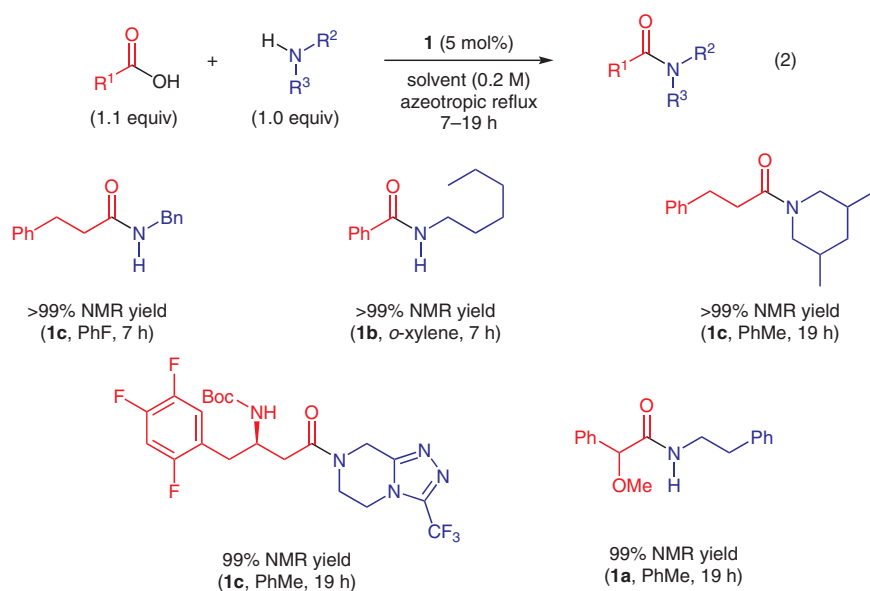
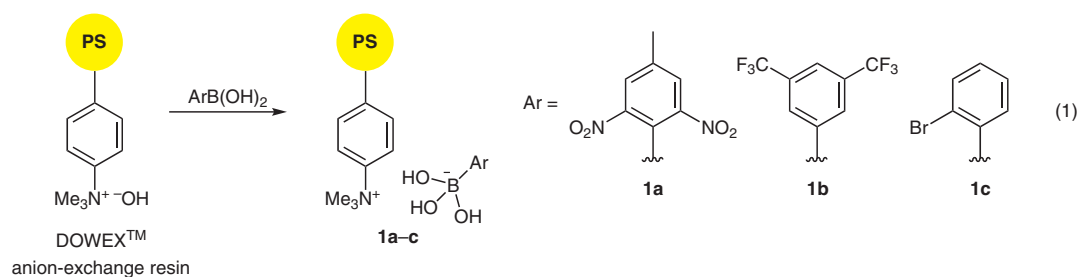


Direct Amide Condensation by Using Supported Boronates



Significance: Polystyrene resin bound quaternary ammonium boronates **1a–c** were prepared by treatment of a commercial anion-exchange resin with the appropriate arylboronic acids (eq. 1). Boronates **1a–c** catalyzed the dehydrative condensation of carboxylic acids with amines under azeotropic reflux conditions to give the corresponding amides quantitatively (eq. 2).

Comment: In the dehydrative condensation of 3-phenylpropanoic acid with benzylamine, catalyst **1b** was recovered by decantation and reused nine times without loss of its catalytic activity. ¹H NMR spectroscopy studies suggested that free arylboronic acids were released from the resin into the solution during the reaction.