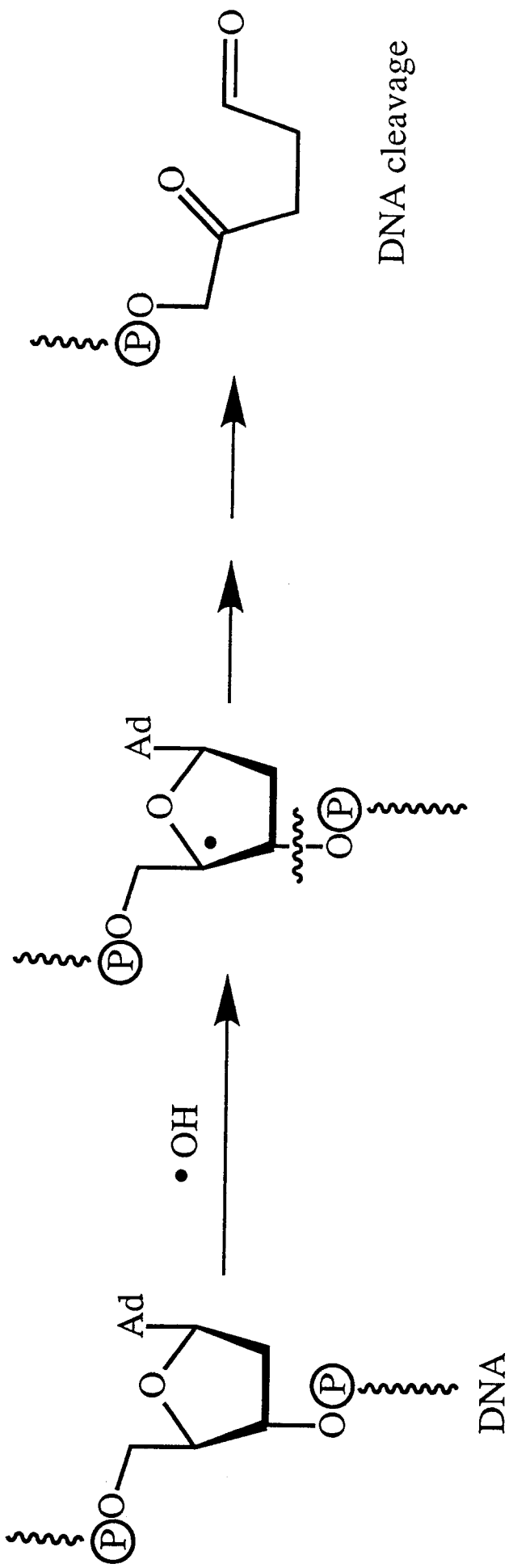


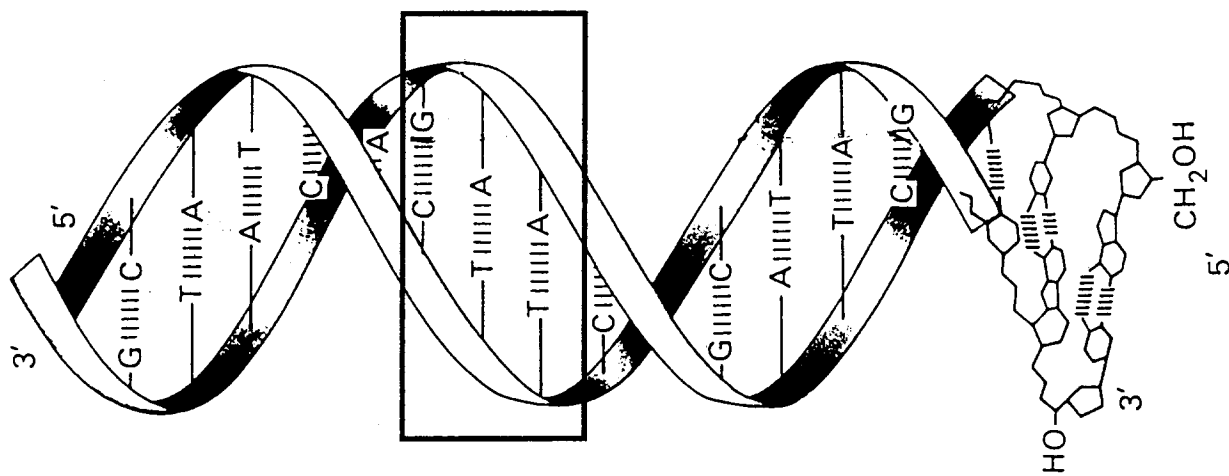
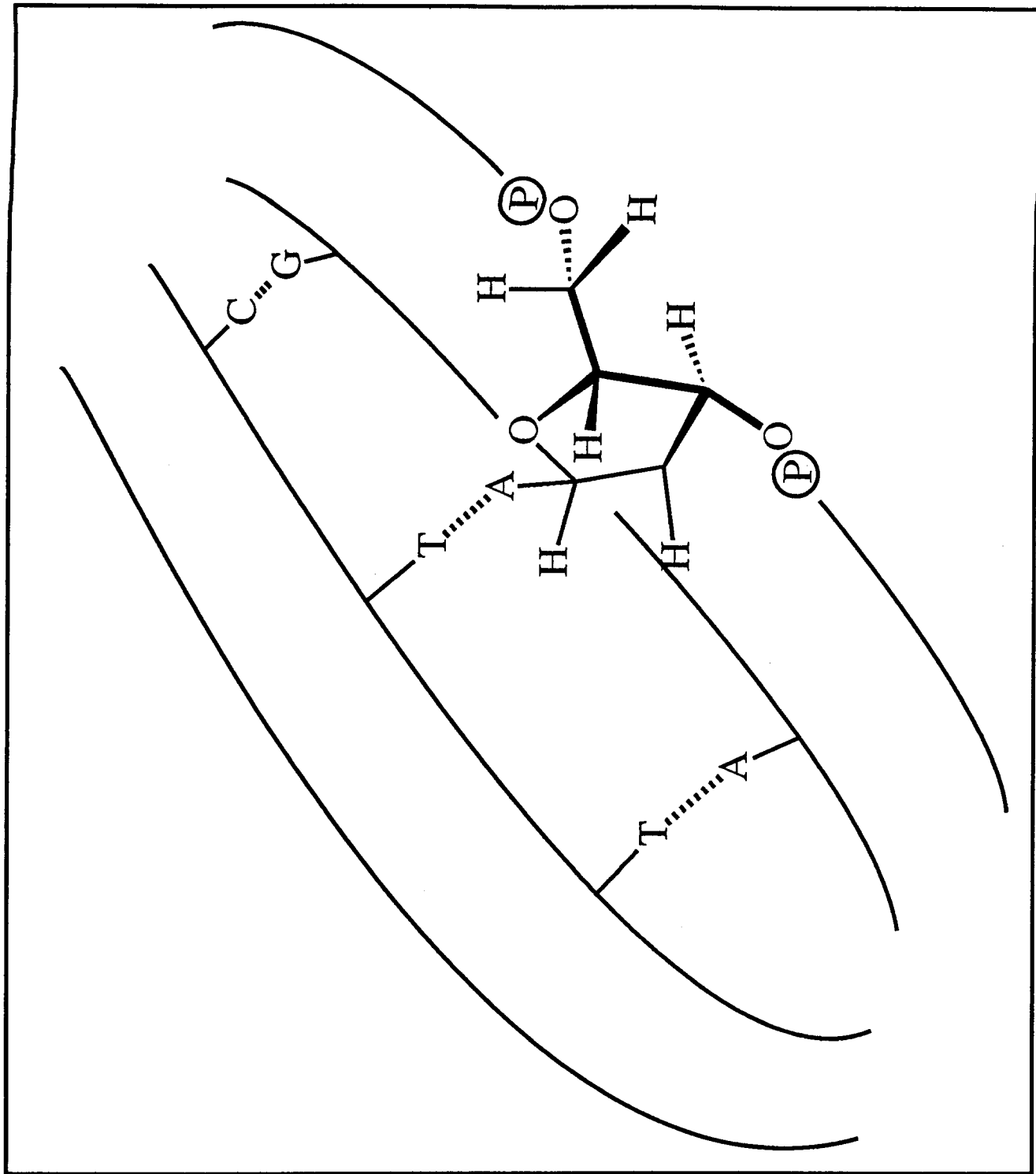
Deoxyribonucleotide

