

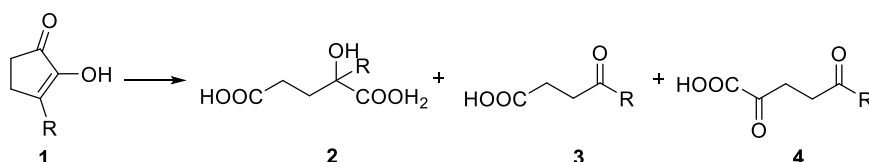
AEROBIC CASCADE OXIDATION OF SUBSTITUTED CYCLOPENTANE-1,2-DIONES USING METALLOPORPHYRIN CATALYSTS

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Currently, the development of sustainable chemical processes is one of the major challenges in chemical science and engineering. Over the past decades, various transition metal catalysts have been successfully utilized to convert alkenes to epoxides or carbonyl compounds using different oxidants [1,2,3]. From an environmental point of view, the most useful terminal oxidant is atmospheric oxygen and among catalysts, synthetic metalloporphyrins are very prospective. While they have not been used extensively together, it is of great importance to develop and use this environmentally friendly method of oxidation for obtaining valuable biologically active compounds.

Herein we report a new facile and environmentally benign method for the aerobic cascade oxidation of different substituted cyclopentane-1,2-diones by using metal porphyrins as catalysts, yielding intermediates of important biologically active compounds. This method is operationally simple, does not require the use of harmful oxidants and reductants, and can be employed under ambient conditions.



Scheme 1 Oxidation products of cyclopentane-1,2-dione 1.

References

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