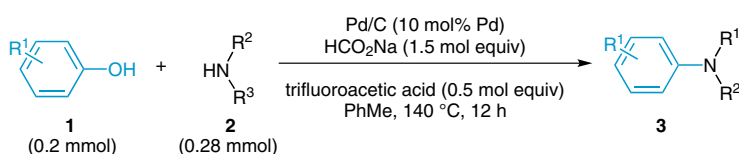
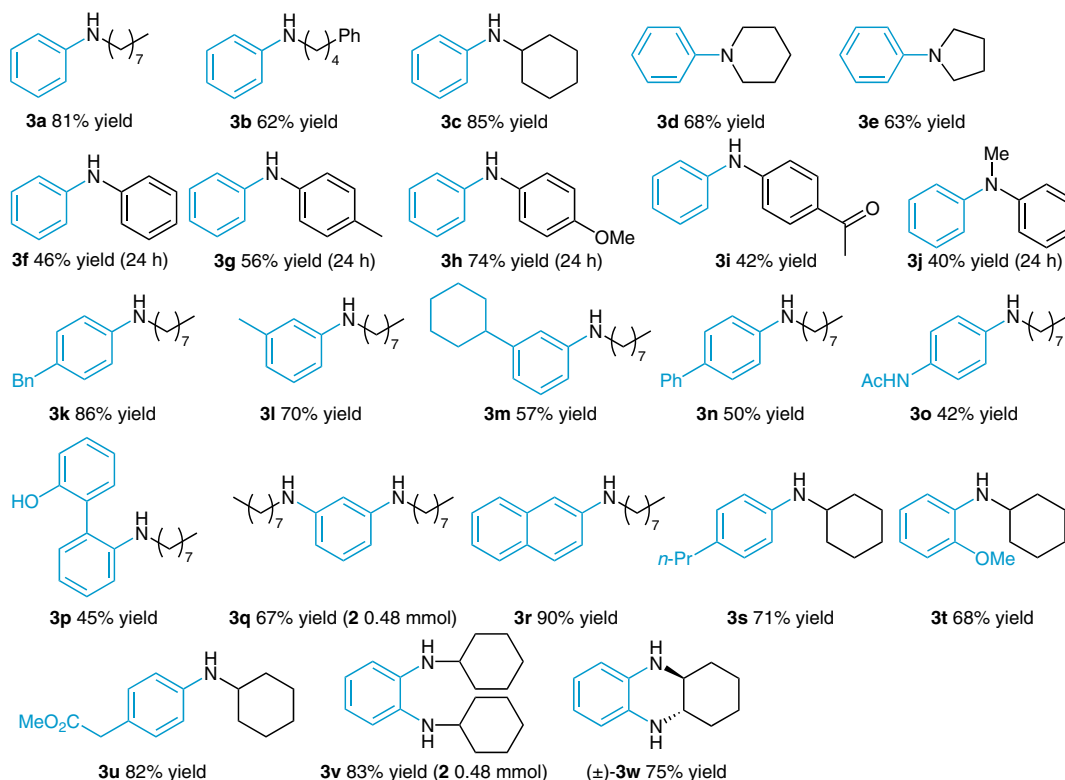


# Direct Cross-Coupling of Phenols with Amines Using Palladium on Carbon



## Selected results:



**Significance:** Palladium on carbon catalyzed the formal dehydrative direct cross-coupling of phenols with amines in the presence of sodium formate and trifluoroacetic acid in toluene to give the corresponding secondary or tertiary amines in  $\leq 90\%$  yield (33 examples).

**Comment:** When biphenol was used as the substrate, only one C–N bond was formed (**3p**), whereas two C–N bonds were formed in the reaction of resorcinol (**3q**). Product **3u**, bearing an ester group, was obtained without ester–amine exchange. A nitrogen-containing heterocyclic product **3w** was obtained from the reaction of catechol with cyclohexane-1,2-diamine.