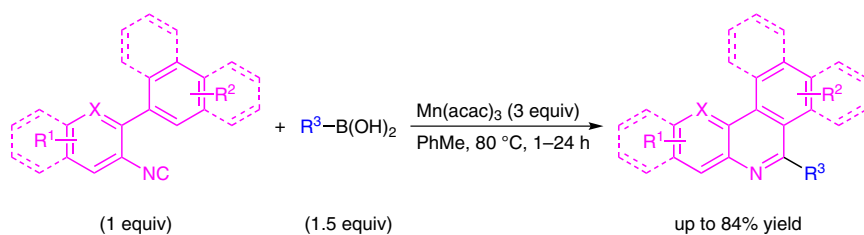
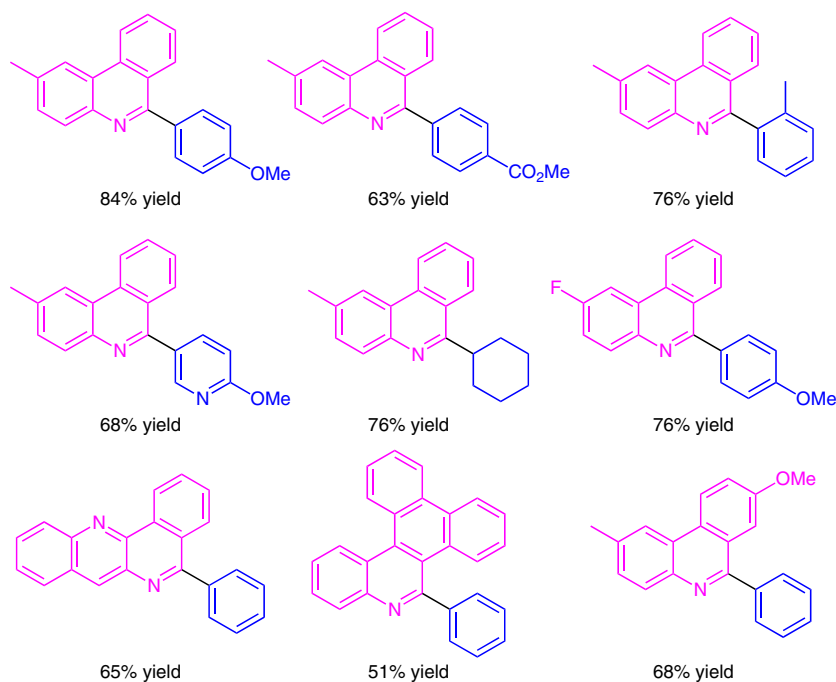


Synthesis of Phenanthridine Derivatives via Oxidative Cyclization



X = CH, N
R¹ = H, Me, F, Cl
R² = H, F, OMe
R³ = Ar, HetAr, Alk

Selected examples:



Significance: A straight-forward synthesis of a broad range of phenanthridine derivatives via a manganese-mediated annulation of 2-isocyanobiaryls with organoboronic acids has been disclosed. This rapid and divergent reaction furnishes the corresponding phenanthridine derivatives in good yield.

Comment: The reported reaction shows a simple pathway for the synthesis of phenanthridine frameworks out of readily accessible starting materials. Furthermore, mechanistic studies indicate that the reaction proceeds by the intramolecular homolytic aromatic substitution of an imidoyl radical intermediate.