

Catalytic Ring Opening of α -Epoxyketones Using DDQ in Methanol Solution at Room Temperature and under Reflux Conditions in Excellent Yields

Hamid R. Memarian, Ali Saffar-Teluri, and Mohsen Khosravi-Babadi

University of Isfahan, Faculty of Science, Department of Chemistry, 81746-73441, Isfahan, Iran

Reprint requests to Prof. H. R. Memarian. Tel: +98-311-793 2707. Fax: +98-311-668 9732.

E-mail: hrmemarian@yahoo.com; memarian@sci.ui.ac.ir

Z. Naturforsch. **2007**, 62b, 1030 – 1034; received December 25, 2007

Catalytic ring opening reactions of α -epoxyketones by 2,3-dichloro-5,6-dicyano-1,4-benzoquinone (DDQ) in methanol solution at r.t. and under reflux conditions resulted in the formation of α -hydroxy- β -methoxyketones through C $_{\beta}$ –O bond cleavage in excellent yields. Whereas the type and nature of the additional substituent affects the rate of ring opening, the effect of temperature has an extreme influence on the rate of reactions. Cyclic voltammetric studies of DDQ at 15 °C and 33 °C support the increased electron-acceptor ability of DDQ by the increasing of temperature.

Key words: Ring Opening, α -Epoxyketones, 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone