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for the discovery

Ozonolysis: How Alkene Are You to Access Novel Building Blocks?

Access to Derivatisable Building Blocks for Medicinal Chemistry Programs

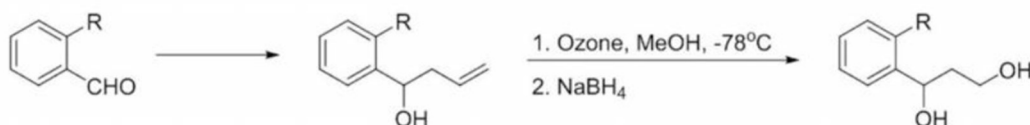
Nearly 200 years since its first discovery, ozonolysis remains a valuable technique for rapid access to a diverse range of small oxygenated molecules, including alcohols, aldehydes, ketones and carboxylic acids. The outcome of the reaction can be easily tuned to provide access to highly functionalised products. However, relatively few laboratories have access to modern, specialised ozonolysis equipment and so the technique remains under-utilised, as do the synthetically useful building blocks which can be generated from it.

Charnwood Molecular has invested in the Triogen LAB2B ozone generator, which is a versatile, small air-cooled unit designed for benchtop use and incorporates function indicators, feed gas flowmeter and variable output controls. The LAB2B is capable of producing ozone concentrations up to 10% volume, allowing syntheses to be performed on scales from milligrams and grams upwards.

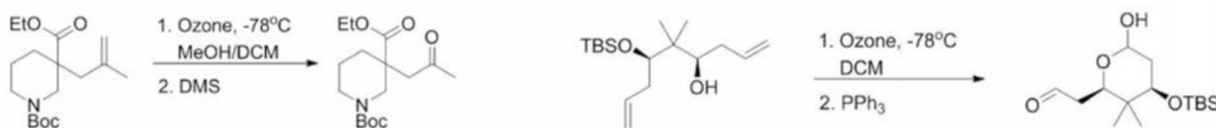


Triogen LAB2B Ozone Generator

Building blocks prepared within our laboratories include 1,3-diols by reductive work-up, where the alkene handle to allow ozonolytic functionalisation has been pre-installed on the scaffold of choice using carbanion chemistry:-



The versatility of the reaction to provide synthetically useful building blocks is further exemplified by a survey of the literature and includes the preparation of functionalised piperidinesⁱ and tetrahydropyransⁱⁱ:-



Charnwood Molecular can provide ozonolysis chemistry services to our clients as part of our offering to enhance and accelerate their Drug Discovery projects, either through the preparation of key reference compounds or the provision of key project compounds from collaborative R&D programs.

ⁱ Yamashita, T. *et al Bioorg. Med. Chem. Lett.*, 2011, 21 (21), 6314

ⁱⁱ Jiang, X. *et al J. Am. Chem. Soc.*, 2005, 127 (32), 11254

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