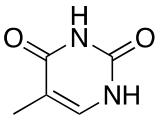
Nucleosides And Nucleotides

from chapter(s) _____ in the recommended text

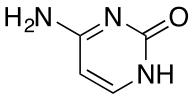
A. Introduction

B. Nucleosides

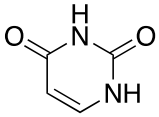
pyrimidine



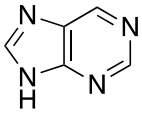
thymine
DNA



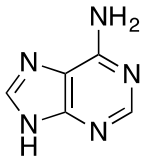
cytosine
both



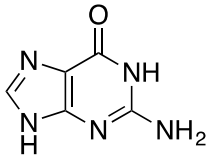
uracil
RAA



purine

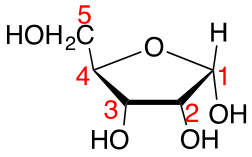


adenine
both

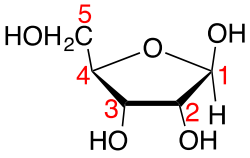


guanine
both

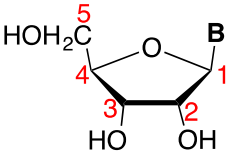
ribose in a *furanose*
β-anomer.
β-anomers.



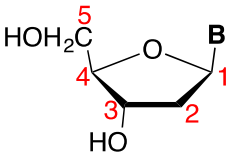
α-D-ribofuranose



β-D-ribofuranose



generic RNA

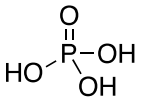


generic DNA

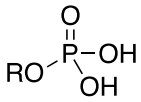
C. Nucleotides

without a phosphate

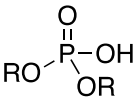
phosphate esters.



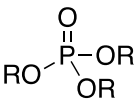
phosphoric acid



phosphomonoester



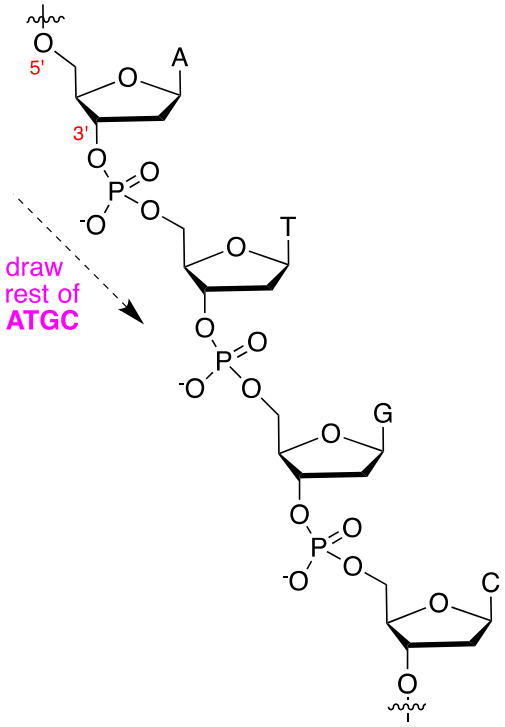
phosphodiester



phosphotriester

di-esters.

di-esters.



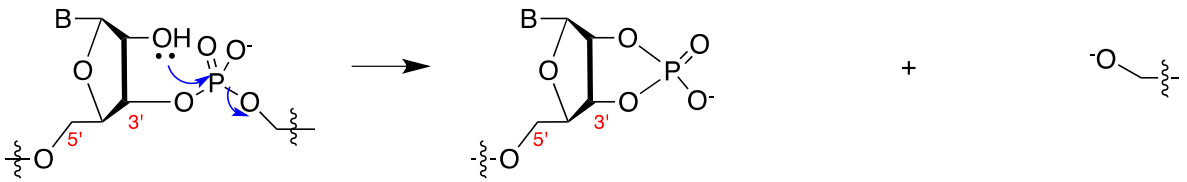
a different

3'- end.

the sugar part.

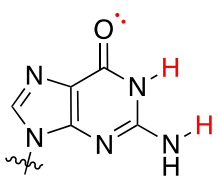
are not

RNA is *less*



2'-OH.

