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## Nucleosides, Nucleotides and Nucleic Acids

Publication details, including instructions for authors and subscription information:

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### Trichloro-tert.-butyl-cyclic-enediol-phosphate (TCB-CEP), Proposed Reagent for the Syntheses of Oligonucleotides Using the Triester Approach

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**To cite this Article** Lemmen, Peter(1985) 'Trichloro-tert.-butyl-cyclic-enediol-phosphate (TCB-CEP), Proposed Reagent for the Syntheses of Oligonucleotides Using the Triester Approach', *Nucleosides, Nucleotides and Nucleic Acids*, 4: 1, 247 — 248

**To link to this Article:** DOI: 10.1080/07328318508077873

**URL:** <http://dx.doi.org/10.1080/07328318508077873>

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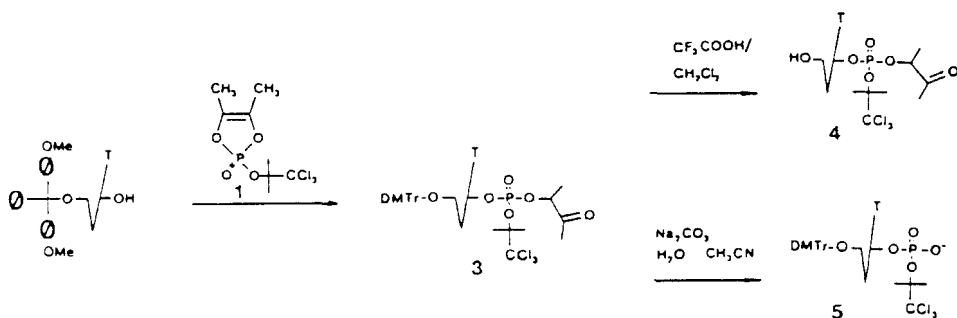
TRICHLORO-TERT.-BUTYL-CYCLIC-ENEDIOL-PHOSPHATE (TCB-CEP),  
PROPOSED REAGENT FOR THE SYNTHESES OF OLIGONUCLEOTIDES  
USING THE TRIESTER APPROACH

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Summary: Protected nucleosides, phosphorylated using 4,5-dimethyl-2-oxo-2-trichloro-tert.-butyl-1,3,2 $\lambda^5$ -dioxaphospholene, can be cleaved to yield either 5'- or 3'-building blocks for triester syntheses.

Reaction of the title compound 1 (1 is prepared and reacts in analogy to its methyl analog<sup>1)</sup>) with 5'-DMOTr-nucleosides yields 3'-trichloro-tert.-butyl-acetoynyl-phosphates. They can be selectively either detritylated in acidic medium or the acetoynyl group cleaved in basic medium. So 3'- and 5'-building blocks for oligonucleotide syntheses following a triester strategy<sup>2)</sup> are at hand. Coupling proceeds with benzene sulfonyl tetrazole. Because of their lipophilic nature all intermediates can easily be purified on silica gel. The phosphate protecting trichloro-tert.-butyl group can be cleaved by reductive fragmentation<sup>3)</sup>.



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- This work was supported by SFB 145 "Biokonversion", München.