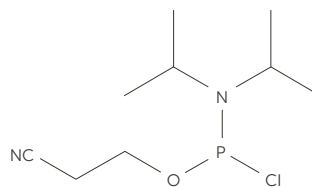


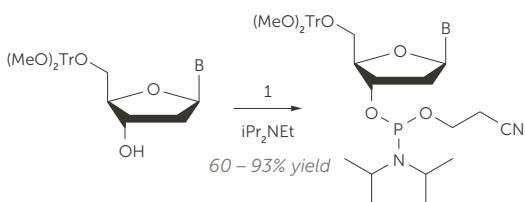
2-Cyanoethyl-*N,N*-diisopropylchloro-phosphoramidate

Product number: 399 | Alternative name: ChloroPhos Reagent | CAS number: 89992-70-1
 $C_9H_{18}ClN_2OP$ | Molecular weight: 236.68

2-Cyano-*N,N*-diisopropylchlorophosphoramidite¹ is an air- and moisture-sensitive liquid (b.p. 103° – 105°C [217° – 221°F]/0.8 mm) that must be handled in an inert atmosphere and stored under refrigeration to prevent thermal degradation over time. It is a phosphitylation reagent used in the phosphorylation of oligonucleotides.

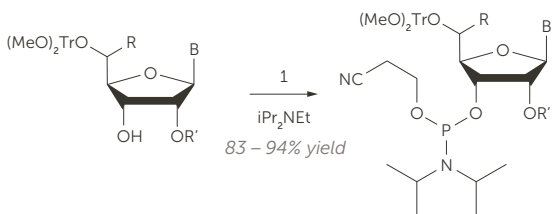


SYNTHESIS OF DEOXYRIBONUCLEOSIDE PHOSPHoramidites¹



B = protected bases of Gua and Thy
 (MeO)₂Tr = bis(4-methoxyphenyl)phenylmethyl

SYNTHESIS OF RIBONUCLEOSIDE PHOSPHoramidites²

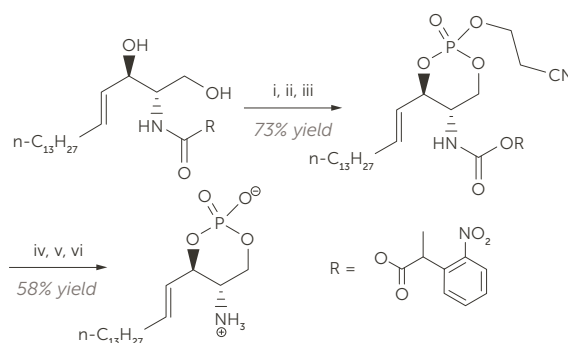


B = protected bases of uracil, adenine, and guanine

R = H, CH₂O(CH₂)₅Br

R' = CH₂OSi(iPr)₃, CH₂O(CH₂)₅Br

PREPARATION OF CYCLIC 1,3-PHOSPHATES³



i = 1, *iPr*₂NEt, CH₂Cl₂

ii = tetrazole

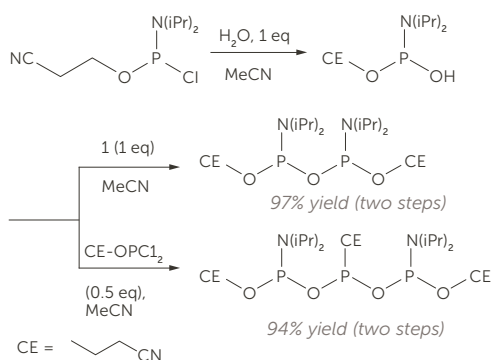
iii = *t*-BuOOH

iv = Et₂NH, EtOH, 40°C

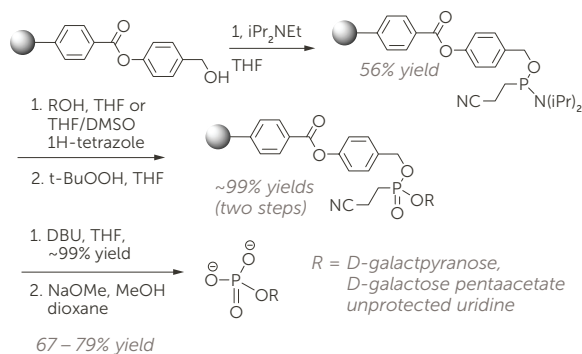
v = Dowex 50 (H⁺), MeOH

vi = *hν*, CHCl₃/MeOH (60/40)

PREPARATION OF DIPHOSPHITYLATING AND TRIPHOSPHITYLATION REAGENTS⁴



SOLID PHASE PHOSPHORYLATION OF CARBOHYDRATES AND NUCLEOSIDES⁵



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References

- ¹ Lang, H., Gottlieb, M., Schwarz, M., Farkas, S., Schulz, B.S., Himmelsbach, F., Charubala, R., and Pfeleiderer, W., *Helv. Chim. Acta*, **1999**, *82*, 2172.
- ² Wu, X. and Pitsch, S., *Helv. Chim. Acta*, **2000**, *83*, 1127.
- ³ Qiao, L. and Kozikowski, A.P., *Tetrahedron Lett.*, **1998**, *39*, 8959.
- ⁴ Ahmadibeni, Y. and Parang, K., *Org. Lett.*, **2005**, *7*, 5589.
- ⁵ Parang, K., Fournier, E.J.-L., and Hindsgaul, O., *Org. Lett.*, **2001**, *3*, 307.