Abstract

The Birch reduction of both pyrroles and furans can be quenched with an aldehyde electrophile, thus constituting a reductive aldol reaction. Although the reaction was not stereoselective, the pyrrolines derived from reduction of pyrroles could be oxidised and then reduced with NaBH₄ to provide syn-aldol adducts with high levels of stereoselectivity. The relative stereochemistry of two adducts was proven by X-ray crystallography.