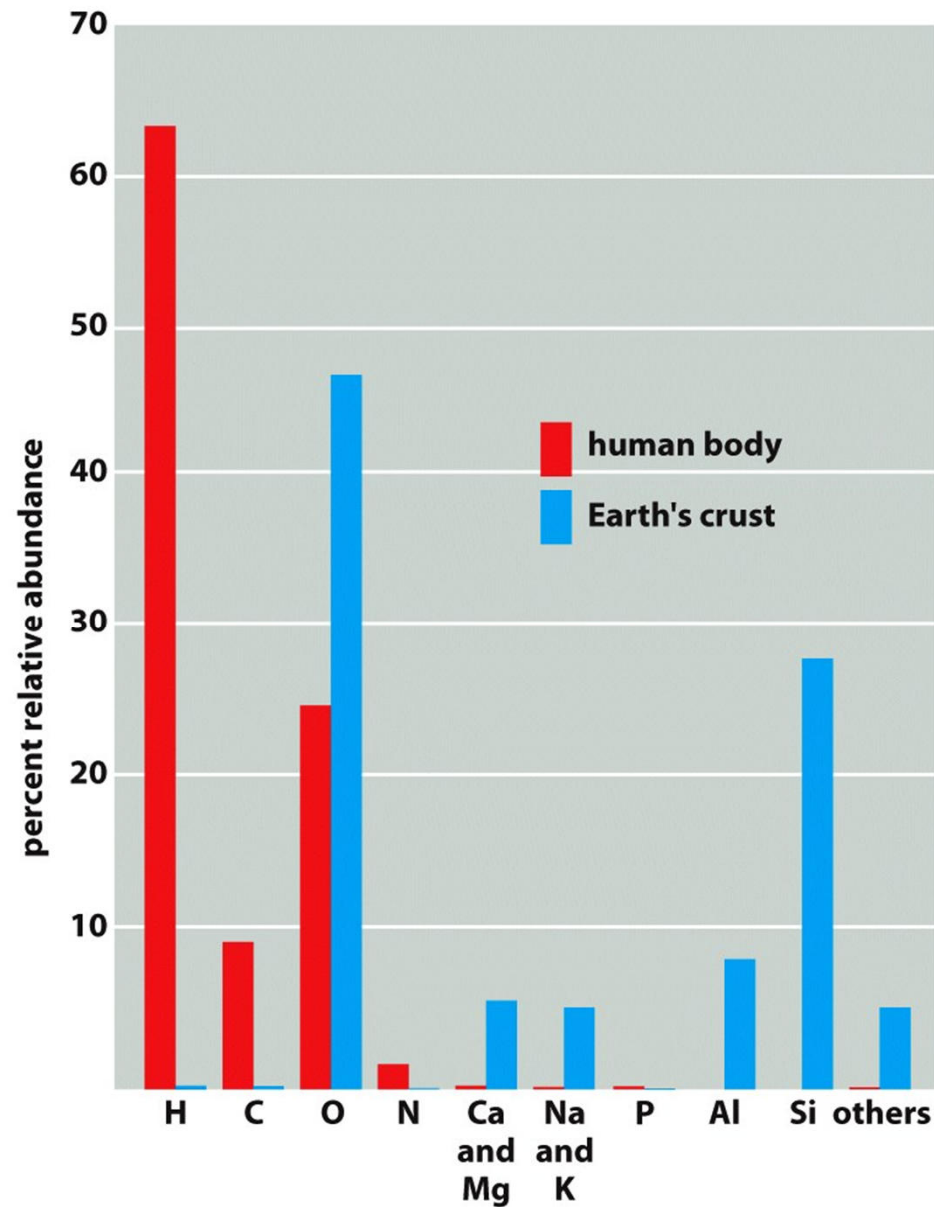


Chemické složení buňky

výtah z přednášky

RNDr. Karel Královec, Ph.D.