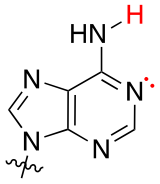
transcribed
translated



G

 # H-bond donors:
2

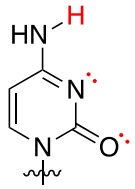
 # H-bond acc's:
1



A

 # H-bond donors:
1

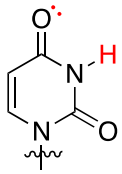
 # H-bond acc's:
1



C

 # H-bond donors:
1

 # H-bond acc's:
2



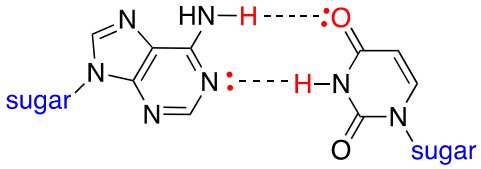
U

 # H-bond donors:
1

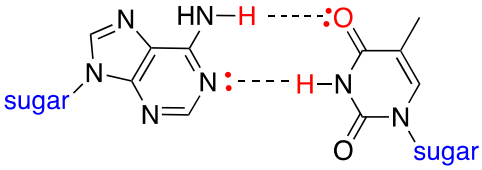
 # H-bond acc's:
1

refers to H-bond acceptors and donors, as indicated in structure

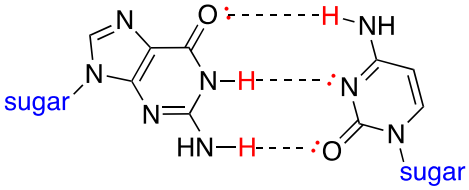
C in DNA
C in RNA
T in DNA
U in RNA
G in DNA
G in RNA
A in DNA



