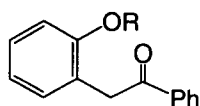


PHOTOCHEMISTRY OF ALPHA-(ORTHO-ALKOXYPHENYL)
ACETOPHENONES

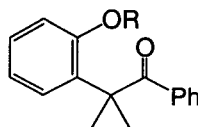
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Dihydrobenzopyran is an important backbone structure in numerous natural products including coumarins, flavonoids, rotenoids, chromene glycosides, and others. In the course of investigation into photoinduced remote hydrogen abstraction reaction, it was discovered that the dihydrobenzopyran skeleton could be constructed by the Yang photocyclization of alpha-(o-alkoxyphenyl)acetophenones in high chemical yields. The reaction is a rare example of epsilon-hydrogen abstraction reactions. Accordingly several analogues of alpha-(o-alkoxyphenyl) acetophenones shown below were synthesized and their photochemical reactivities were studied systematically. These compounds showed a wide range of reactivities depending on molecular structures of the substrates. Interestingly the stereochemical outcome could be well tuned by substitution patterns at alpha to carbonyls. The results were consistent with a recent discovery of reversed diastereoselectivity of the Yang photocyclization of alpha-(ortho-alkylphenyl)acetophenones upon introducing a cyclopropyl group at alpha position to carbonyls. In this report the preliminary results on photochemical reactivities of alpha-(o-alkoxyphenyl)acetophenones will be described in detail.



1: R = ethyl
2: R = benzyl
3: R = isopropyl



4: R = ethyl
5: R = benzyl
6: R = cyclopropylmethyl

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