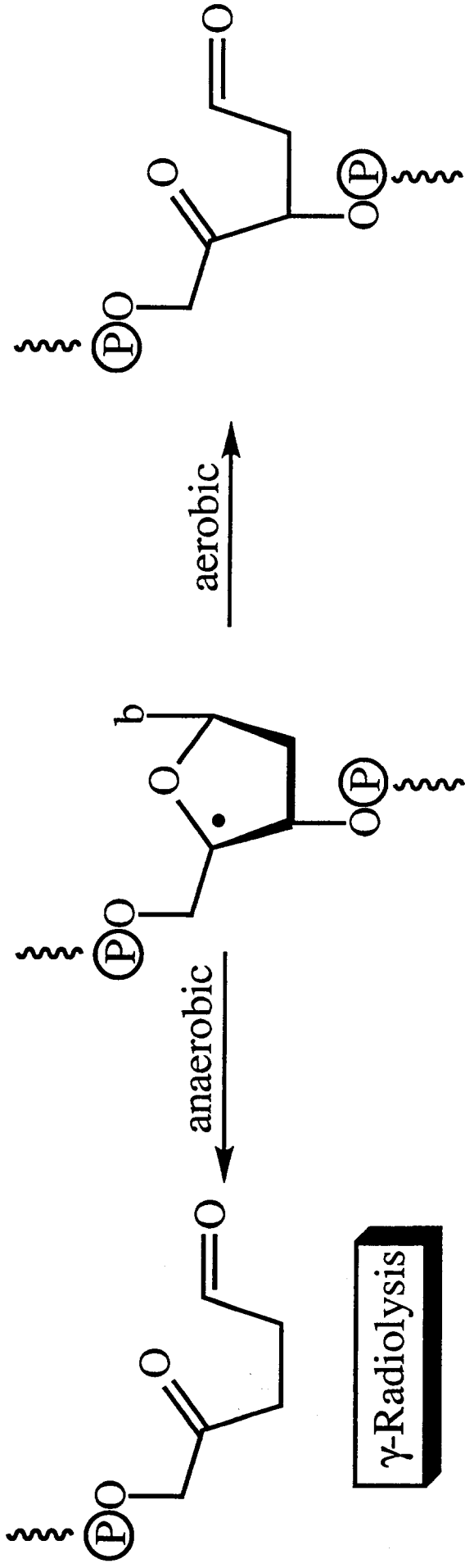
J.A. Stubbe



DNA cleavage

DNA

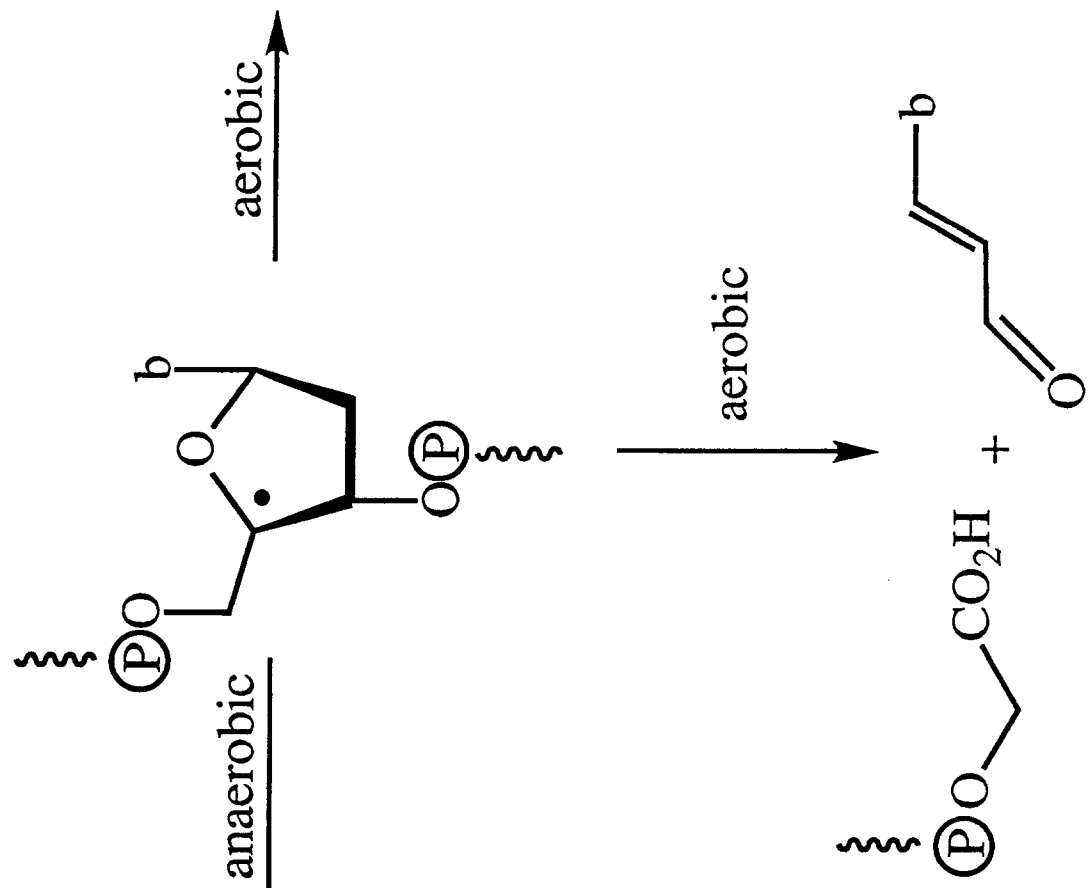




D. Schulte-Frohlinde

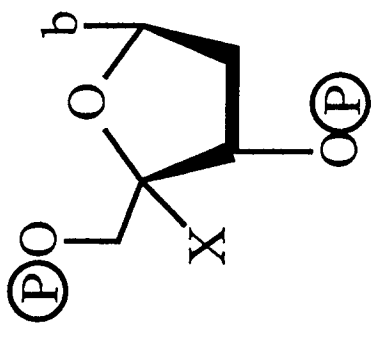
Enediynes

I.H. Goldberg,
J.W. Kozarich,
I. Saito, J.A. Stubbe