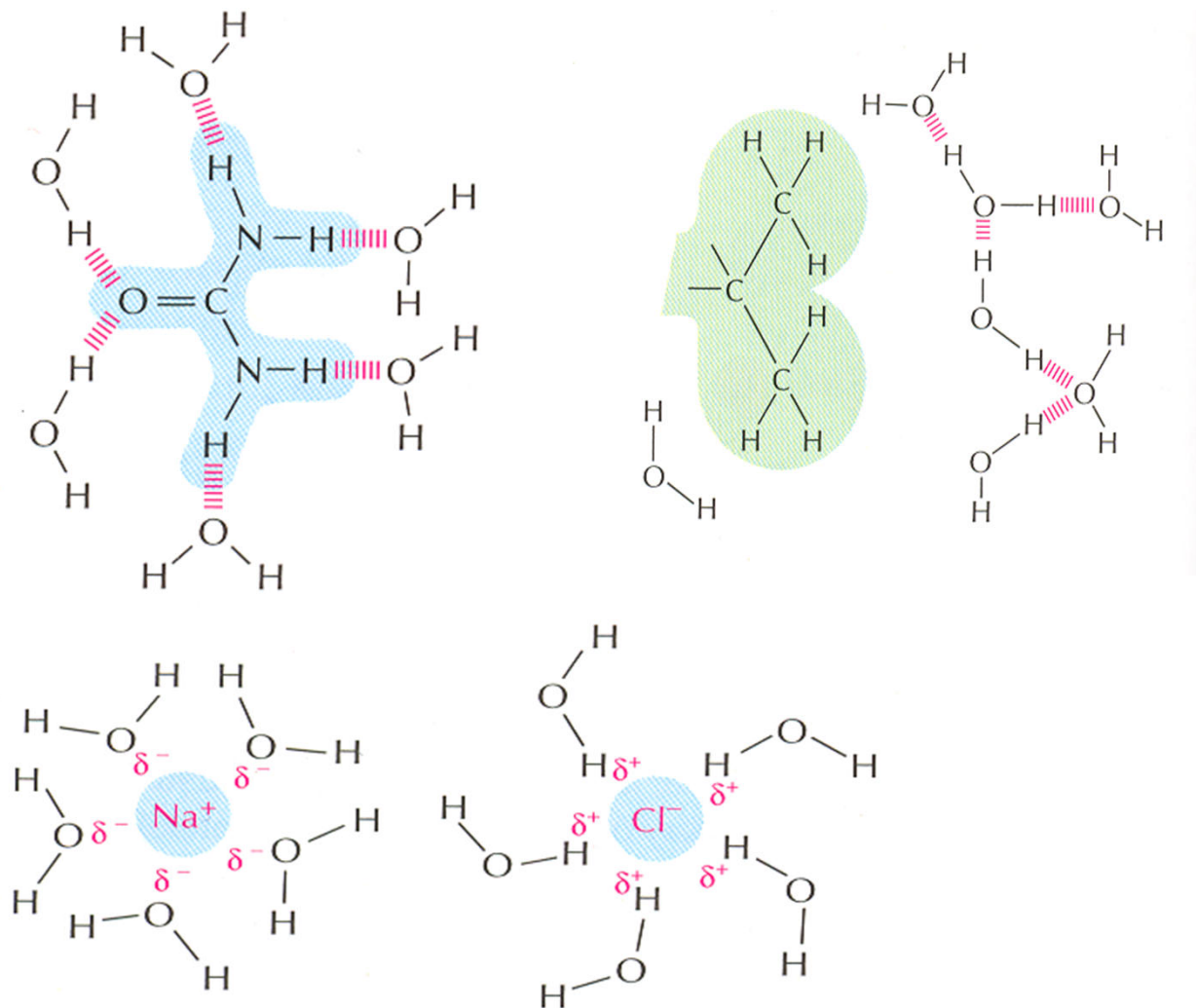




Zastoupení některých chemických prvků v zemské kůře ve srovnání s jejich zastoupením ve tkáních živočichů

Figure 2-4 Essential Cell Biology 3/e (© Garland Science 2010)