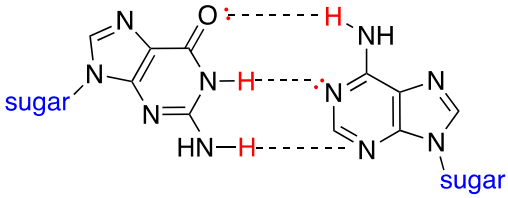
A *H-bonded to* ***U***



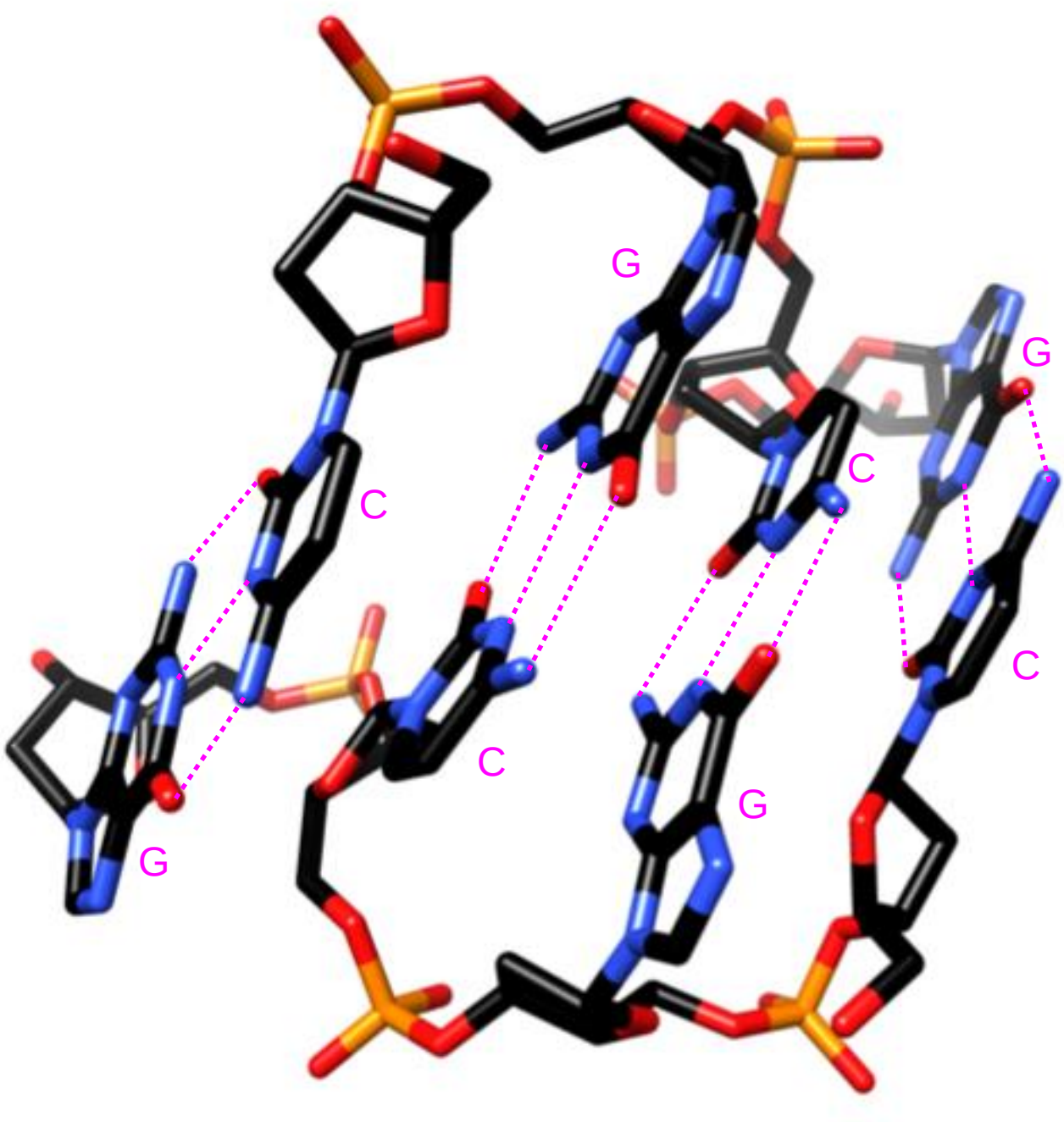
A *H-bonded to* ***T***



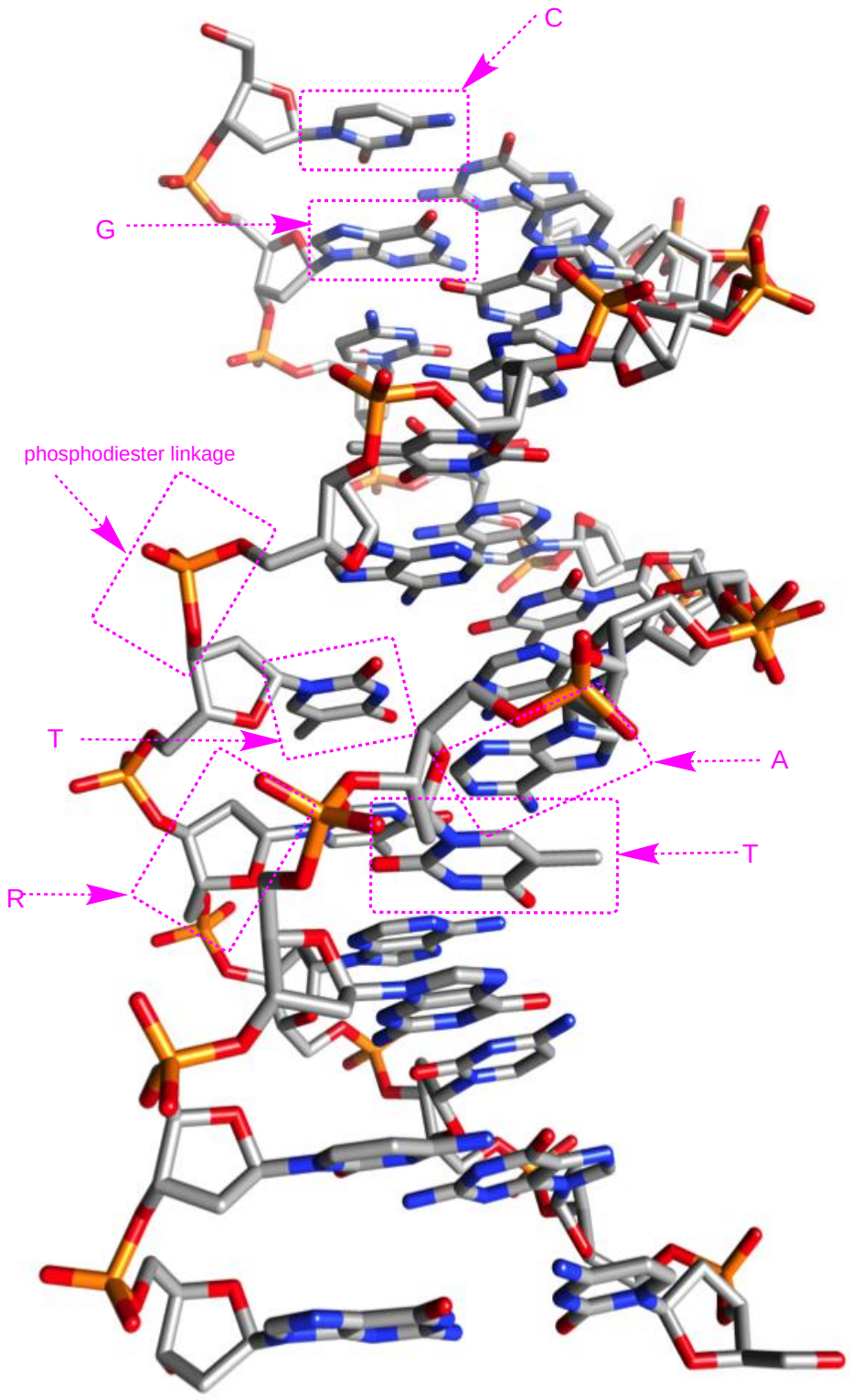
G *H-bonded to* ***C***



G *H-bonded to* ***A***
does not match well



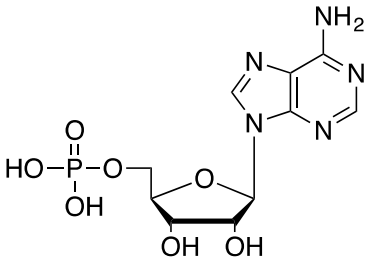
weaker
less



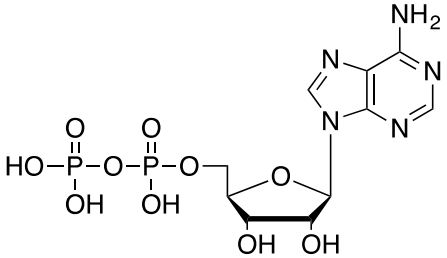
phosphodiesters
nucleobases

C into ***U***
right
the same as
less

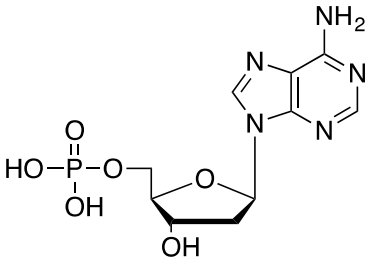
DNA
RNA.