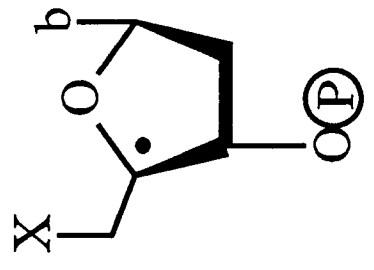


Bleomycin

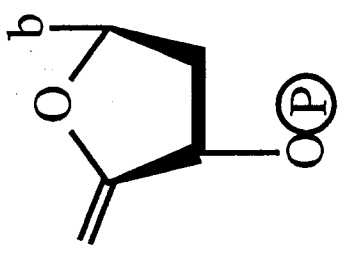
R.M. Burger, J.W. Kozarich
J.A. Stubbe



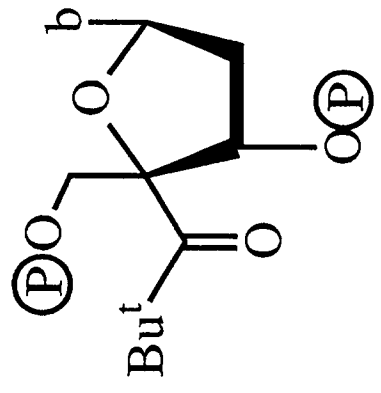
radical
abstraction

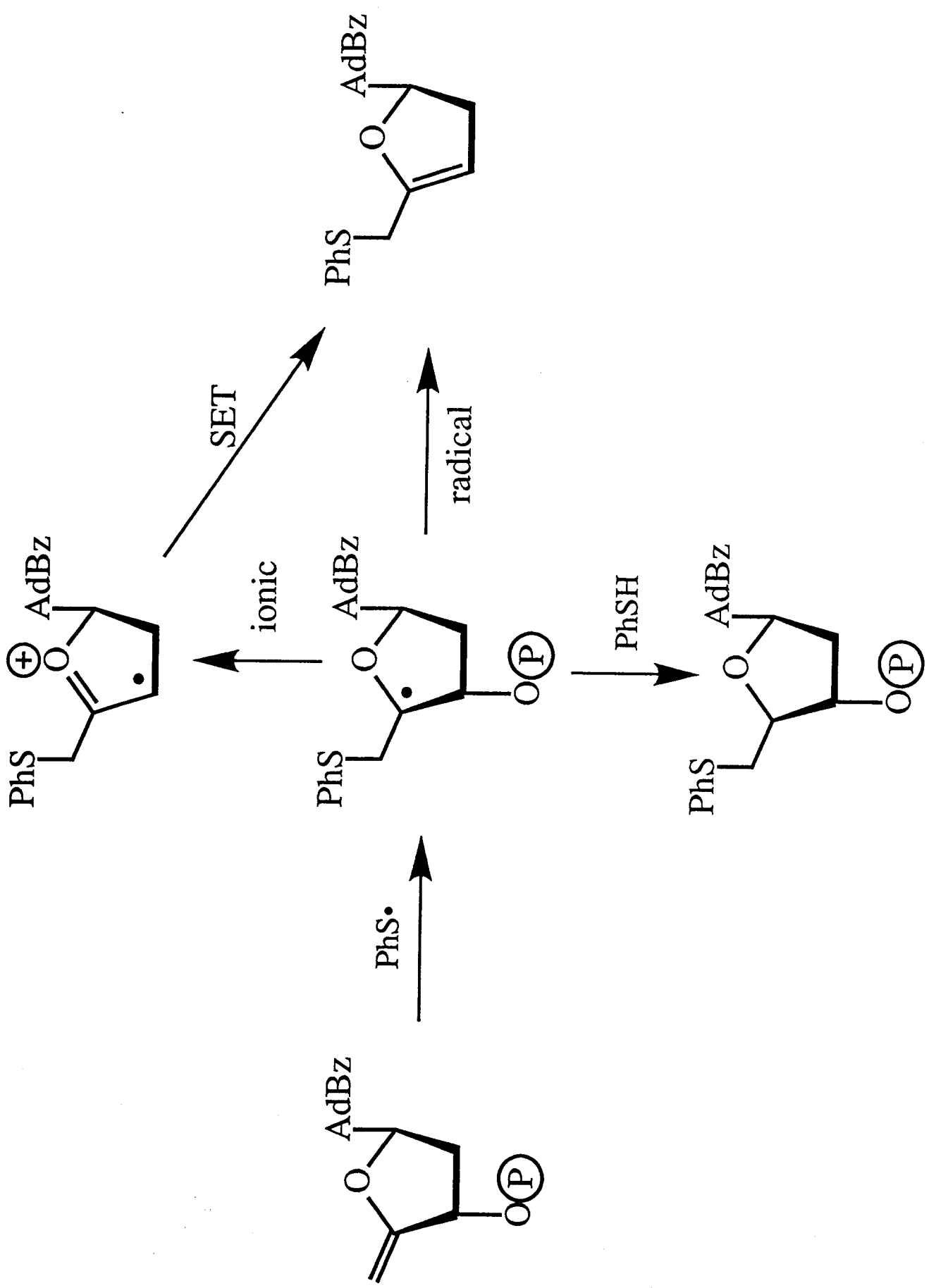


X•
radical
addition

