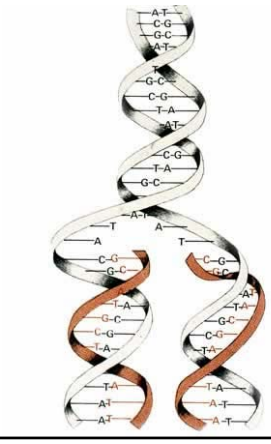
DNA extraction from plants – recap

- Smush (“homogenize”) the cells
- Dissolve membranes and solublize DNA in a detergent buffer with nuclease inhibitors
- Remove solids with centrifugation
- Remove proteins with KOAc precipitation
- Precipitate DNA with alcohol
- Remove DNA-bound proteins with phenol-chloroform and chloroform extraction

Waiter!

There's RNA in my food too...

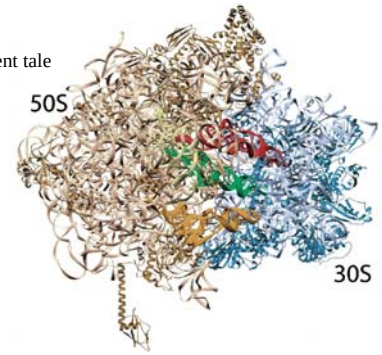


DNA

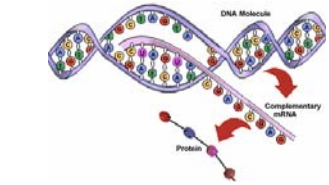
A stable, double helix designed to store information and be chemically unreactive

RNA

A different tale



T. thermophilus - Ramakrishnan *et al*., Cell, 2002



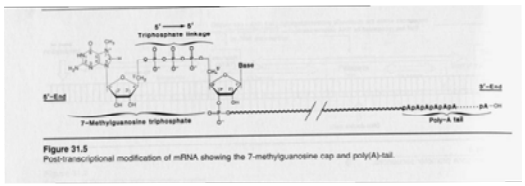


Figure 31.5
Post-transcriptional modification of mRNA showing the 7-methylguanosine cap and poly(A)-tail.

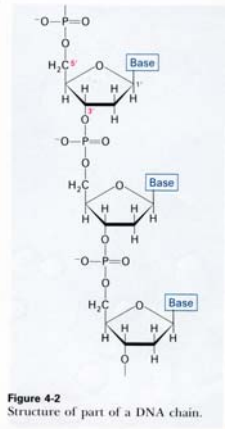


Figure 4-2
Structure of part of a DNA chain.

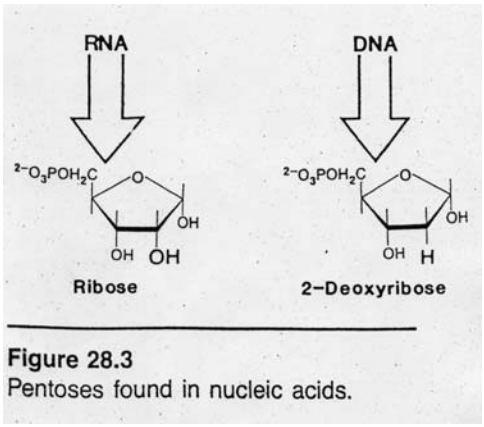
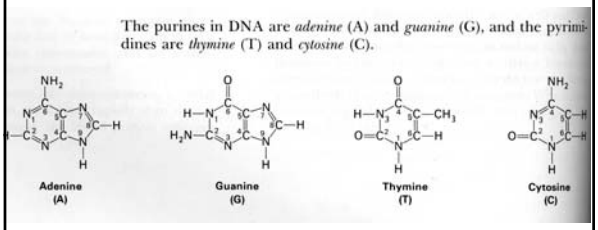


Figure 28.3
Pentoses found in nucleic acids.



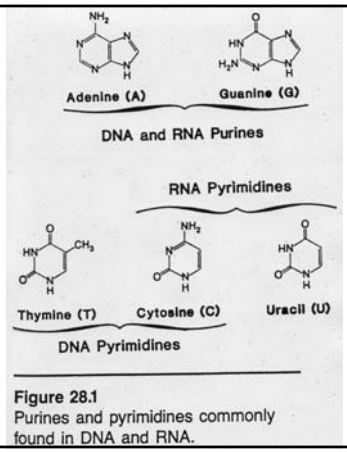
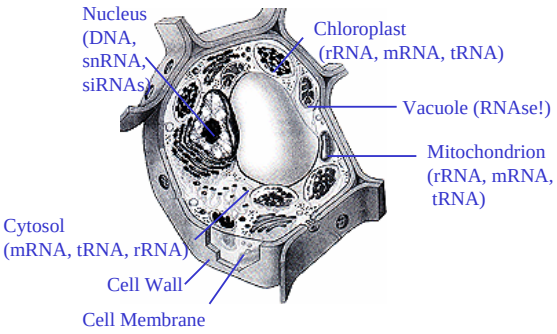


Figure 28.1
Purines and pyrimidines commonly found in DNA and RNA.

RNA extraction from plants

- Smush ("homogenize") the cells
- Dissolve membranes and solublize RNA in a detergent buffer *with RNAse inhibitors*
- Remove solids with centrifugation
- Remove proteins with phenol extraction
- Remove DNA with LiCl precipitation
- Precipitate RNA with alcohol



RNA extraction issues

- Homogenization
- RNAse
- DNA contamination
- pH of phenol