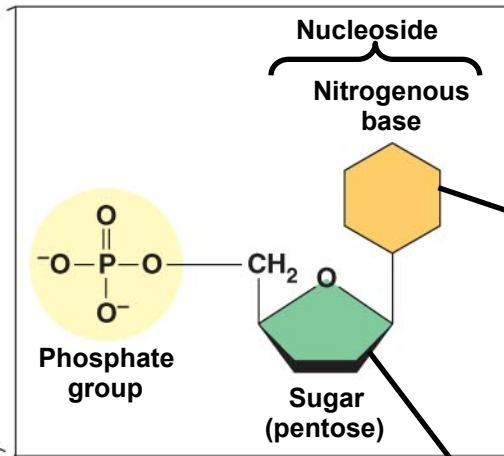
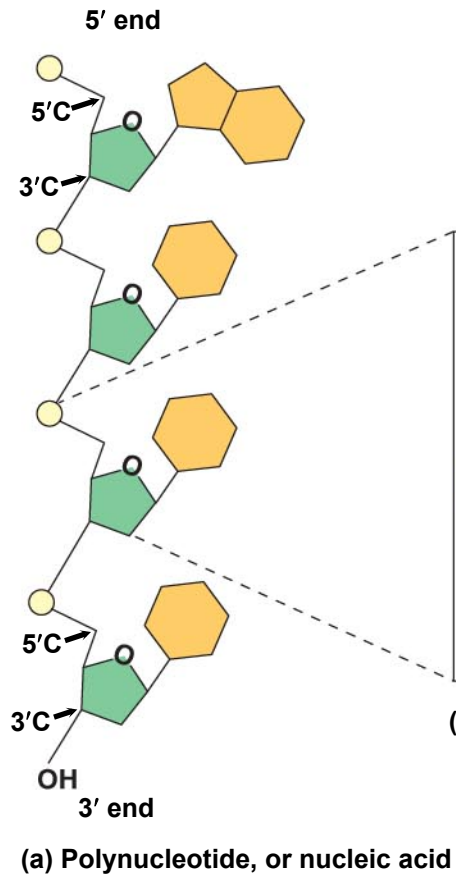
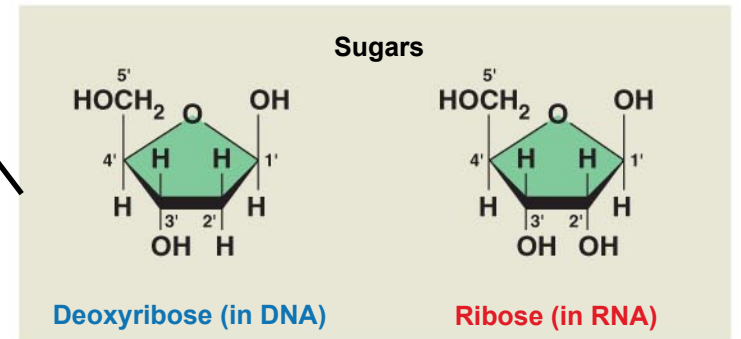
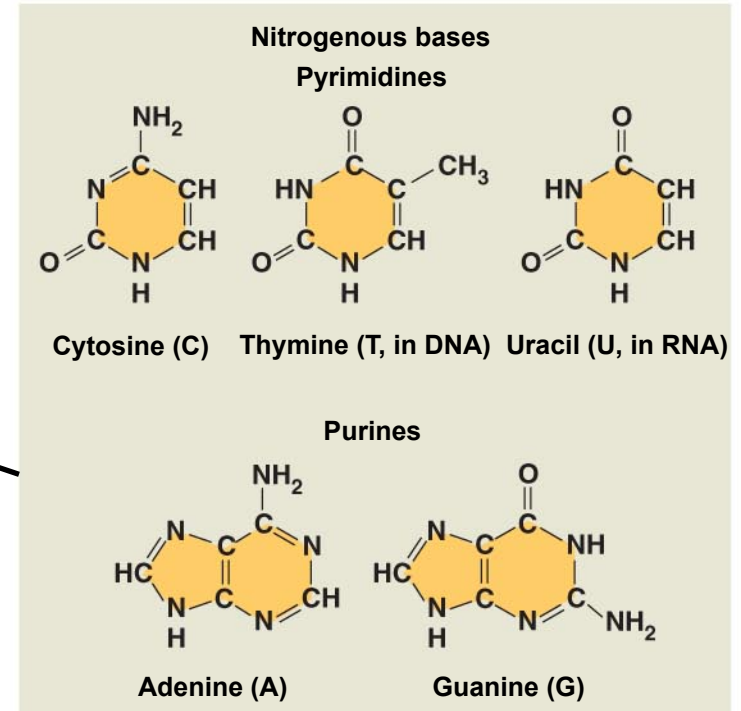