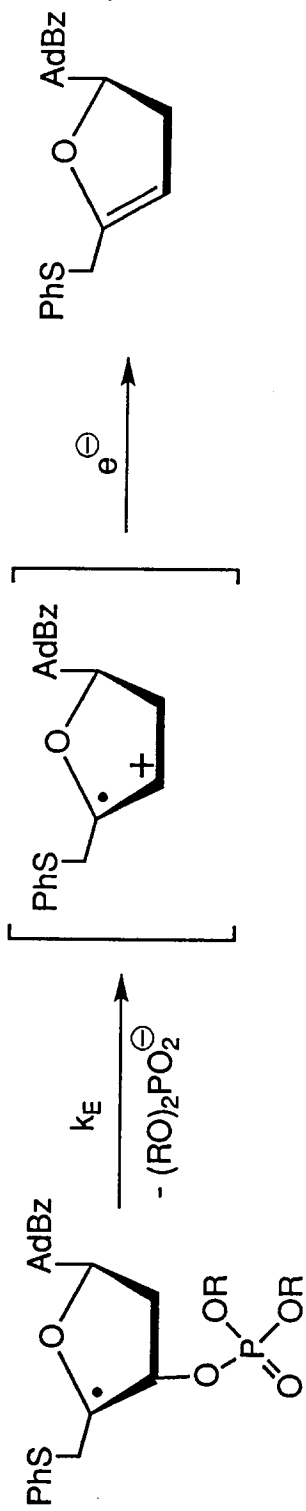


photolysis





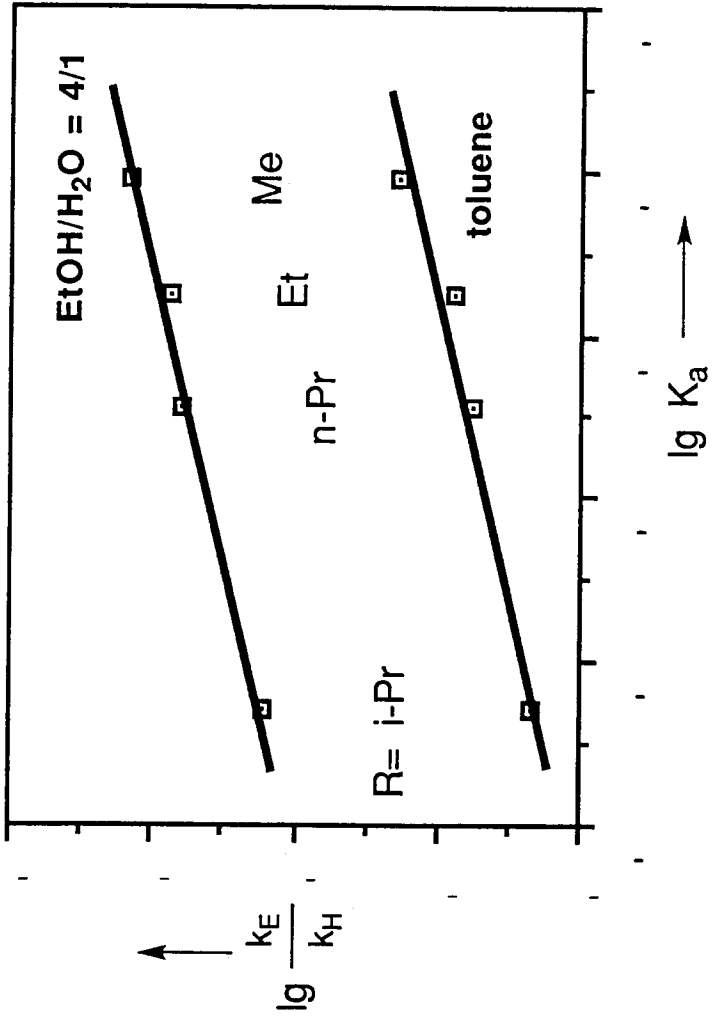
Brønsted plot

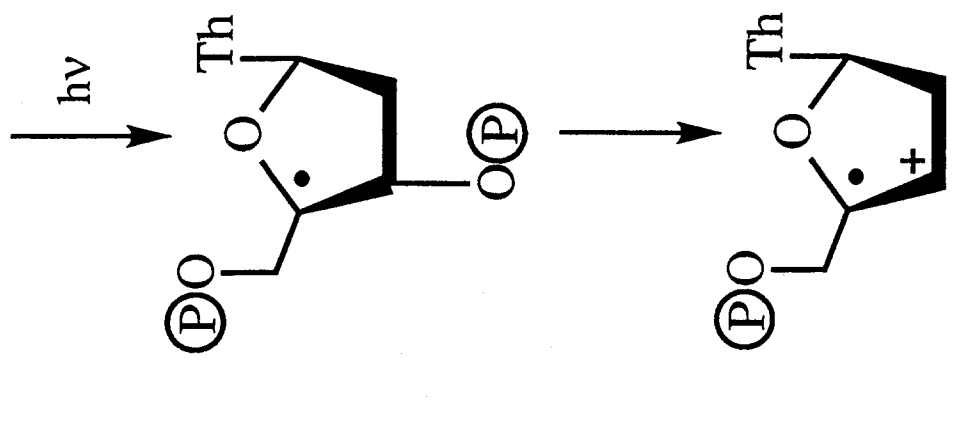
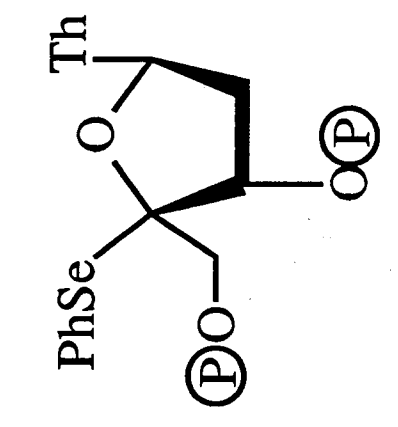
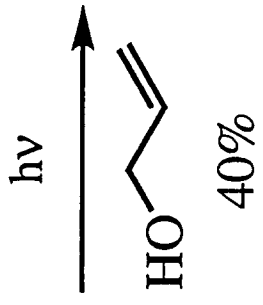
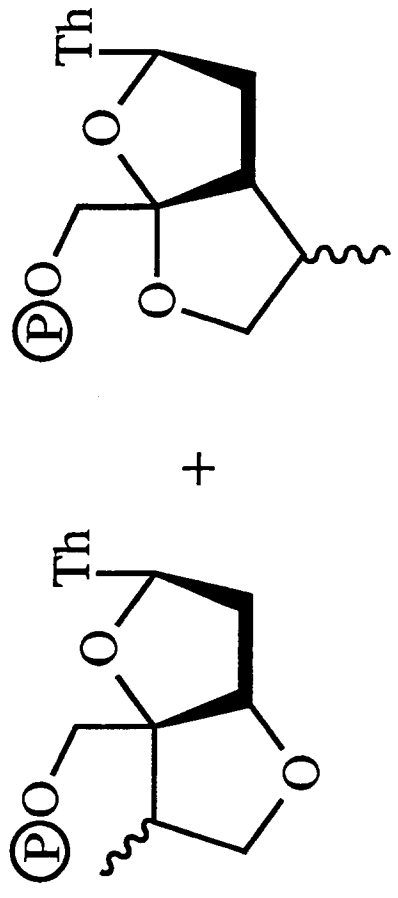


