

Today

Sections 3.8 – 3.10
Structures and properties of organic molecules

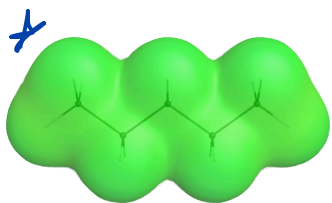
Sections 3.11 – 3.15
Rotation about single C–C bonds and
conformations of cyclohexanes

Next Class

Test 1 on Chapters 1 through 3 (degree of
substitution is the only topic from Chap 3)

Intermolecular Interactions

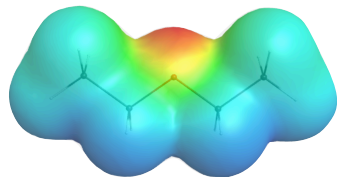
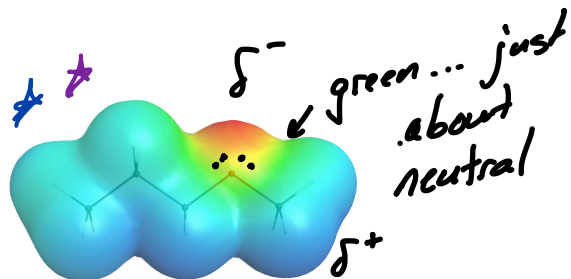
electrostatic potential map



electron density + electrostatic potential are uniform around pentane molecule

35.9 °C

ethers

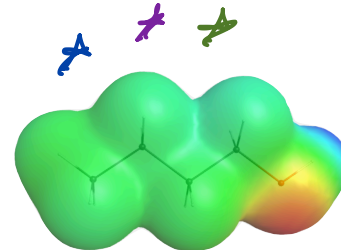


40.2 °C

36.4 °C

alcohol

Section 3.9, 3.10

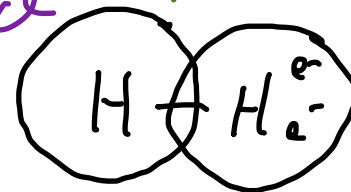
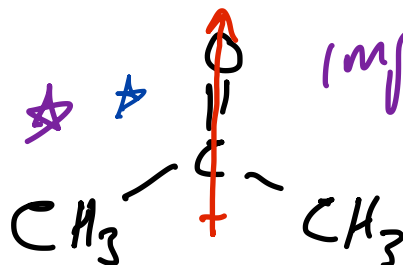
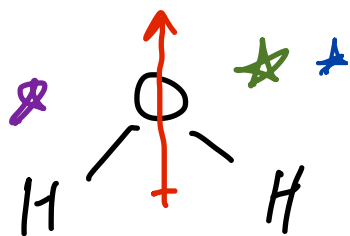