Restriction Enzymes

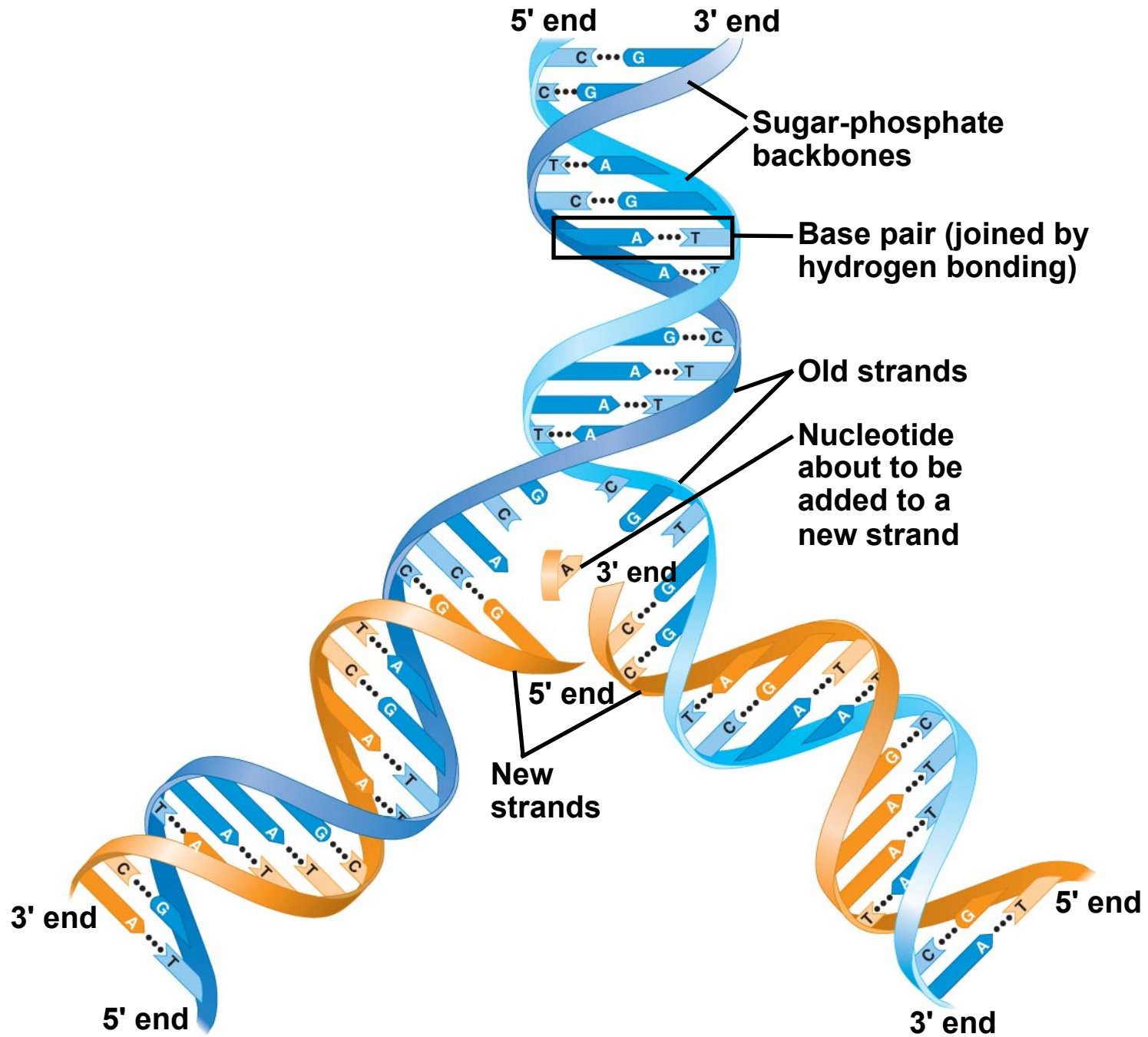
- Discovered in bacteria
- Allow bacteria to protect themselves from viri
- Specialized proteins (enzymes) that act as nucleases
- Break bonds between nucleotides (building blocks of nucleic acids, including DNA)
- Recognize specific, short sequences of nucleotides in DNA
- Cleave DNA at the recognition sites







(b) Nucleotide



(c) Nucleoside components: sugars



Enzyme 	Source 	Recognition Sequence 	Cut 
AluI*	<i>Arthrobacter luteus</i>	5'AGCT 3'TCGA	5'---AG CT---3' 3'---TC GA---5'
BamHI	<i>Bacillus amyloliquefaciens</i>	5'GGATCC 3'CCTAGG	5'---G GATCC---3' 3'---CCTAG G---5'
EcoP15I	<i>Escherichia coli</i>	5'CAGCAGN ₂₅ NN 3'GTCGTCN ₂₅ NN	5'---CAGCAGN ₂₅ NN ---3' 3'---GTCGTCN ₂₅ NN---5'
EcoRI	<i>Escherichia coli</i>	5'GAATTC 3'CTTAAG	5'---G AATTC---3' 3'---CTTAA G---5'
EcoRII	<i>Escherichia coli</i>	5'CCWGG 3'GGWCC	5'--- CCWGG---3' 3'---GGWCC ---5'
EcoRV*	<i>Escherichia coli</i>	5'GATATC 3'CTATAG	5'---GAT ATC---3' 3'---CTA TAG---5'
HaeIII*	<i>Haemophilus aegyptius</i>	5'GGCC 3'CCGG	5'---GG CC---3' 3'---CC GG---5'
HgaI ^[33]	<i>Haemophilus gallinarum</i>	5'GACGC 3'CTGCG	5'---NN NN---3' 3'---NN NN---5'
HindIII	<i>Haemophilus influenzae</i>	5'AAGCTT 3'TTCGAA	5'---A AGCTT---3' 3'---TTCGA A---5'