$$\beta \approx 1.3$$

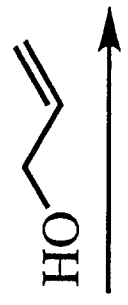
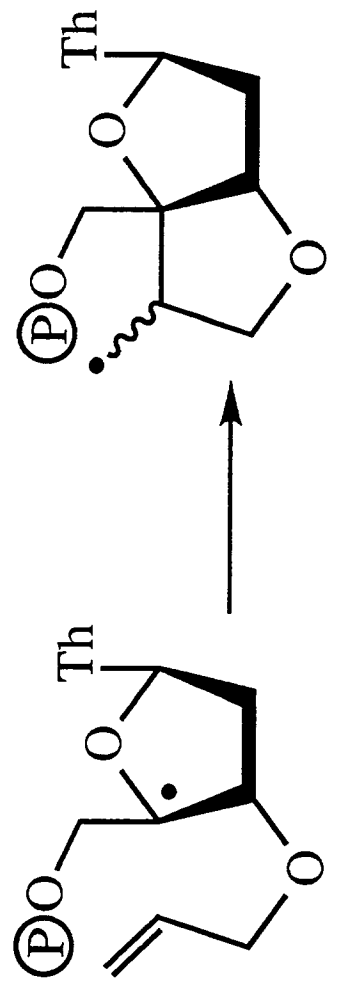
$$\lg k_E = \beta \lg K_a + c$$

$$\frac{k_{\text{EtOH}/\text{H}_2\text{O}}}{k_{\text{toluene}}} \approx 10^2$$

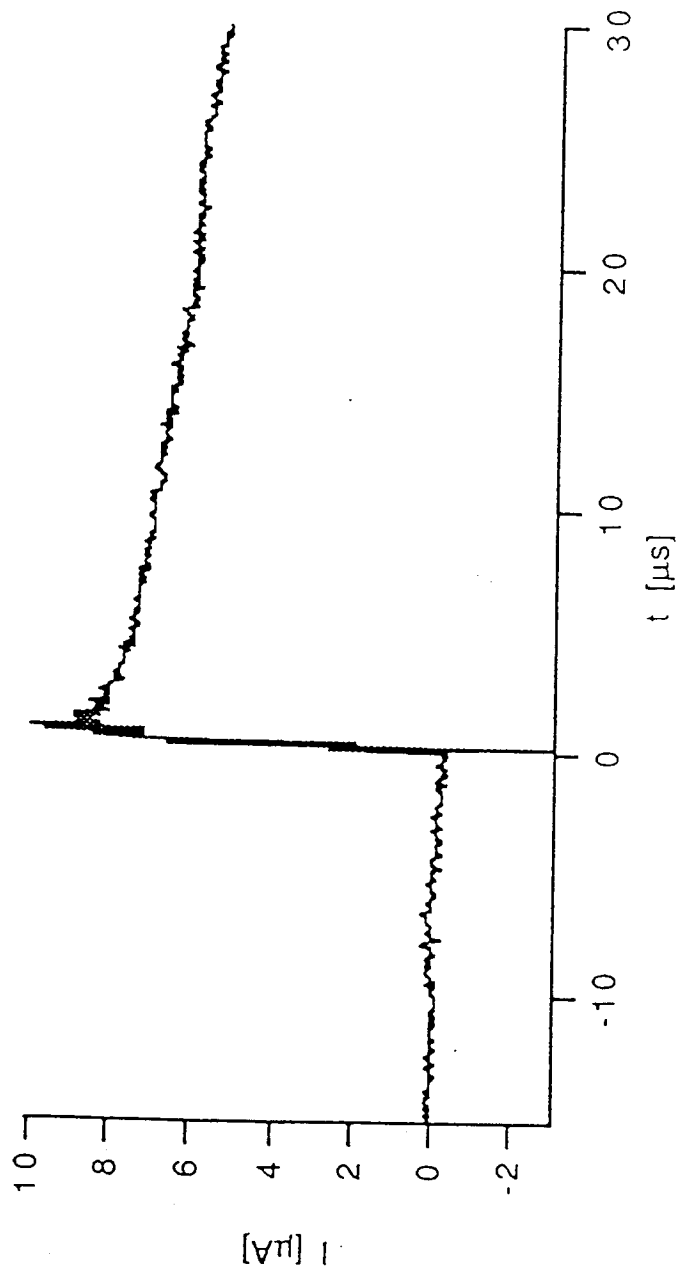
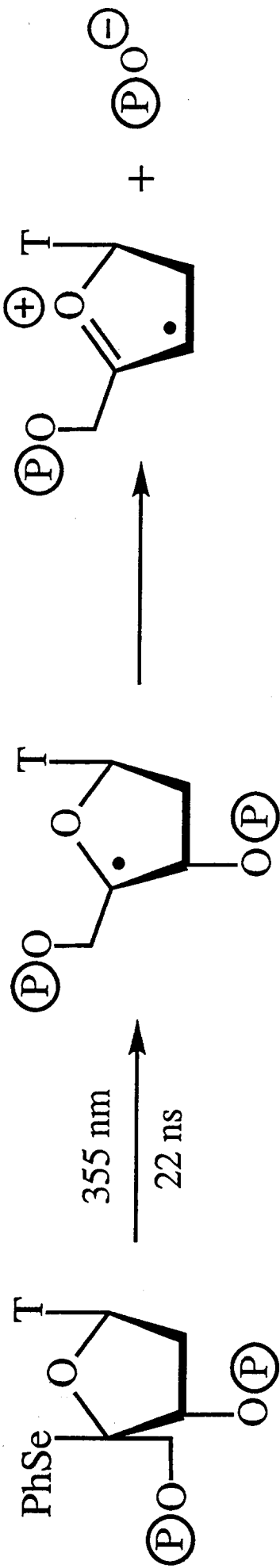