same # e⁻
same shells

same level of LDF's

this increase gives us info about the importance of H bonding

117 °C

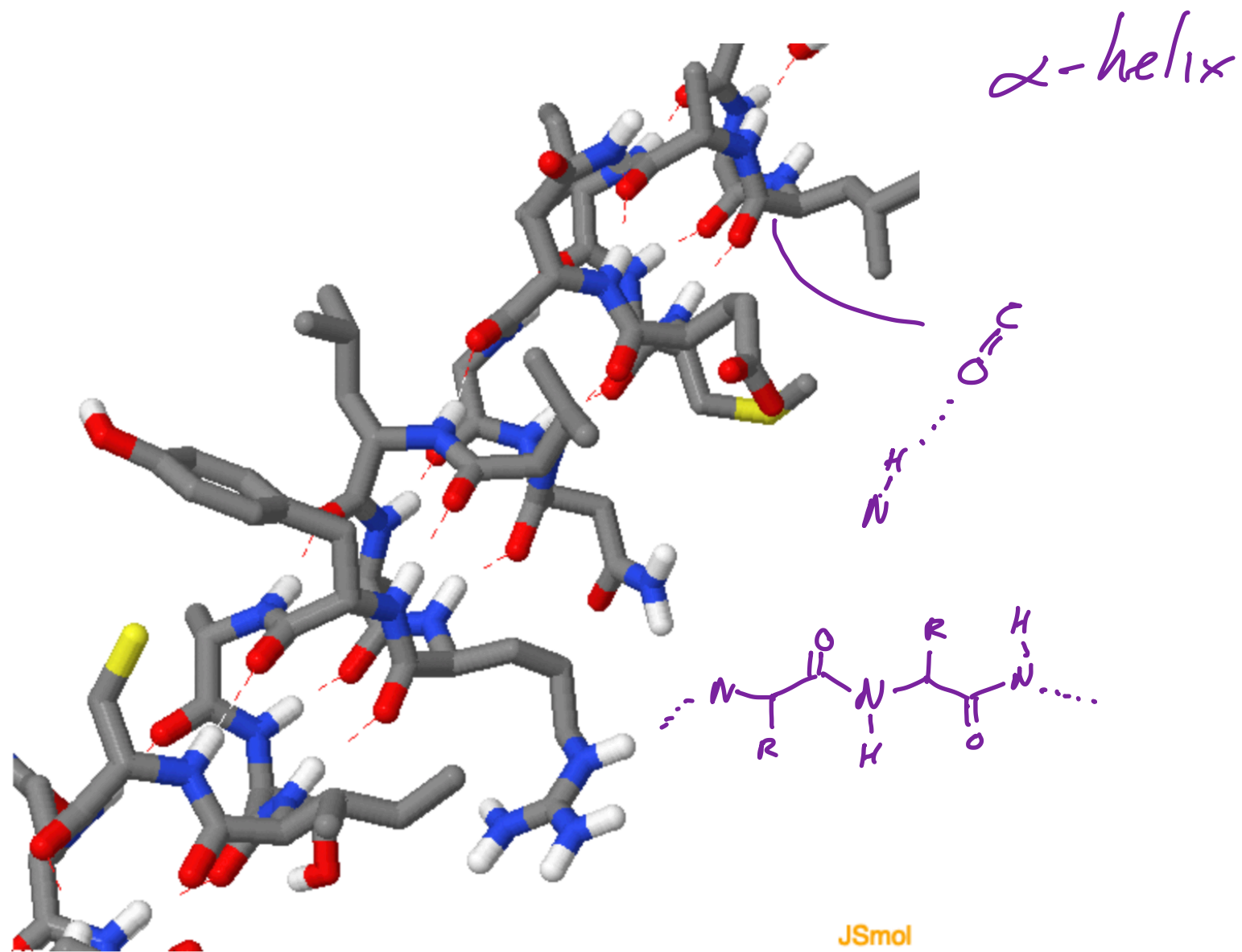


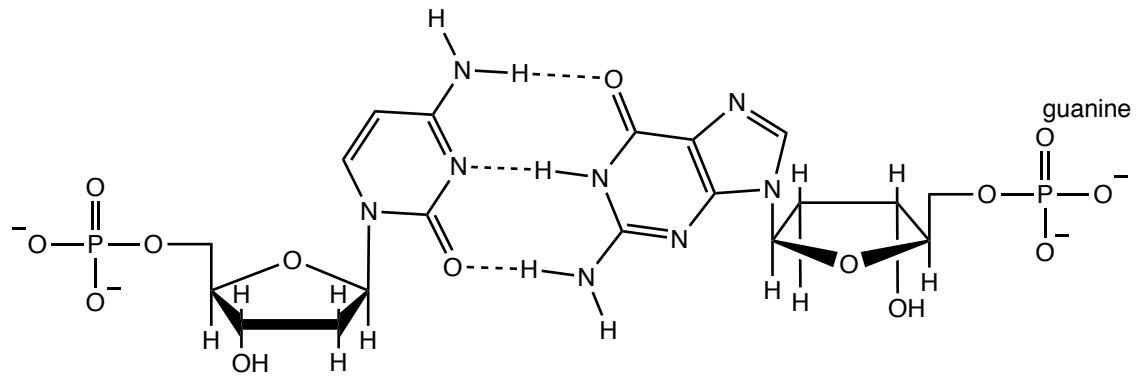
spontaneous momentary dipoles

dipole-dipole,

H-bonding,

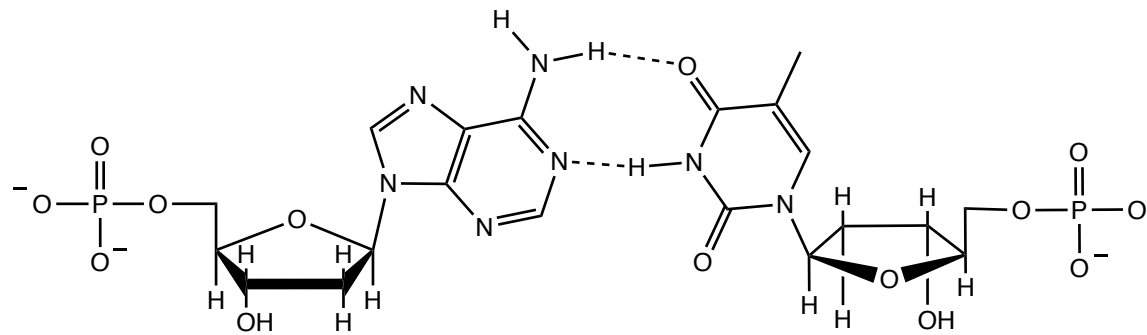
London dispersion





deoxycytidine monophosphate

deoxyguanosine monophosphate



deoxyadenosine monophosphate

deoxythymidine monophosphate

H-Bonding Interactions

Section 3.10

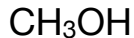
solubility

in H_2O

not soluble
in H_2O



vs



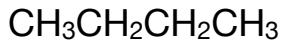
totally miscible



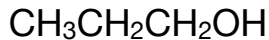
vs



a measure of how well a OH can -



vs



1-butanol;



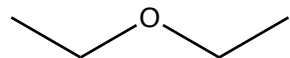
vs



100g in 1L;

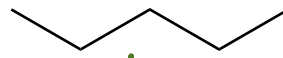
0.038g in
1L of
 H_2O

60g in 1L



diethyl ether

0.038g



disrupts
H-bonds

drag
non-polar

fragments
into H_2O



H-bond acceptor

H bond donors

water has an opportunity to H-bond so it can include more molecules

60 and 0.038