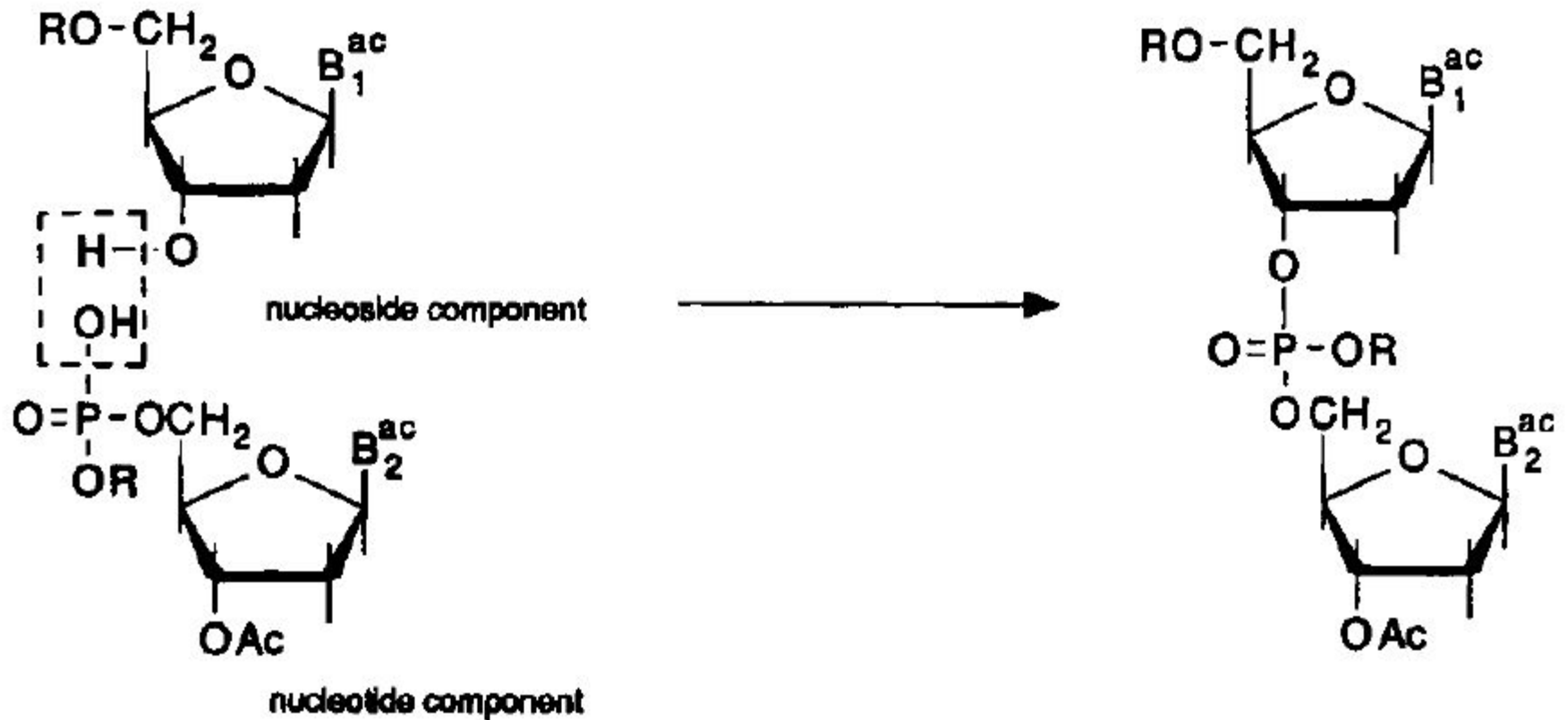


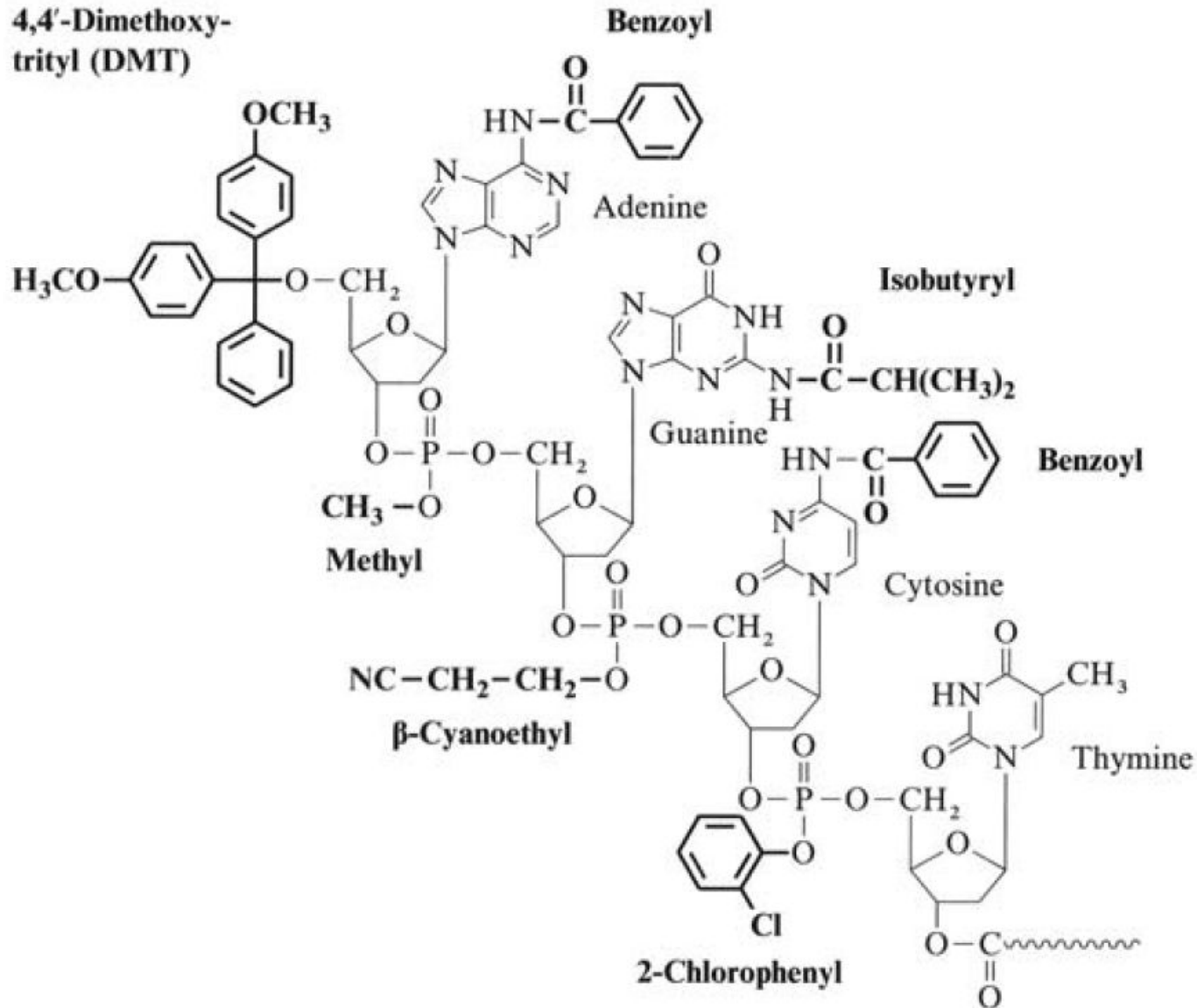
# Синтез олигонуклеотидов

# Основная реакция

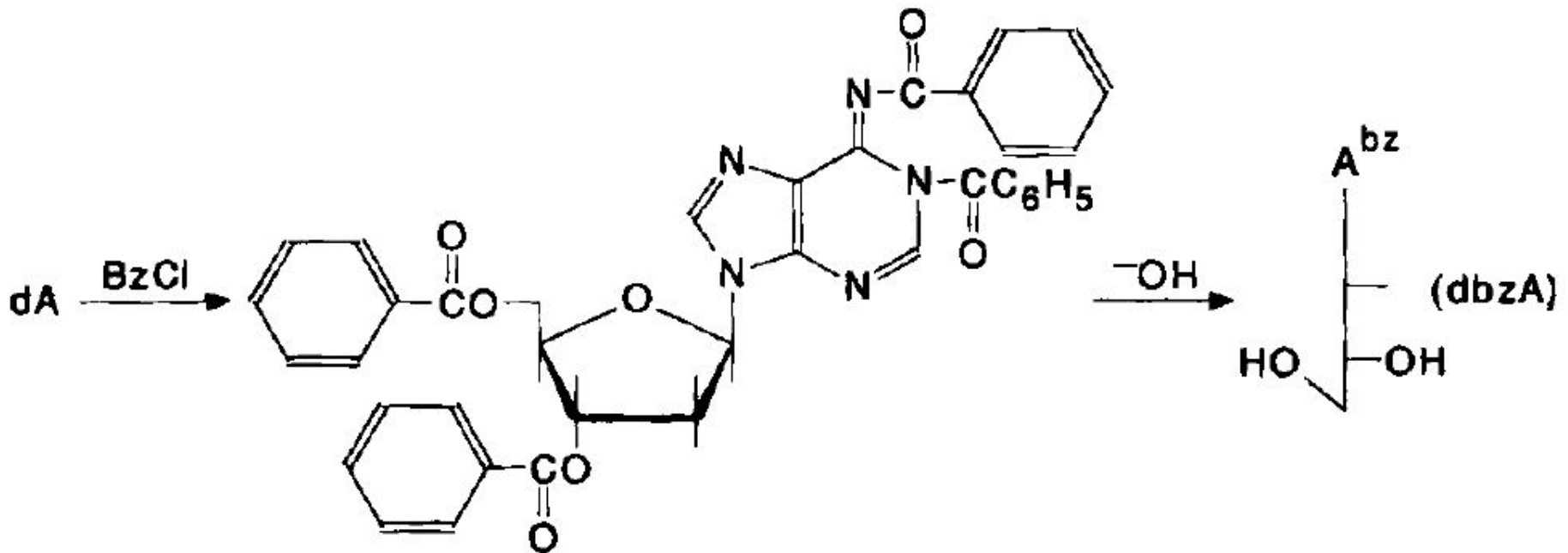