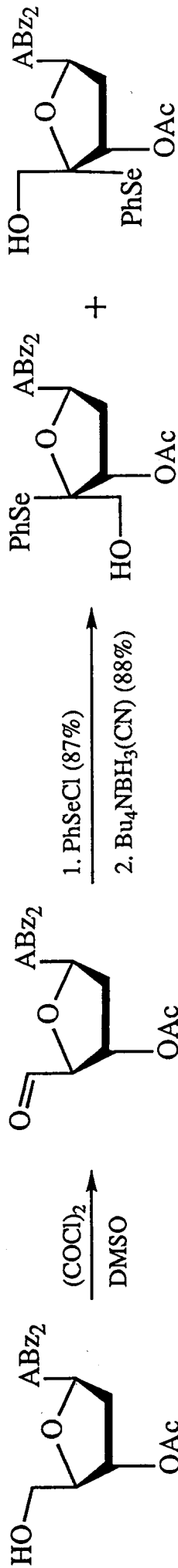
3 : 1



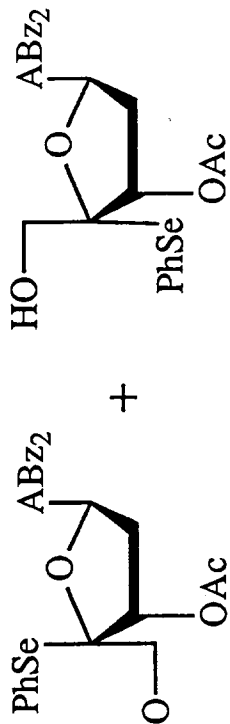
Photocurrent Measurements



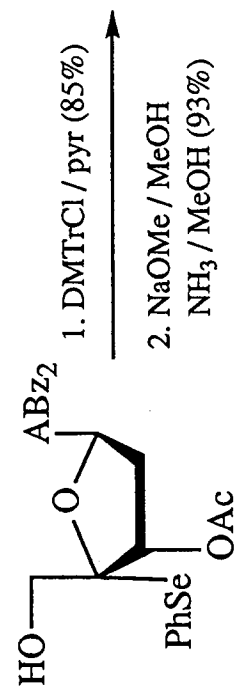
P. Erdmann, E. Haselbach



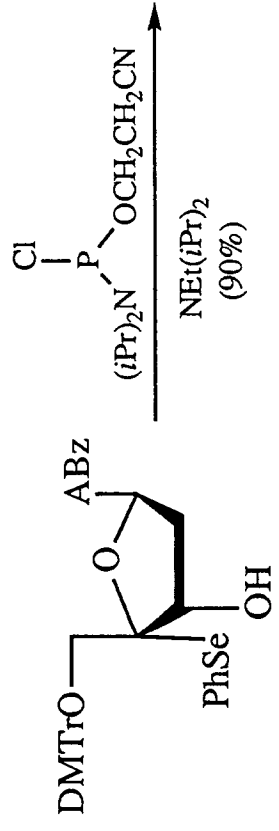
1. PhSeCl (87%)
2. Bu₄NBH₃(CN) (88%)



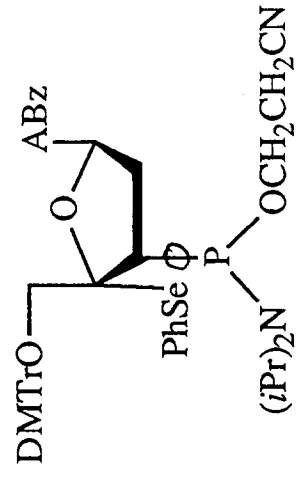
3 : 1



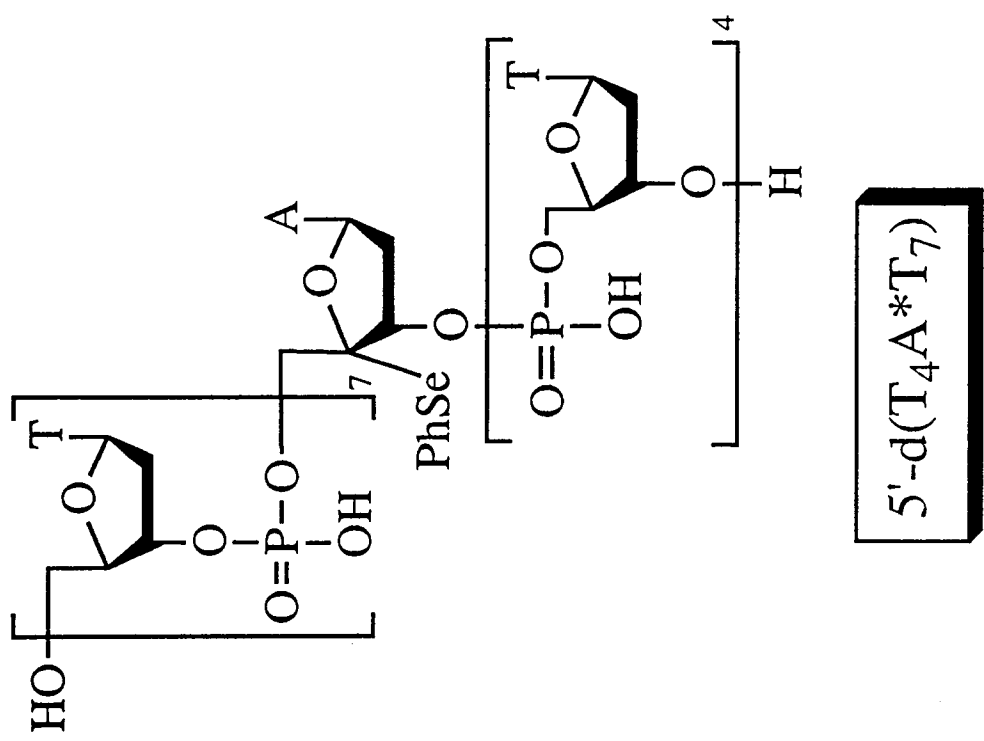
1. DMTrCl / pyr (85%)
2. NaOMe / MeOH
NH₃ / MeOH (93%)



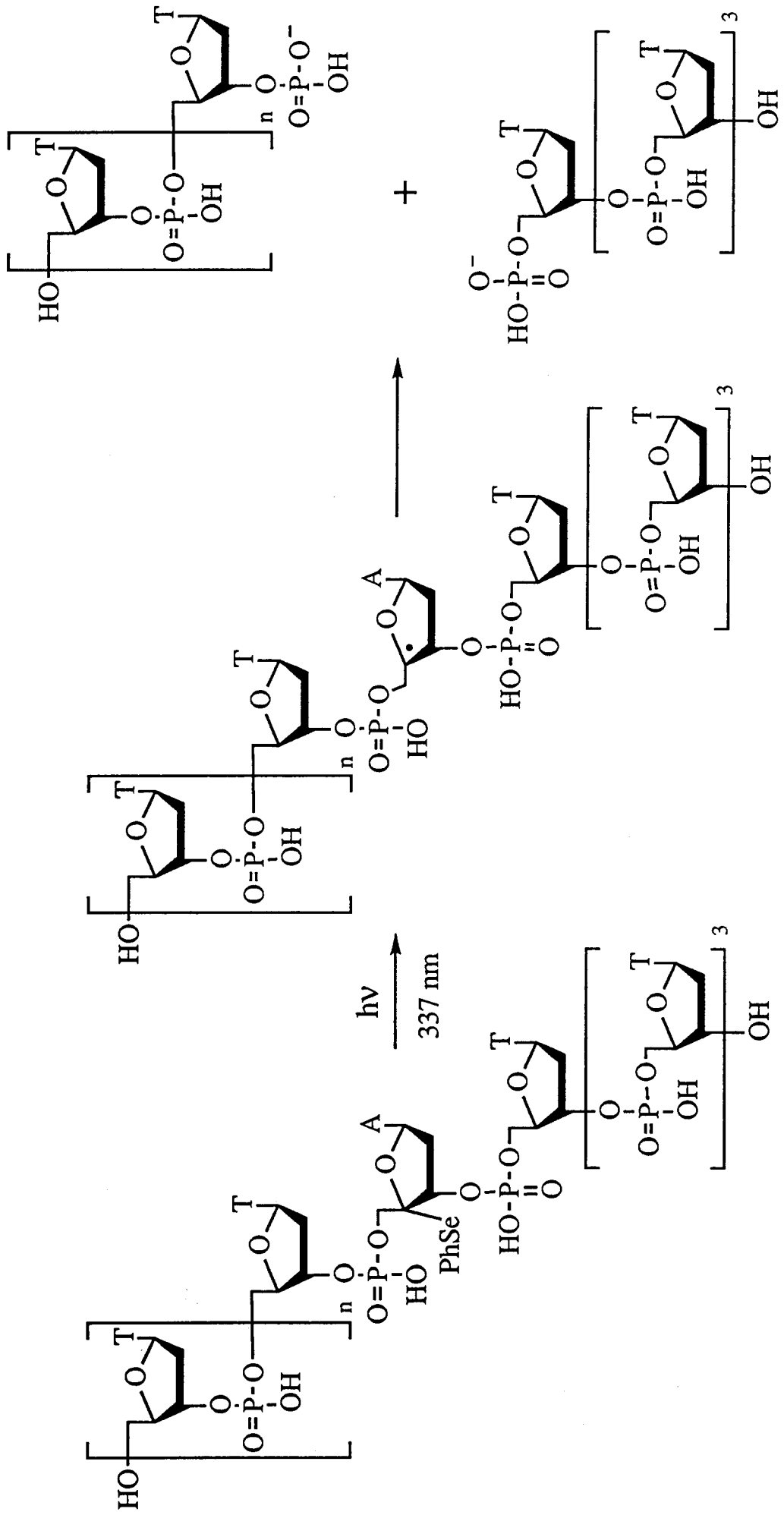
NEt(iPr)₂
(90%)



(iPr)₂N
OCH₂CH₂CN



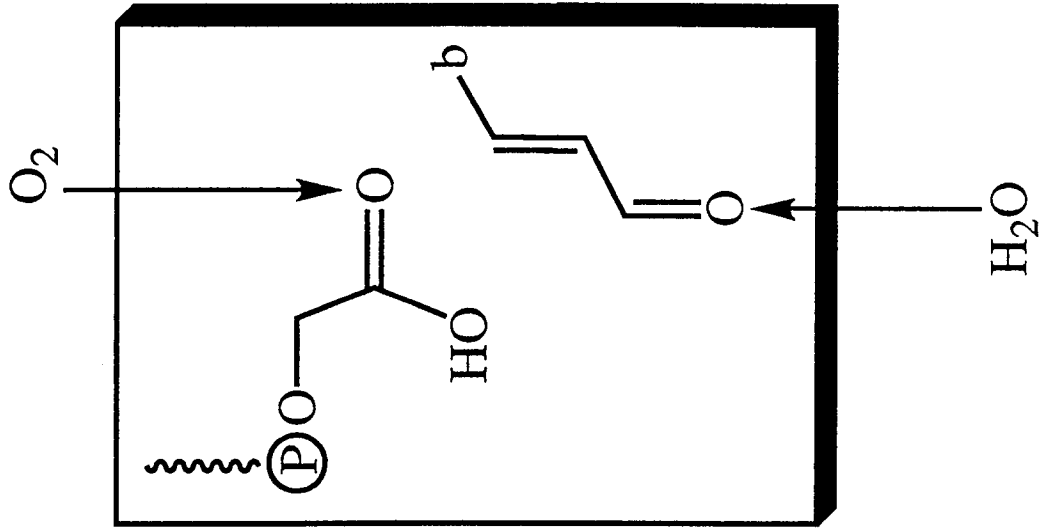
B. Giese, A. Dussy, C. Elie, P. Erdmann, U. Schwitter, *Angew.Chem.* 1994



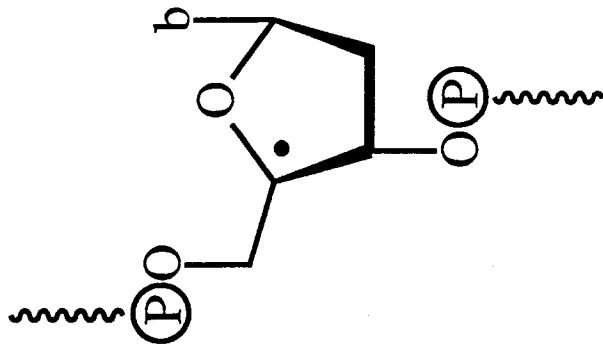
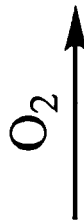
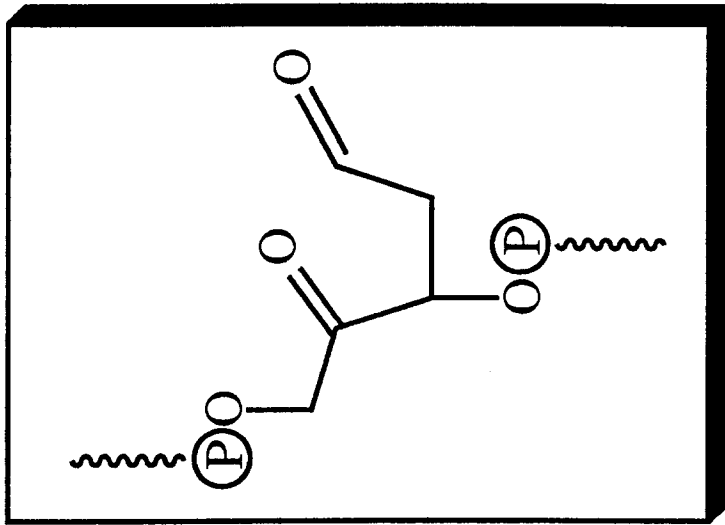
5'-d(T_nA*T₄)