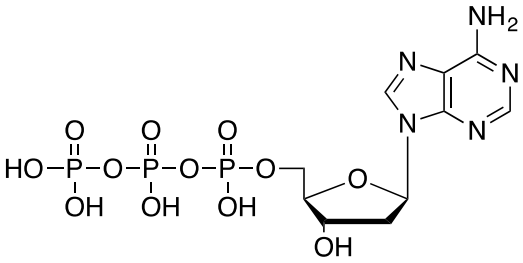
AMP



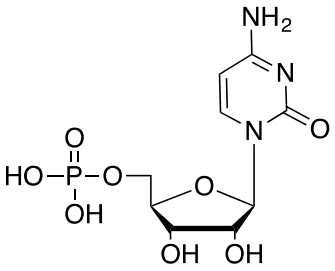
ADP



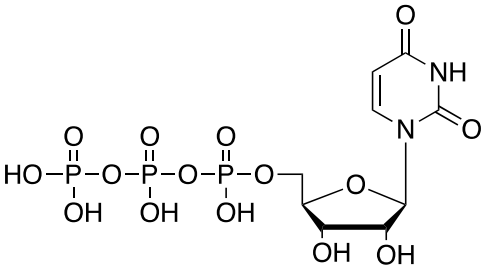
dAMP



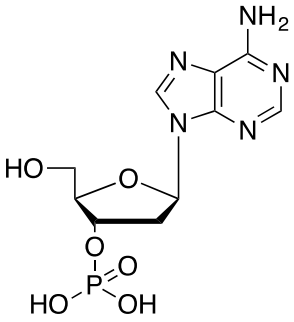
dATP



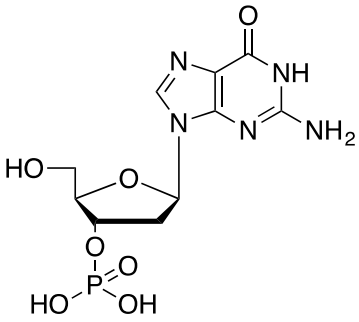
CMP



UTP



2-deoxyadenosine 3'-monophosphate



2-deoxyguanidine 3'-monophosphate

polymerases.

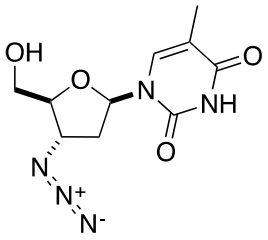
antiparallel
3'-end of the growing strand.
A *di-*phosphate

promoter
promoting
messenger RNA.
Ha! Caught you looking unnecessarily! codons.

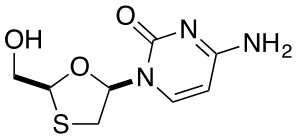
Exon
introns.
splicing.
transfer messenger

D. Nucleoside Drugs

DNA
arresting

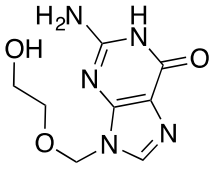


Zidovudine

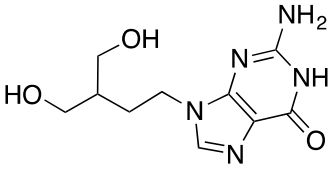


Lamivudine

treatment of HIV



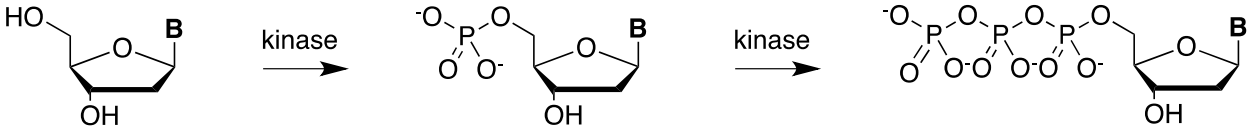
Acyclovir



Penciclovir

treatment of herpes

nucleotide triphosphates.
kinase

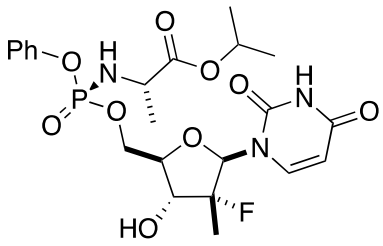


cell permeability likely

cell permeability unlikely

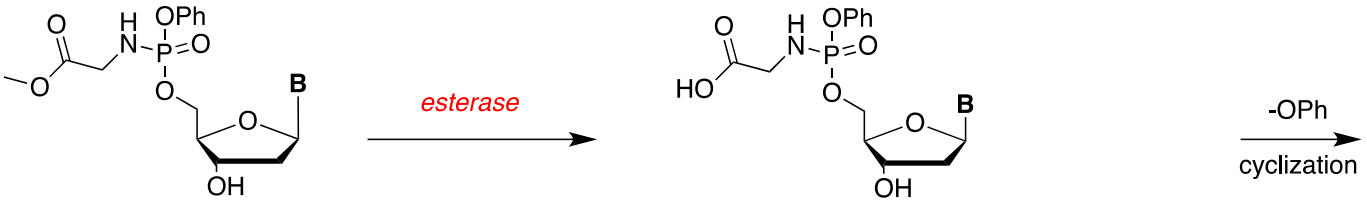
cell permeability unlikely

mono-
negatively
do not
do not



Sofosbuvir
treatment of hepatitis C

Nucleotide Prodrugs
neutral charged, *cell*
prodrug
ProTides.



cell permeable