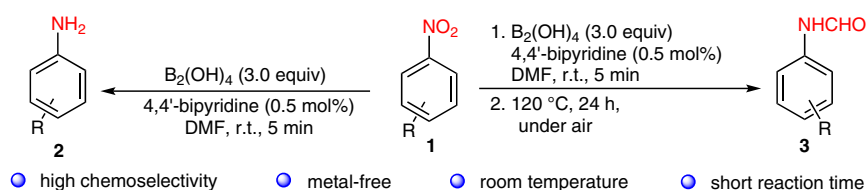
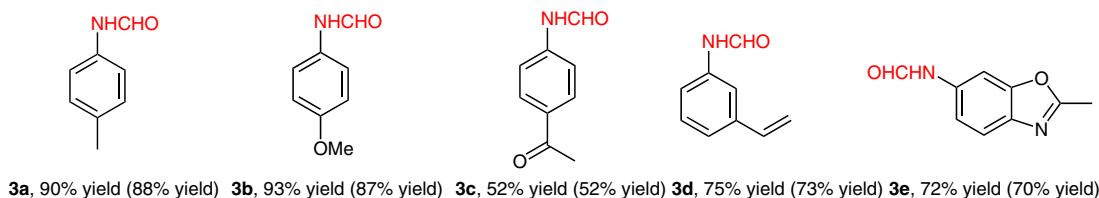
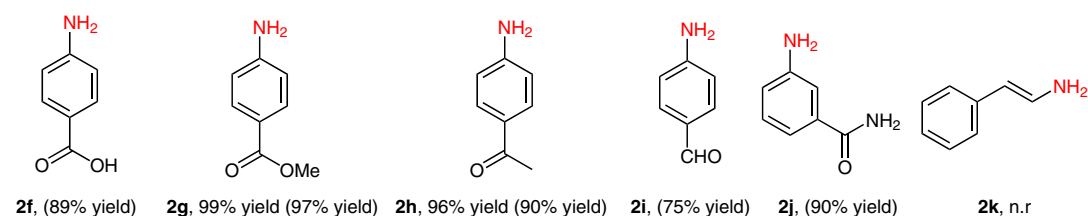
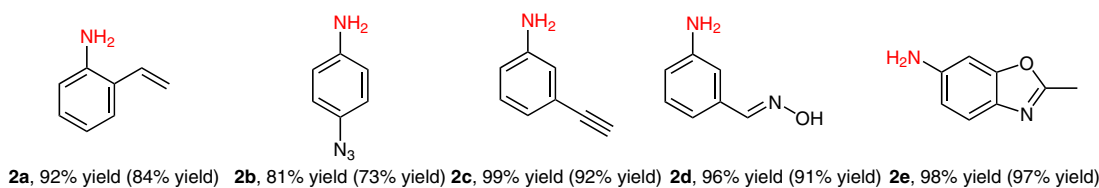


Metal-Free Reduction of Aromatic Nitro Compounds



Representative examples:



Yields determined by ^1H NMR, isolated yields in parentheses.

Significance: This report describes a facile method for the synthesis of aromatic amines **2**. It discussed the development of a metal-free, fast, and highly chemoselective process for the reduction of aromatic nitro compounds to the corresponding aromatic amines at room temperature by using $\text{B}_2(\text{OH})_4$. This protocol does not require flammable hydrogen gas, high pressures, or metal catalysts. In addition, the ambient temperature and short reaction times of this process provide an efficient and accessible method for nitro group reduction.

Comment: This method provides a 4,4'-bipyridine-catalyzed one-pot synthesis of aromatic amines in one step using $\text{B}_2(\text{OH})_4$. The approach provides an efficient and accessible method for nitro group reduction at ambient temperature and with short reaction times (~5 min). Remarkably, such challenging functional groups as vinyl, internal alkene, ethynyl, carbonyl, nitrile, azide, amide, and halides were well tolerated. A selective method for the N-formylation of nitroarenes to give formamides **3** is also reported.