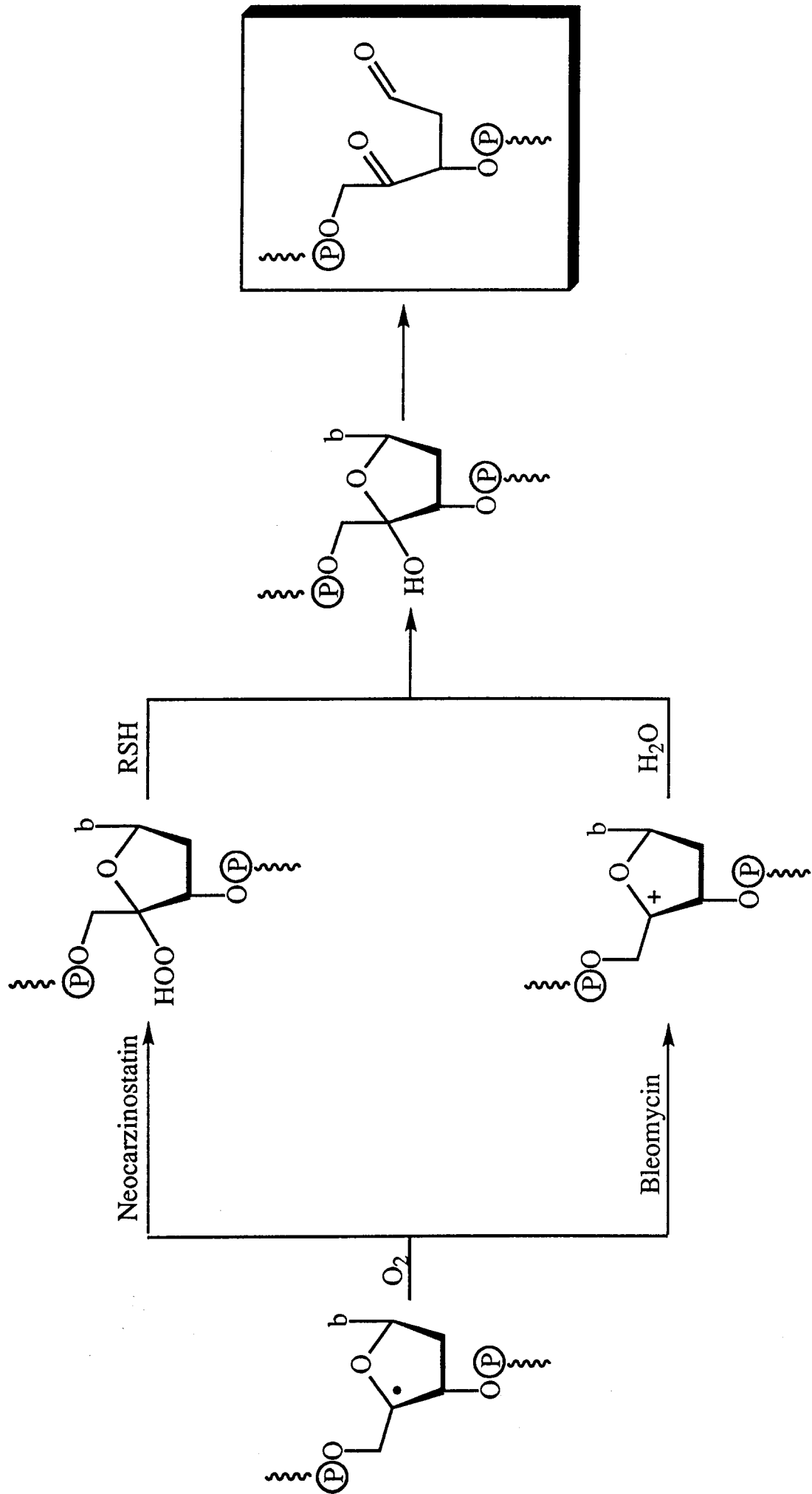
n = 3, 7, 11

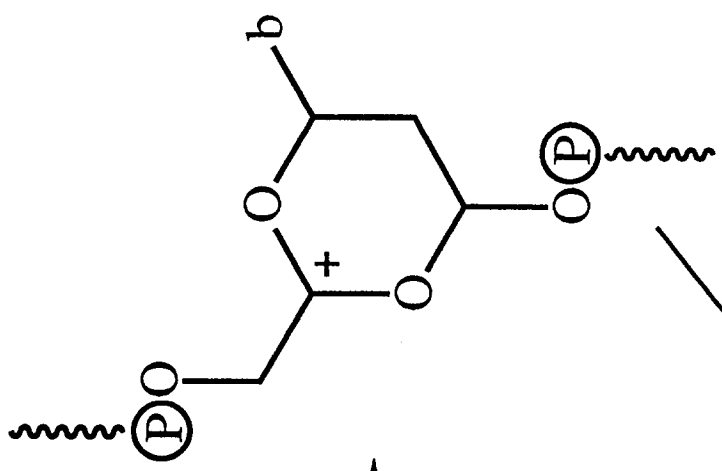
Aerobic Cleavage



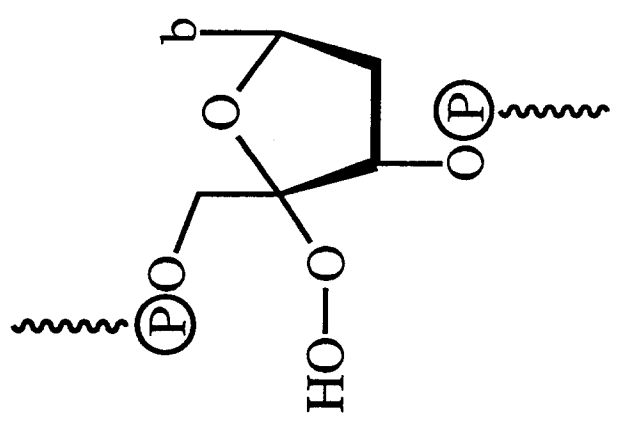
+







$-\text{HO}^-$



$-\text{HO}^\bullet$