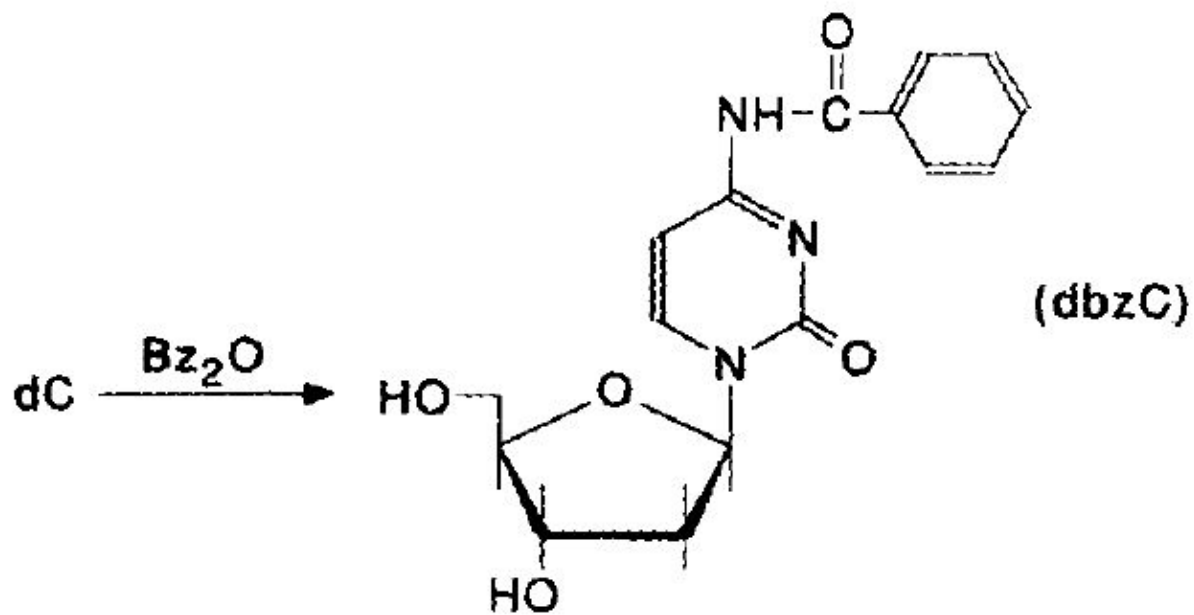
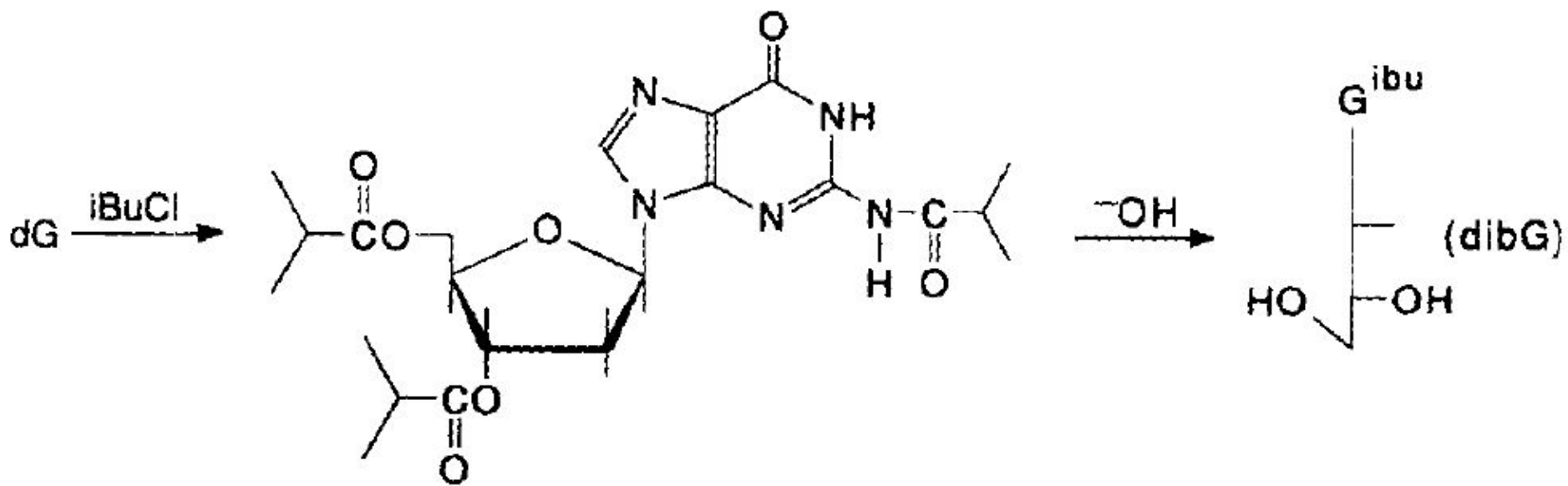
# Защитные группы нуклеотидного синтеза

4,4'-Dimethoxy-  
trityl (DMT)

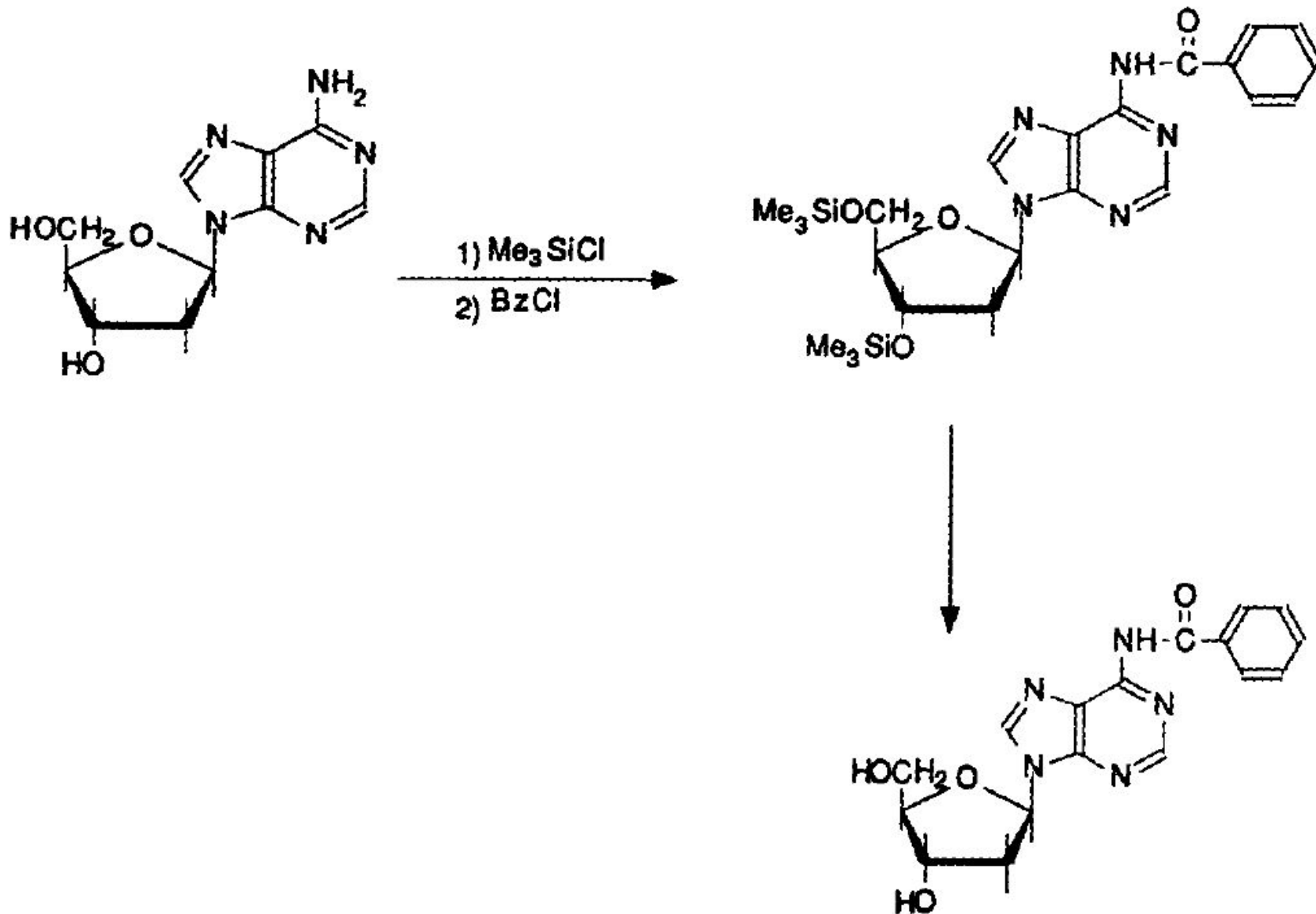


# Подготовка исходных нуктеозидов

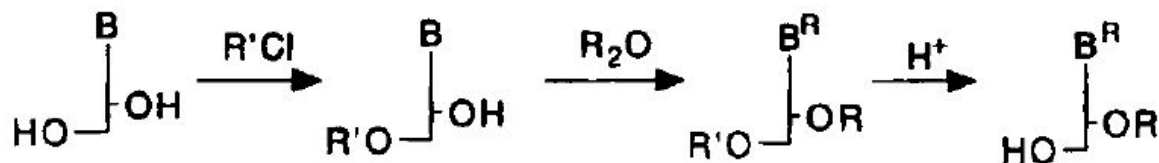
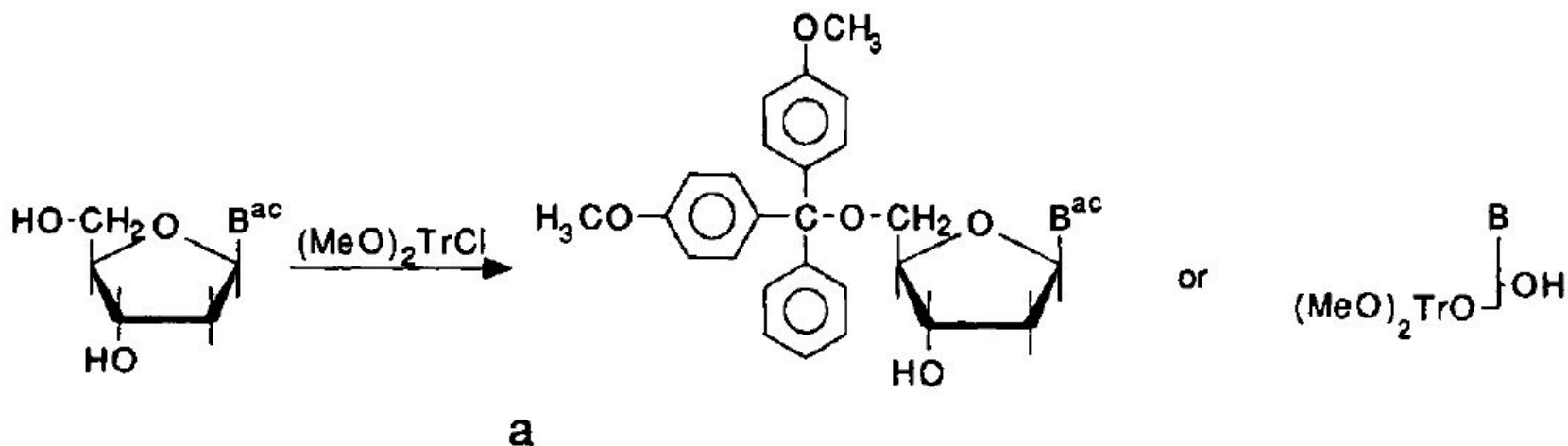




# N-бензилоксиаденозин

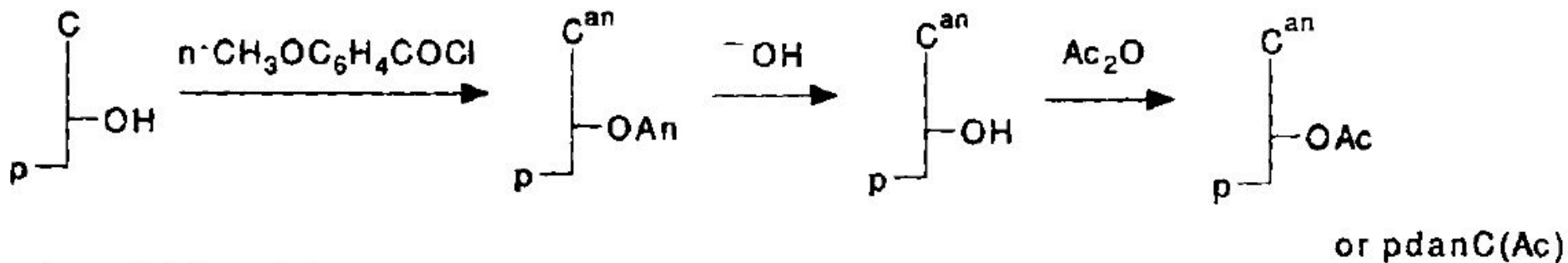
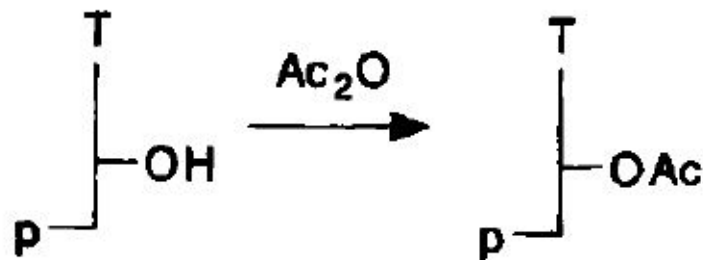


# Защита гидроксильных групп углеводного фрагмента



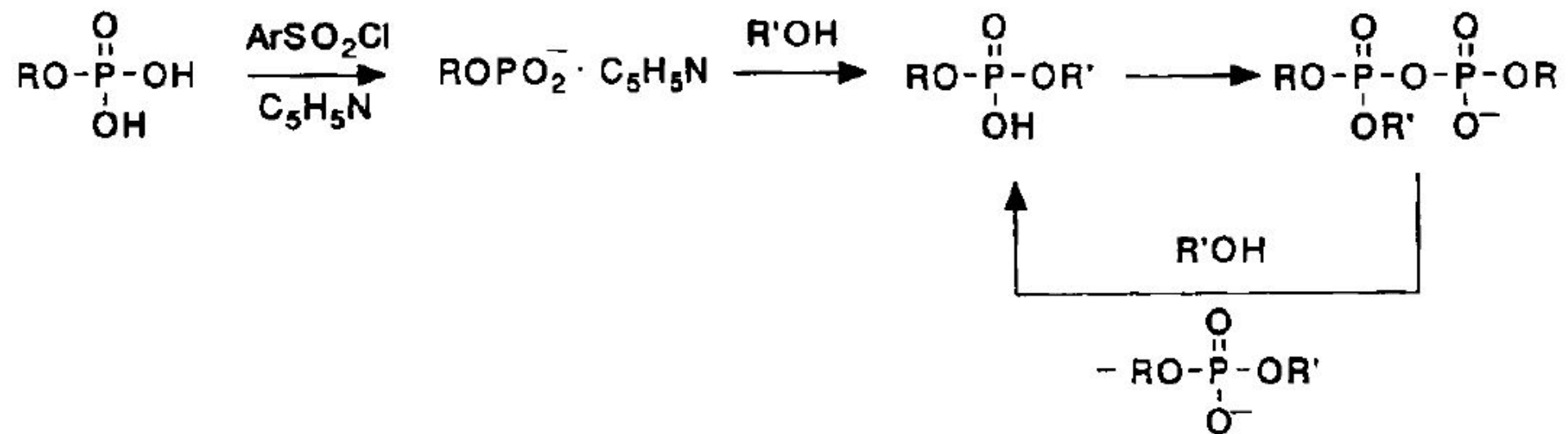
$R = \text{CH}_3\text{CO}, (\text{CH}_3)_2\text{CHCO}, \text{C}_6\text{H}_5\text{CO}, n\text{-CH}_3\text{OC}_6\text{H}_4\text{CO}; R' = \text{Tr}, \text{MeOTr}, (\text{MeO})_2\text{Tr}$

# Подготовка исходных нуклеотидов



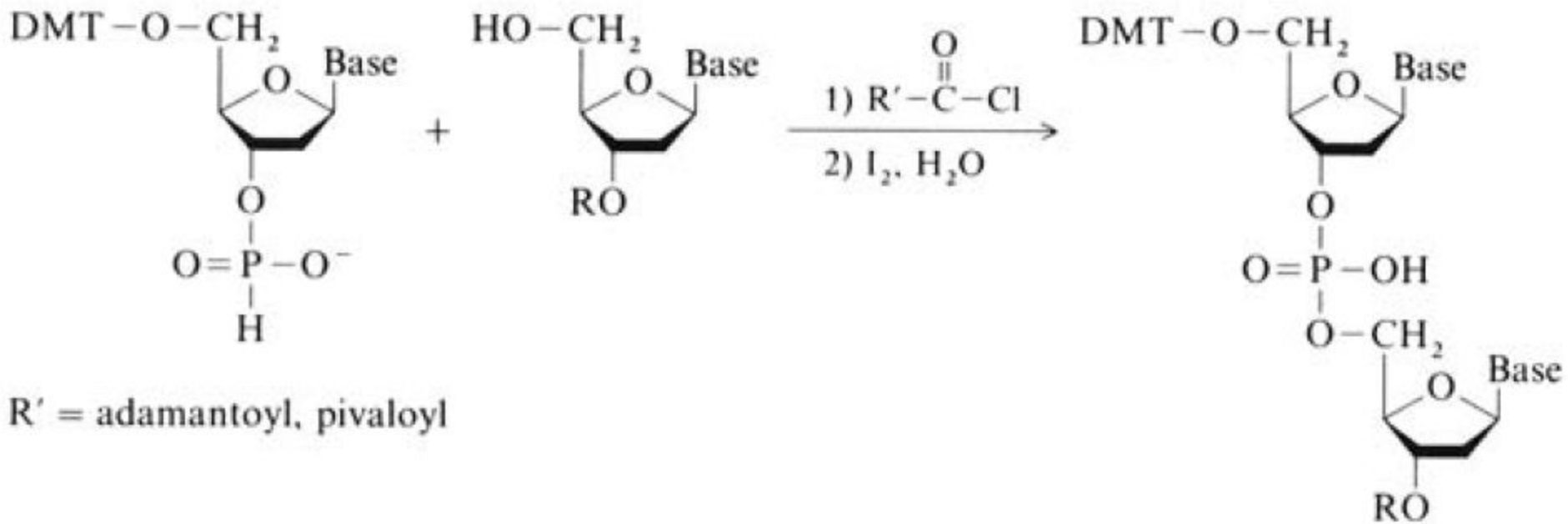


# Фосфорилирование

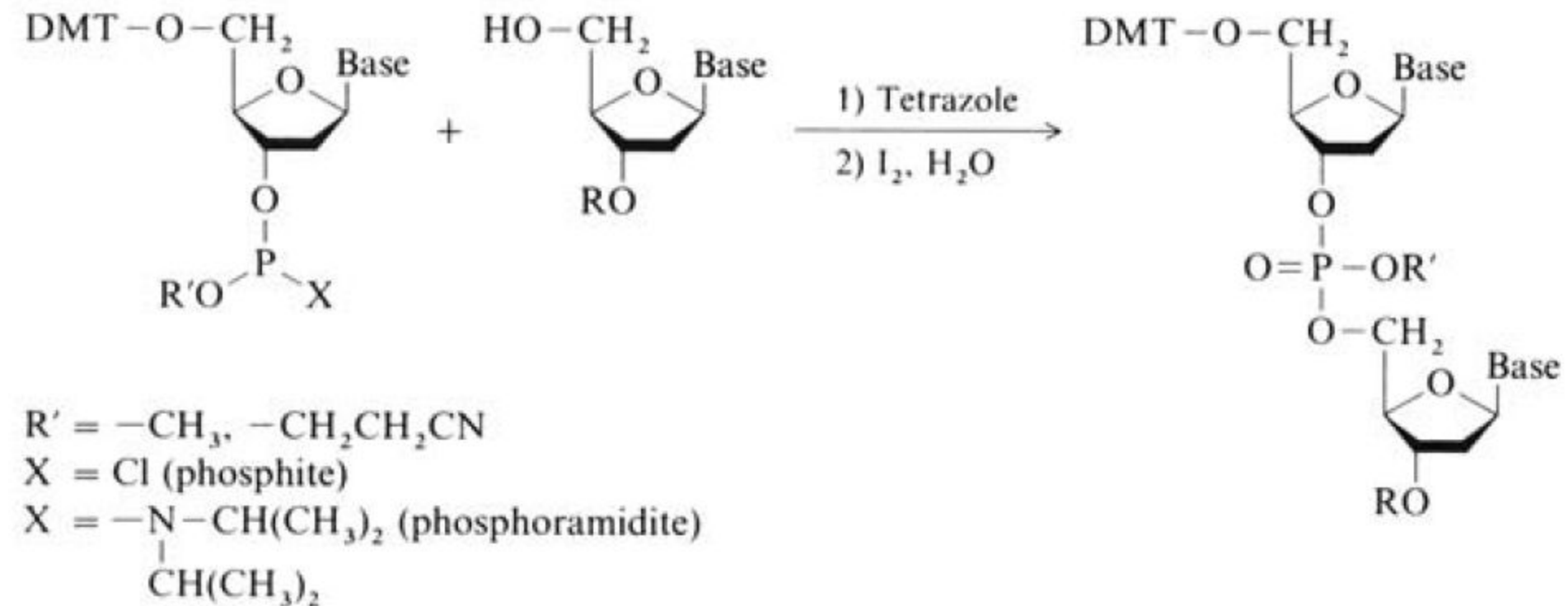
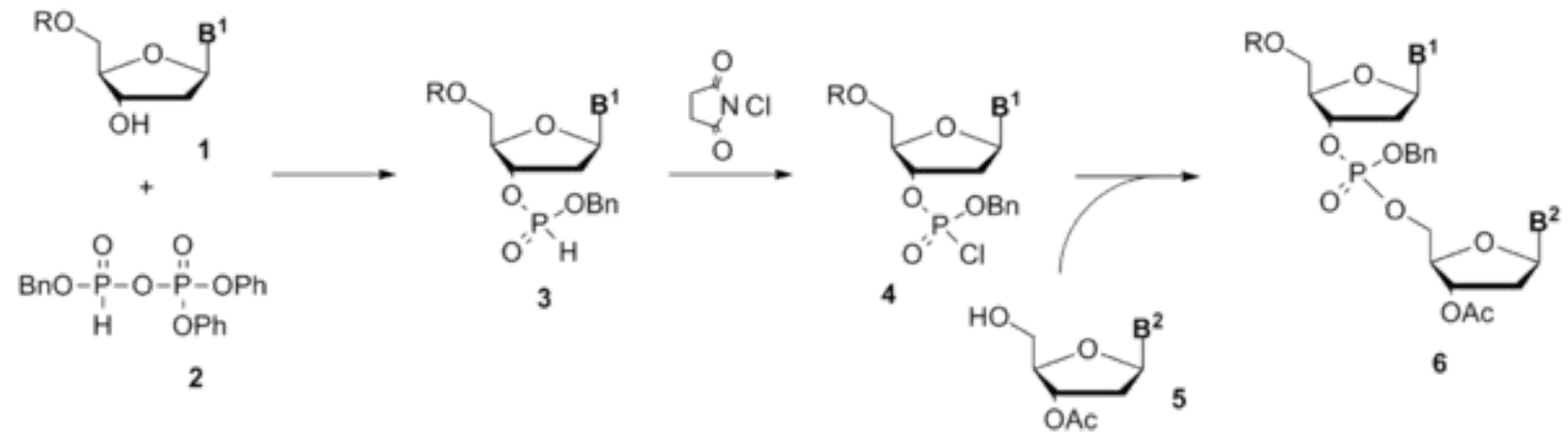


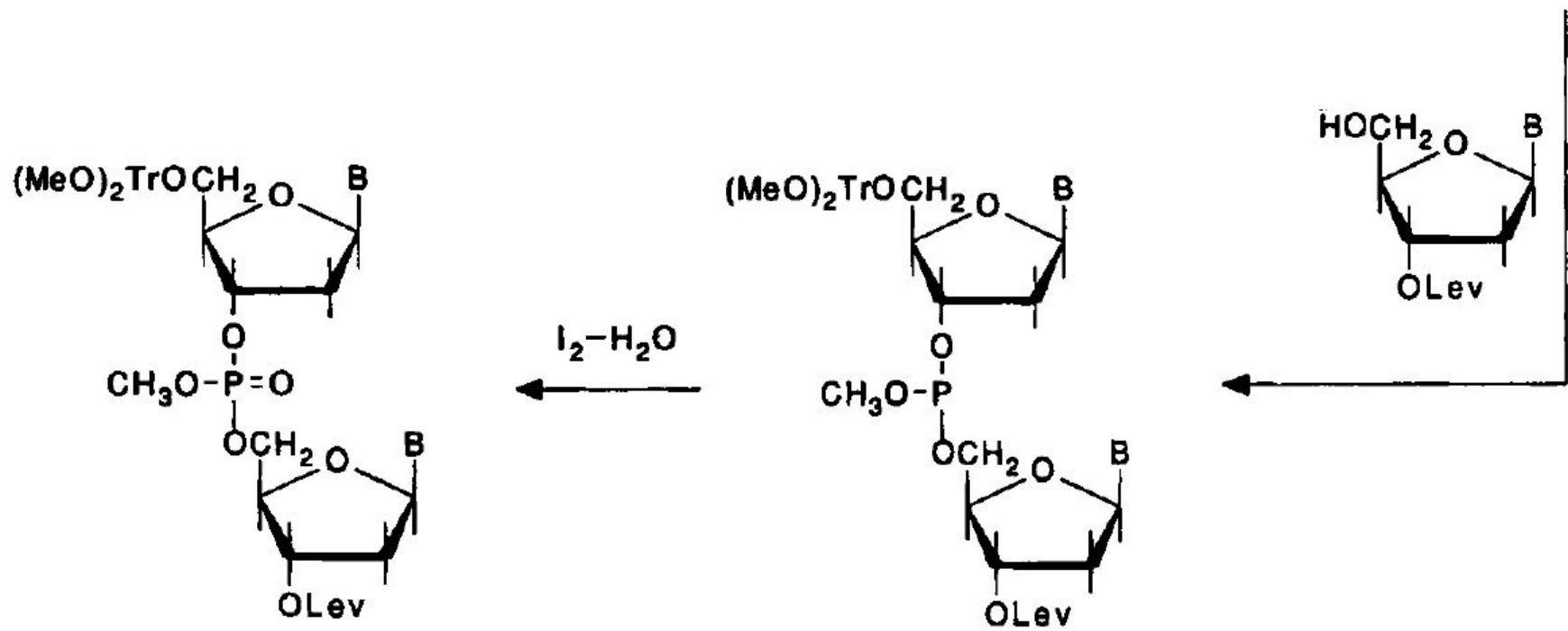
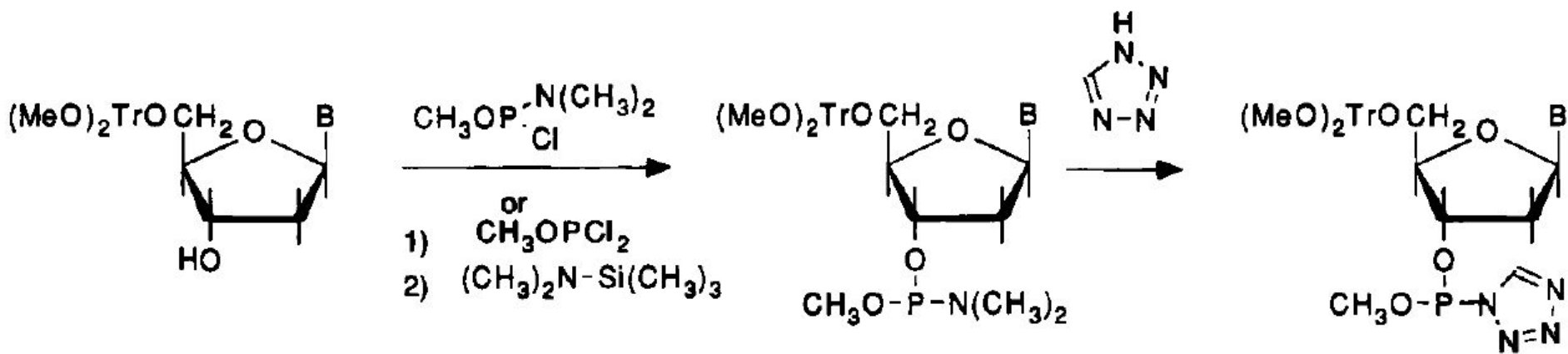
# H-фосфонатный метод

начало 1950-х годов группа Александра Тодда из Кембриджа



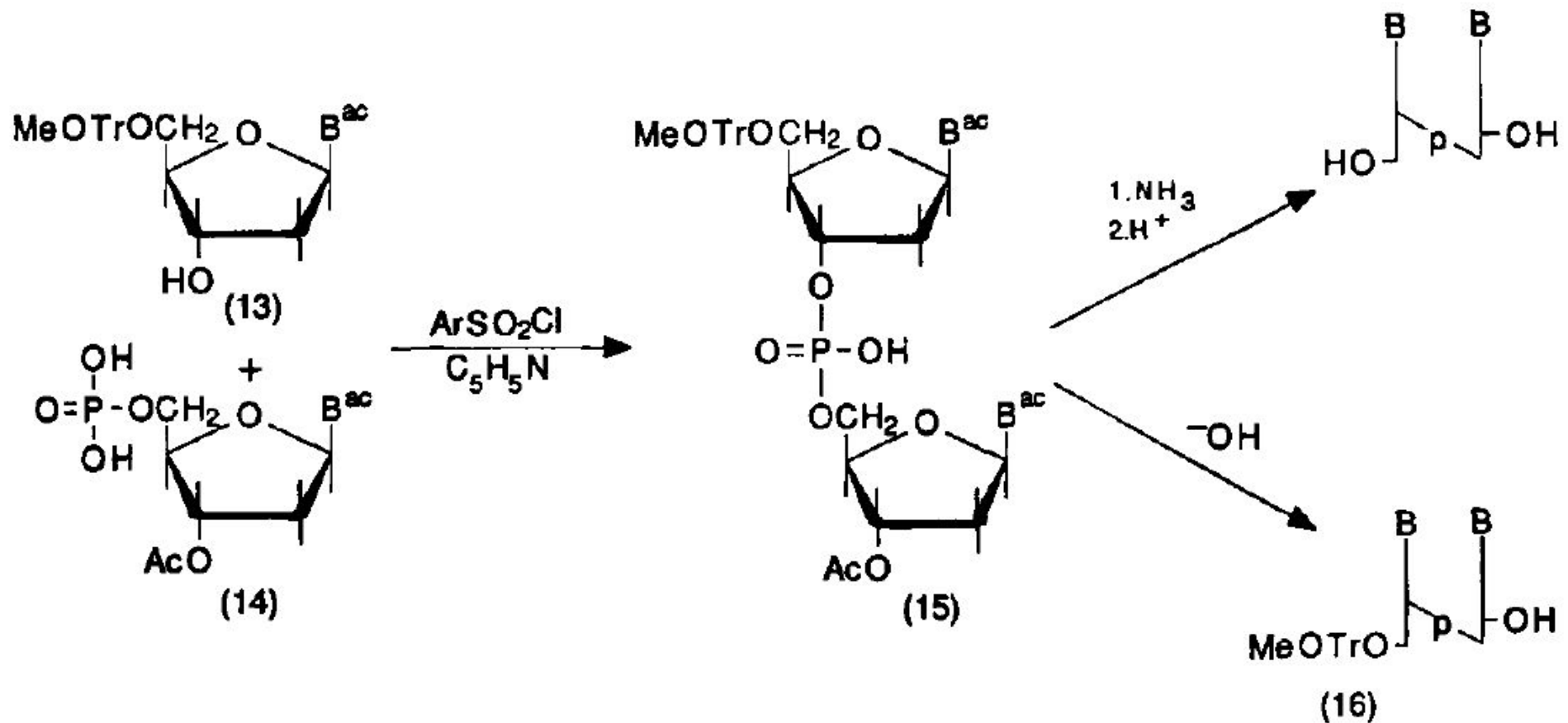
# Фосфиттриэфирный метод

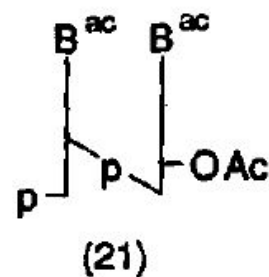
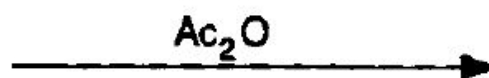
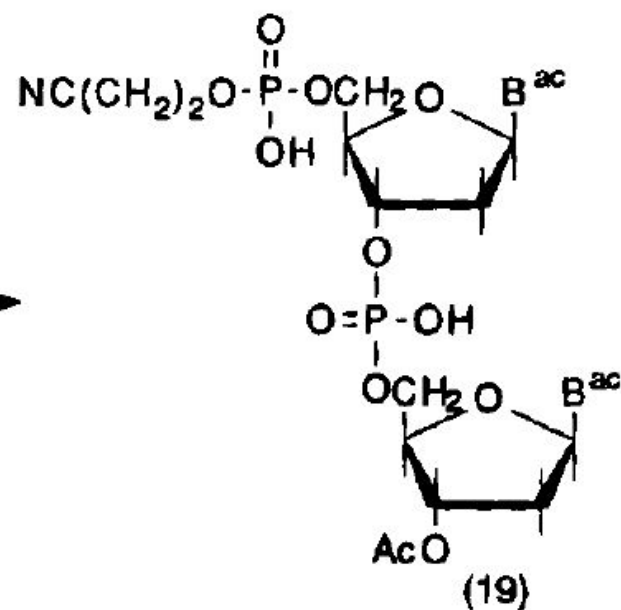
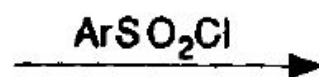
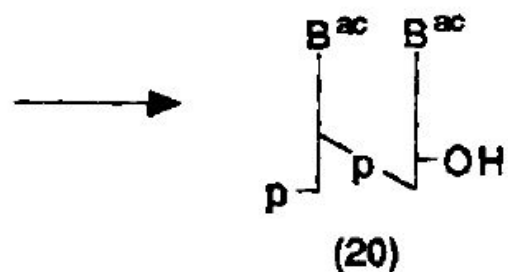
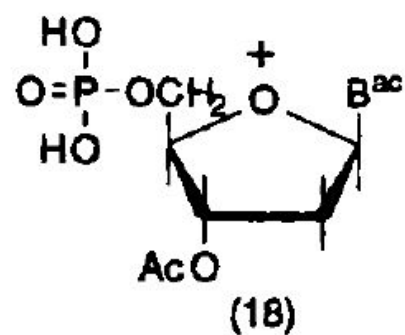
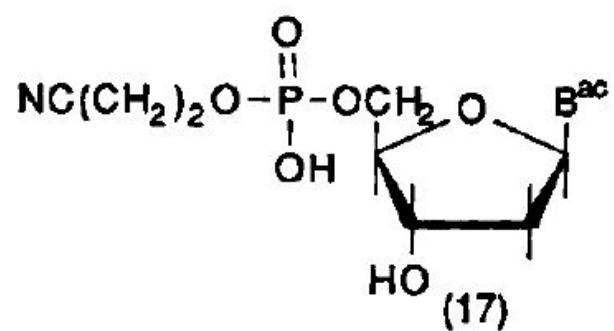




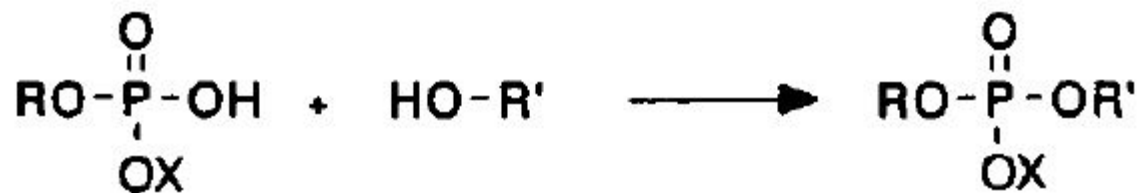
Lev - levulinic acid residue

# Фосфодиэфирный метод

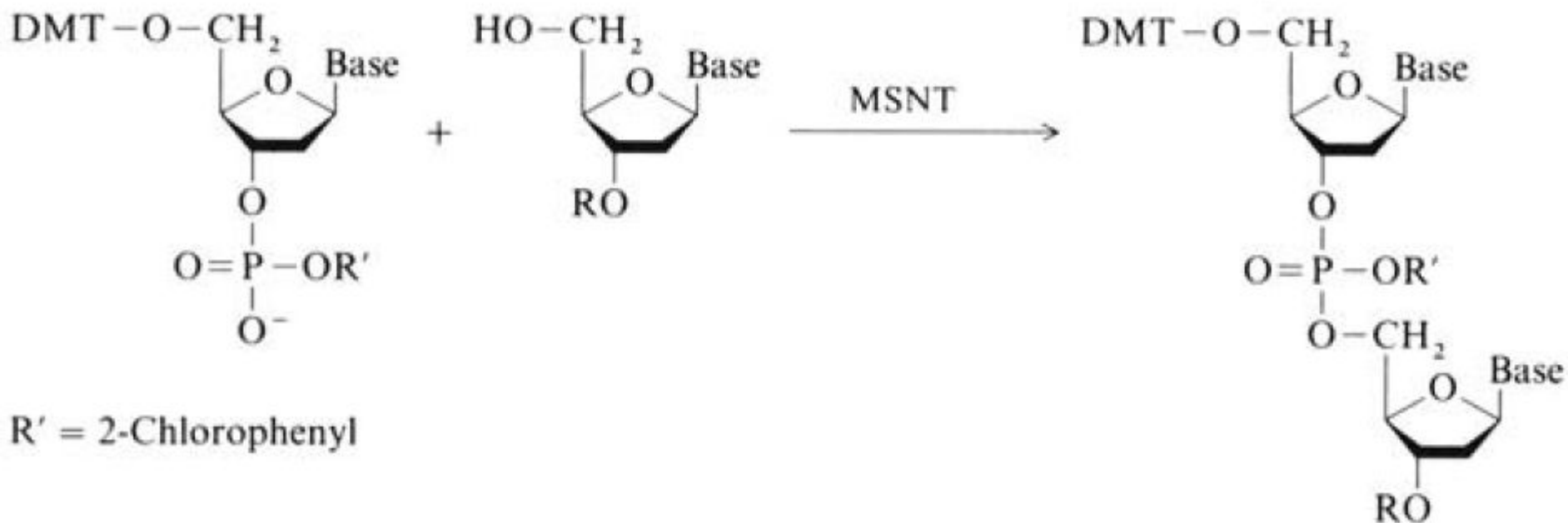


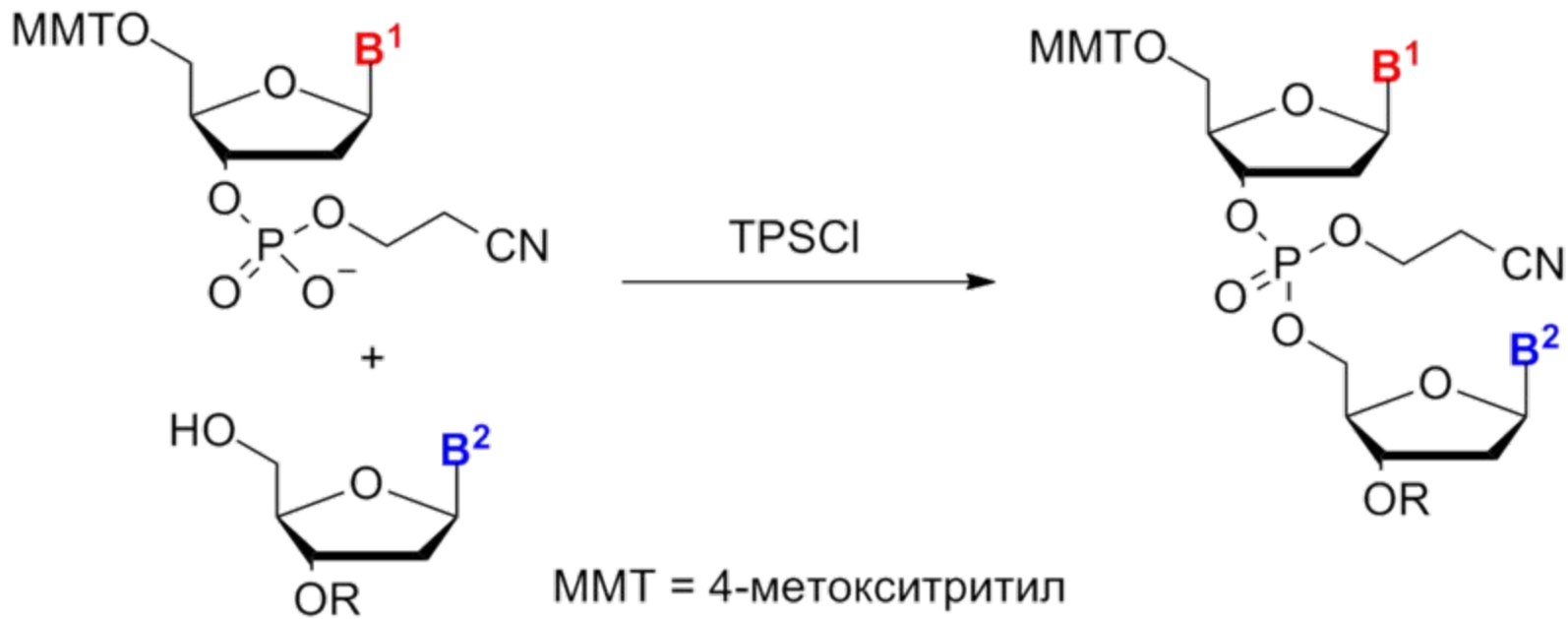


# Фосфотриэфирный метод



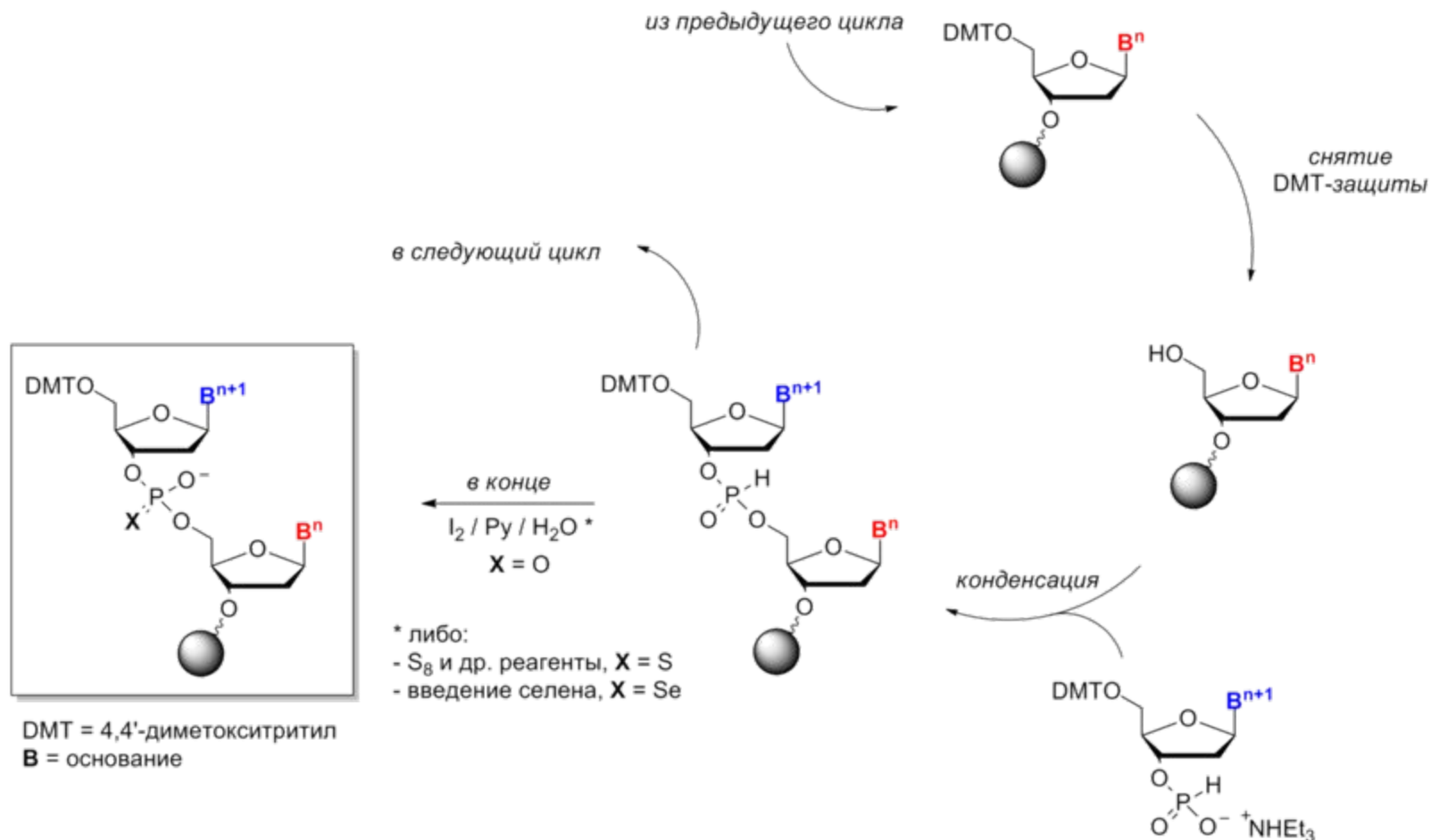
Phosphate triester method



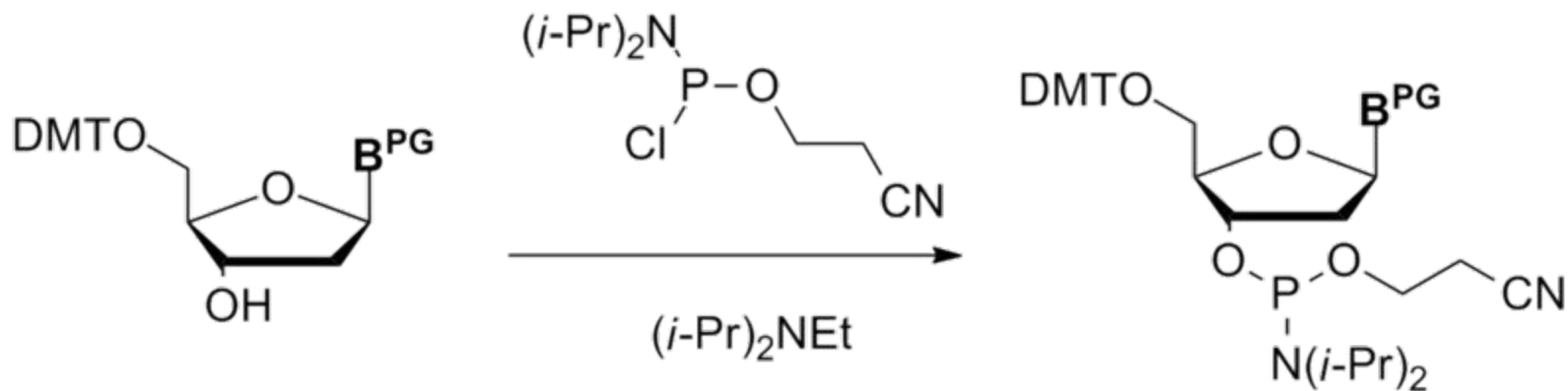
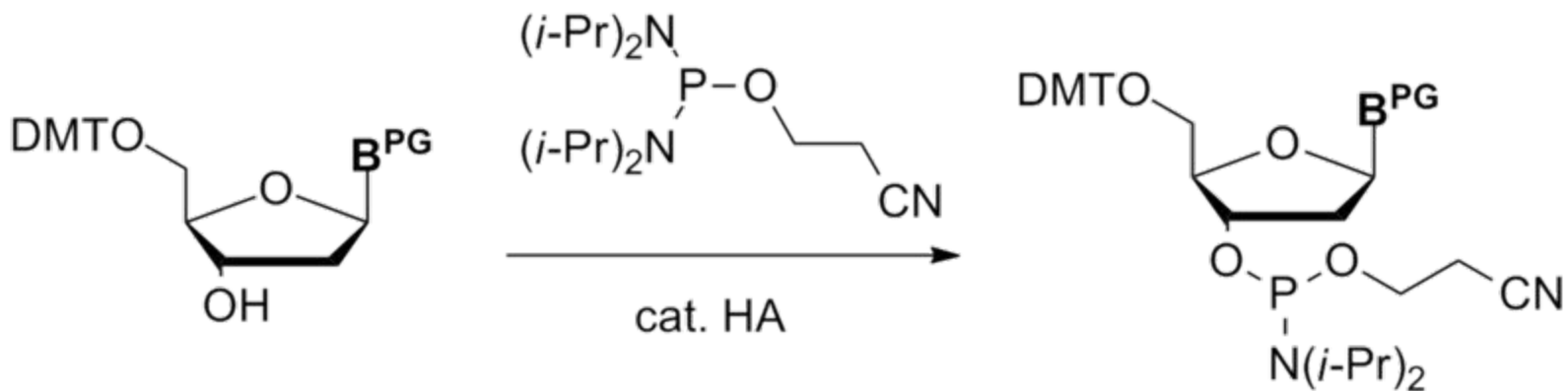




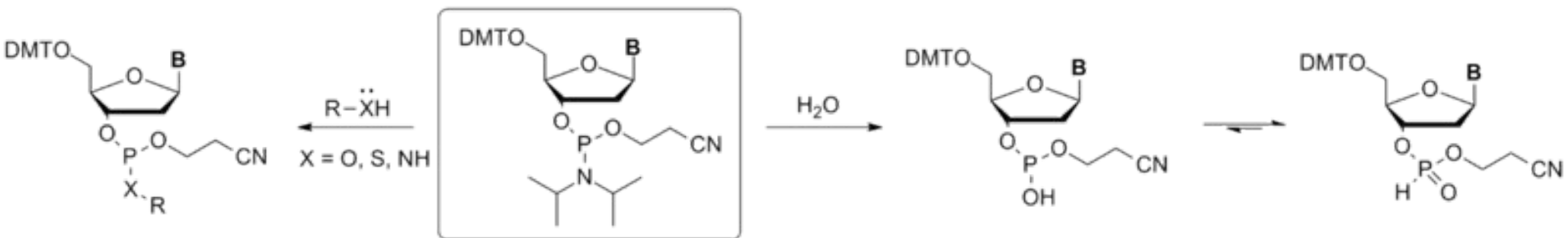
# H-фосфонатный метод на твердом носителе



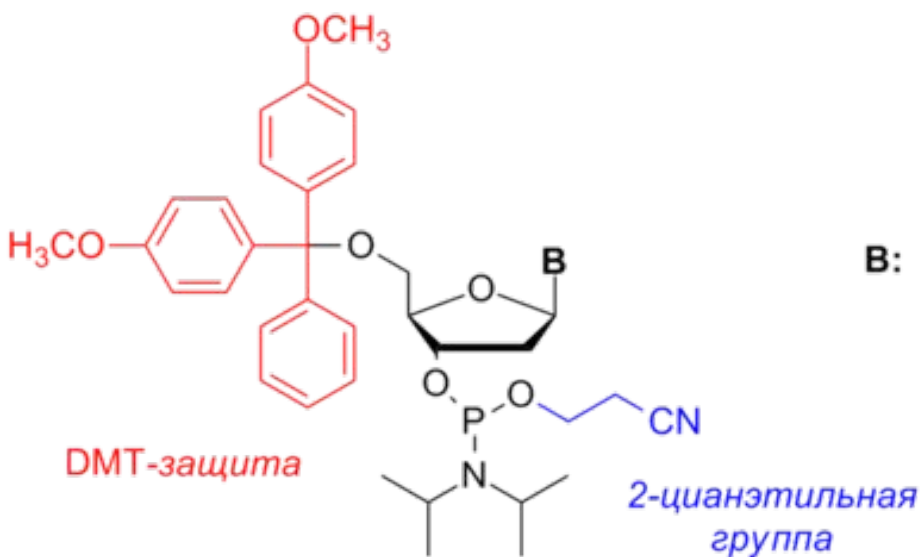
# Амидофосфиты



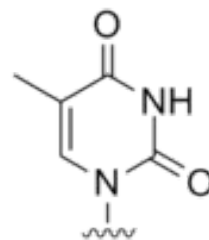
# Реакционная способность амидофосфитов



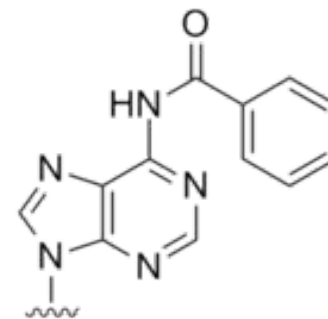
# Защитные группы амидофосфитного метода



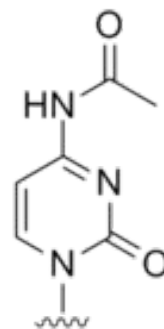
B:



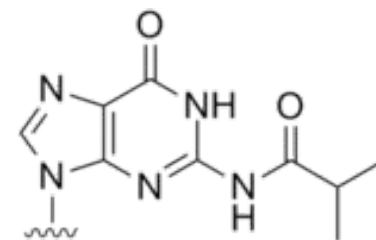
T



dA<sup>Bz</sup>

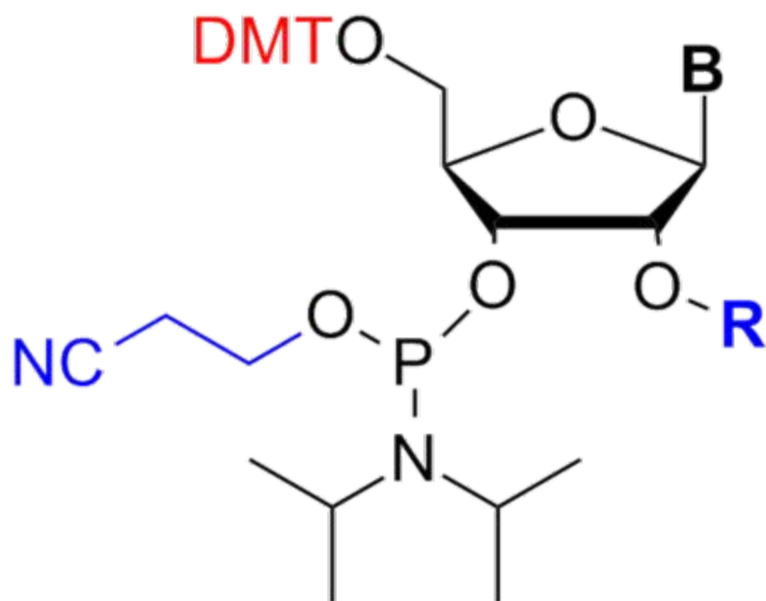


dC<sup>Ac</sup>

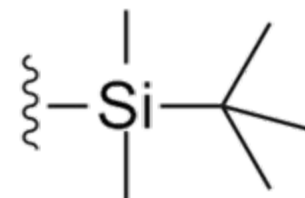


dG<sup>ib</sup>

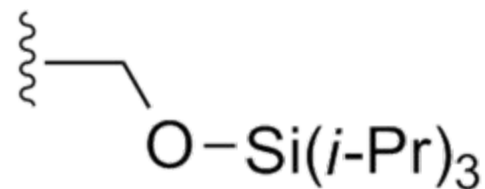
# Защитные группы амидофосфитного метода



**R:**

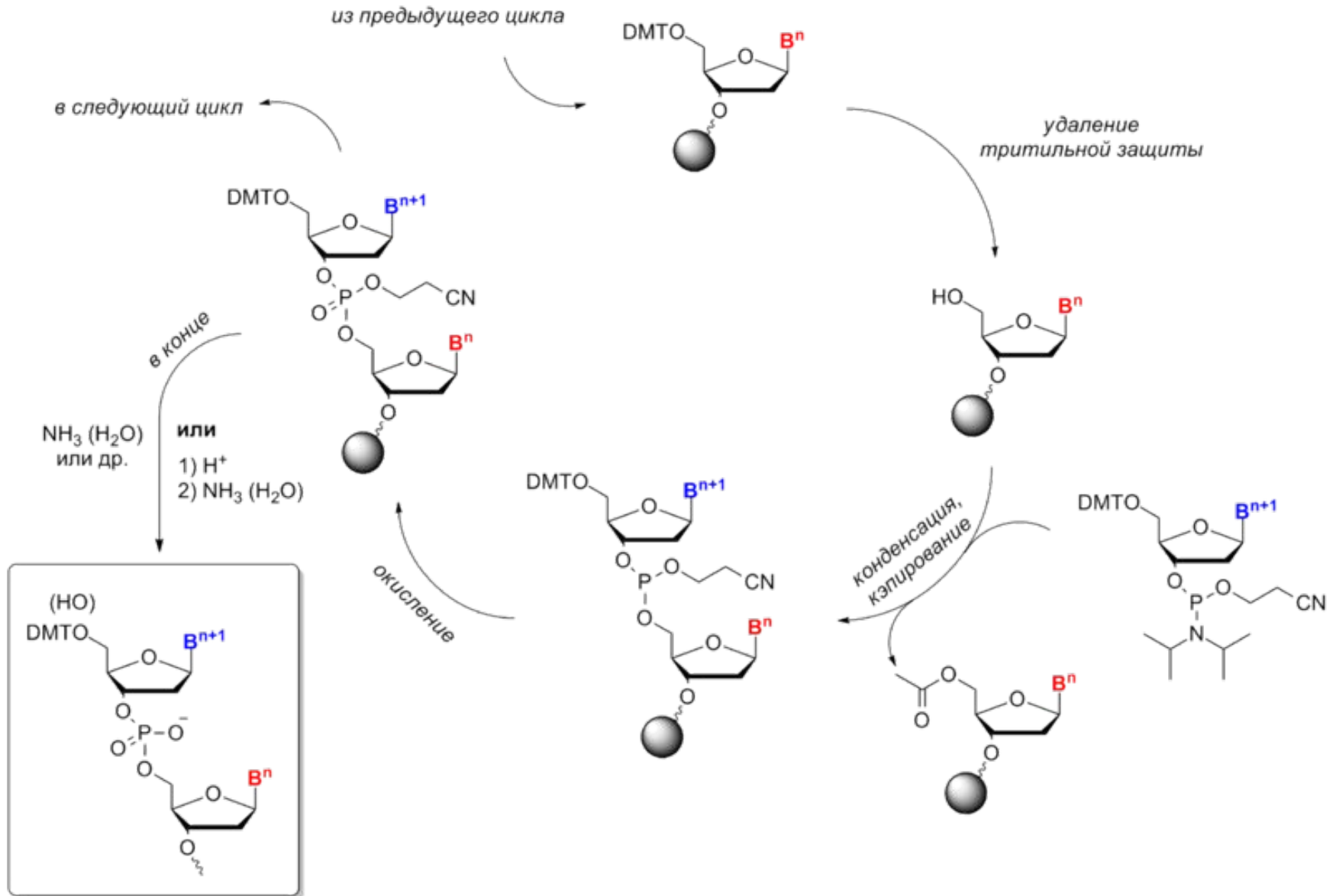


**TBDMS**

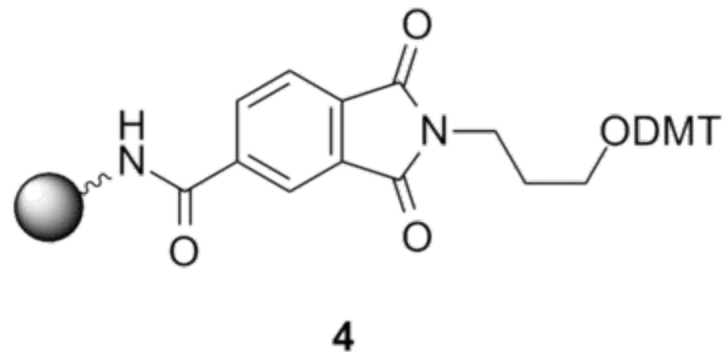
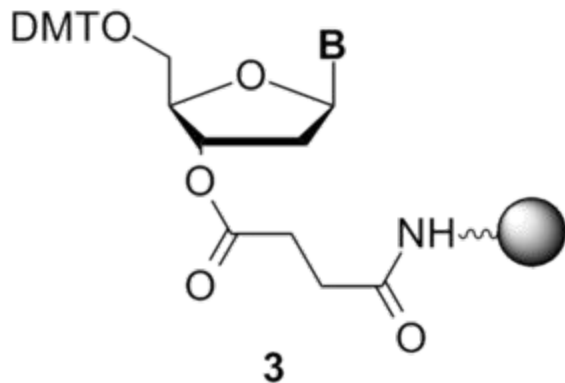
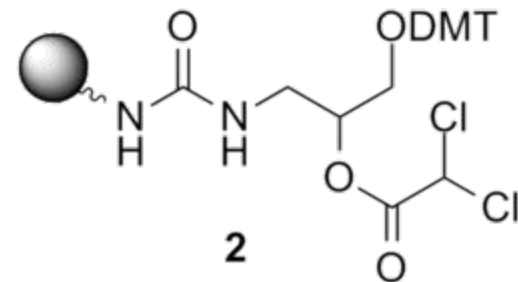
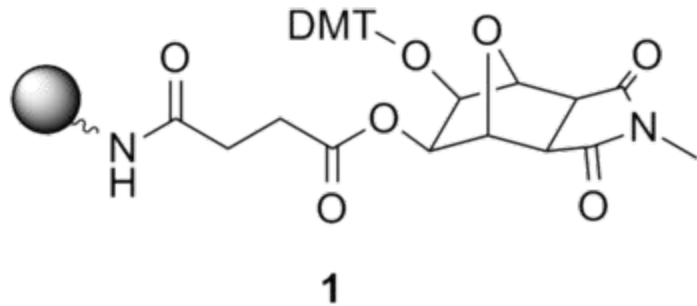


**TOM**

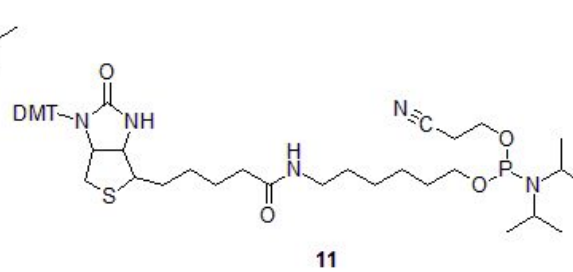
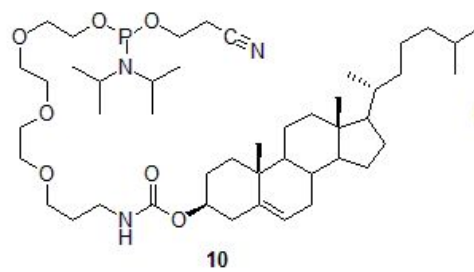
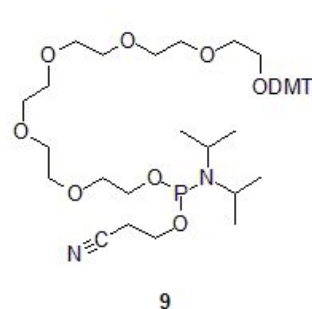
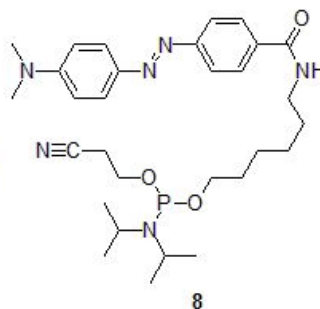
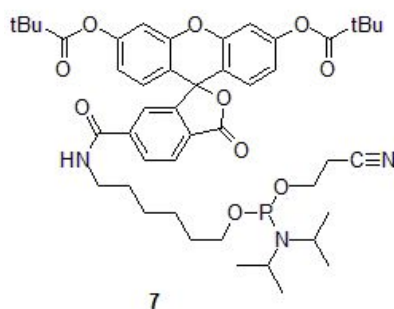
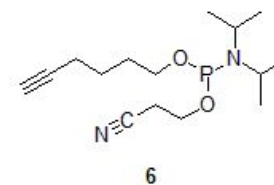
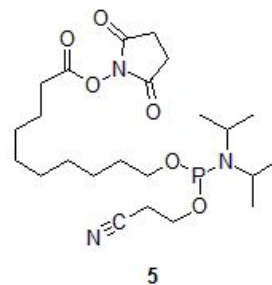
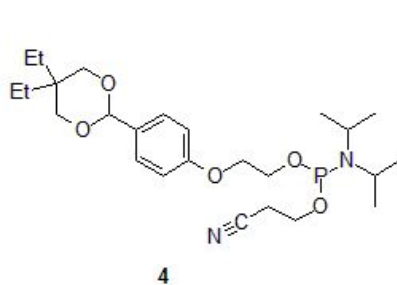
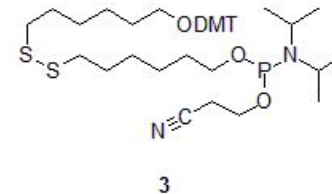
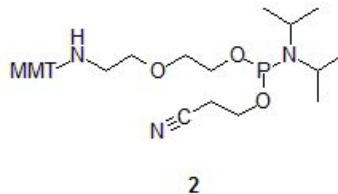
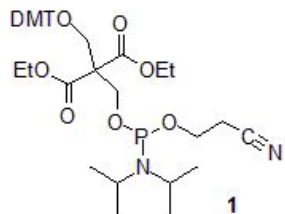
# Синтез амидофосфитным методом



# Сшивающие агенты для твердофазного синтеза

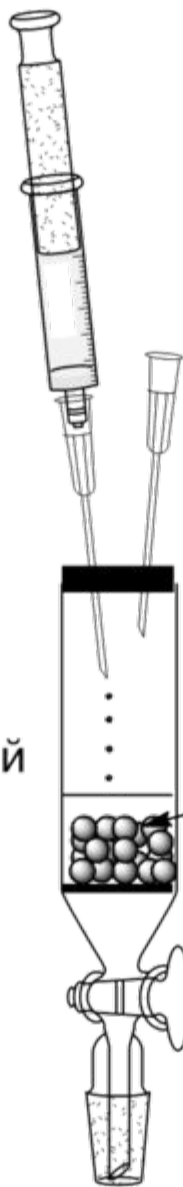


# Структуры некоторых ненуклеозидных амидофосфитов





шприц  
1–2 мл



игла  
для сброса  
давления

стеклянный  
фильтр  
5 мл

носитель

кран





# Пример масс-спектра олигонуклеотида

