BIOTECHNOLOGY

Edited by C. F. PHELPS and P. H. CLARKE

The fourteen contributions forming this volume were presented at a London meeting of the Biochemical Society including the Society's Forty-Eighth Symposium 'Biotechnology', in December 1982. With today's increasing pressures to develop latest laboratory findings into practical industrial processes as quickly as possible the chosen theme of this Symposium was a timely one. The papers represent up-to-date reports from international biochemists whose work is of direct relevance to the wide areas of interests concerned with biotechnology, together with glimpses of the early development of its techniques and a look at its exciting future.

List of contents and authors:

257 pp. ISBN 0 904498 15 8 £25.00 (US $57.50)

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Oxidizing Agents
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Chemical oxidation of organic molecules is often vital to natural-product synthesis and structure determination. New reagents and applications to perform these transformations with greater efficiency and ease of workup are regular topics in the literature. Examples of recent applications in this area are presented below.

3-Chloroperoxybenzoic acid (MCPBA):
Baeyer-Villiger oxidation

trans Oxygenation

2,3-Dichloro-5,6-dicyano-1,4-benzoquinone (DDQ):
Benzylic oxidation

Pyridinium dichromate (PDC):

Pyridinium chlorochromate (PCC):
Direct route to cholest-5-en-3-one

Acetylenic ketones

Osmium tetroxide/sodium periodate:
Glycol formation and cleavage

Lead tetraacetate

Trimethylamine-N-oxide:
Glycol formation

 tert-Butyl hydroperoxide (TBHP), anhydrous, 3 M solution in toluene:
Epoxidation

Dess-Martin periodinane [1,1,1-triacetoxy-2,1-benzoxolido-3(3H)-one]:
Oxidation of 1° and 2° alcohols to aldehydes and ketones

References:

27,016-4 tert-Butyl hydroperoxide, anhydrous, 3 M solution in toluene

25 g $8.90; 100 g $24.75

26,270-0 3-Chloroperoxybenzoic acid
100 g $33.00; 500 g $138.00; 1 kg $220.35

27,462-3 Dess-Martin periodinane 1 g $6.00; 5 g $20.00

13,909-9 1,8-Diazabicyclo[5.4.0]undec-7-ene, 96% (DBU) 25 g $11.45; 100 g $31.30; 500 g $97.75

D6,040-0 2,3-Dichloro-5,6-dicyano-1,4-benzoquinone, 98%
10 g $15.00; 100 g $126.00

18,519-1 Lead tetraacetate 25 g $6.20; 100 g $15.00

50 g $57.00

21,764-6 Manganese(IV) oxide, activated 100 g $18.90

500 g $71.40

20,103-0 Osmium tetroxide, 99.8% 250 mg $9.10

1 g $19.95

19,014-4 Pyridinium chlorochromate, 98% 25 g $6.40

100 g $15.50; 500 g $53.50

21,469-8 Pyridinium dichromate, 98% 100 g $17.00

500 g $56.00

21,004-8 Sodium periodate, 99% 100 g $21.50

500 g $72.00

17,686-9 Trimethylamine-N-oxide dihydrate, 98%
25 g $17.75; 100 g $44.75