Microwave Assisted Dihydroxylation of Olefins

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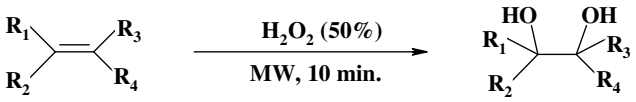
1,2-Dihydroxy compounds are important industrial compounds used as fragrant chemicals [1], photographic materials, lubricants, drugs and foods [2]. Generally both *syn* and *anti* 1,2-diols are prepared either from epoxides in presence of metal oxides or other acids and acidic reagents [3] or by dihydroxylation of olefins by potassium permanganate [4], osmium tetroxide [5] etc. However from the point of atom efficiency the performance of these reagents is very low [6]. In that context control use of hydrogen peroxide provide a better solution [7]. A less energy intrinsic solvent free condition for selective olefin dihydroxylation is therefore highly desirable. In our continuous effort for preparation of epoxides through a green oxidative pathway from olefins, we observed that 1,2-diols are formed on exposure of the different olefinic substrates to microwave in presence of hydrogen peroxide (50%) for 10 minutes in excellent yields (Scheme1). Details of the reaction have been discussed in the full paper.



Scheme 1

Referances

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