Voda a její vlastnosti



Chemické složení buňky

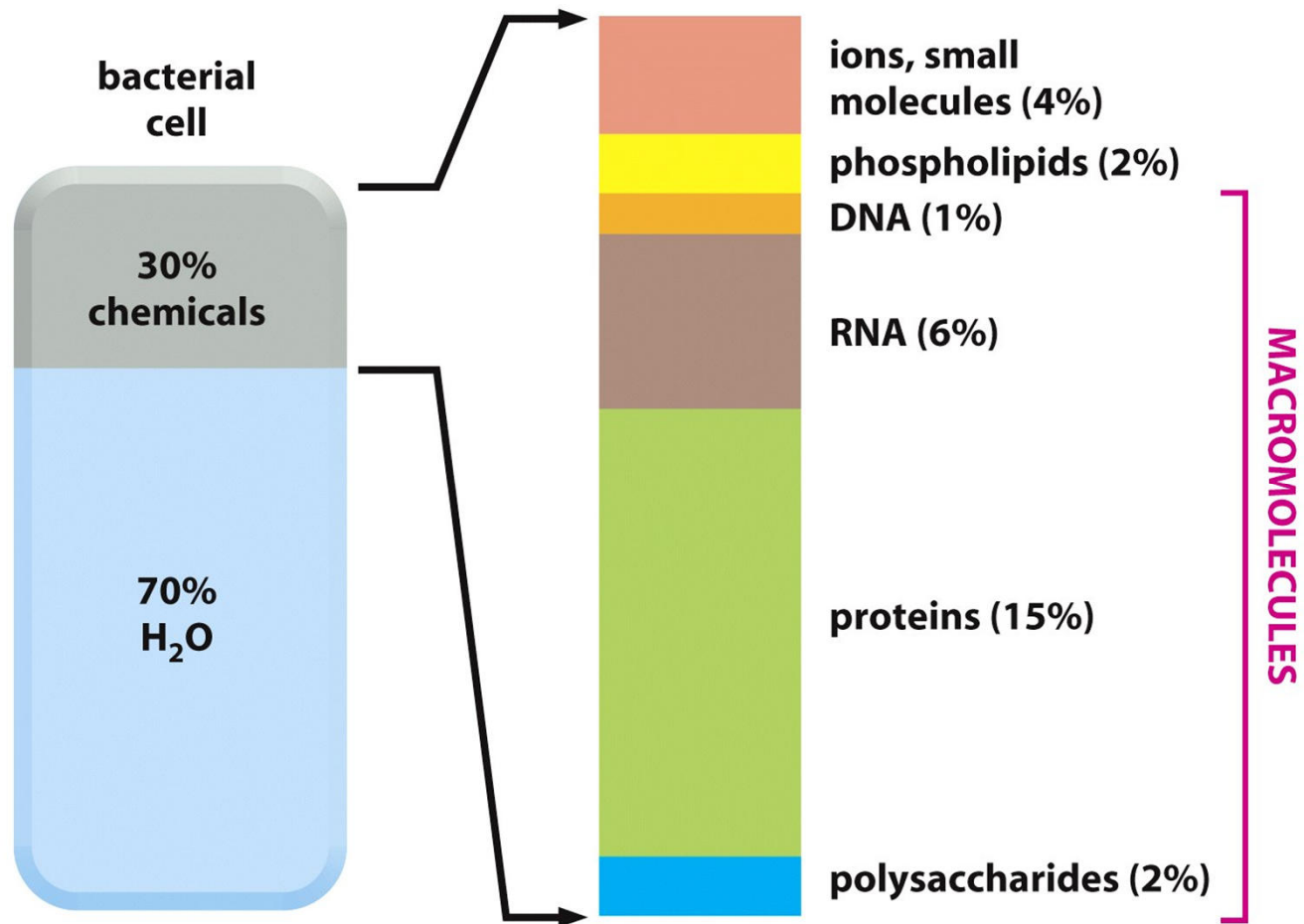


Figure 2-29 Molecular Biology of the Cell 5/e (© Garland Science 2008)

Čtyři hlavní skupiny malých organických molekul v buňkách

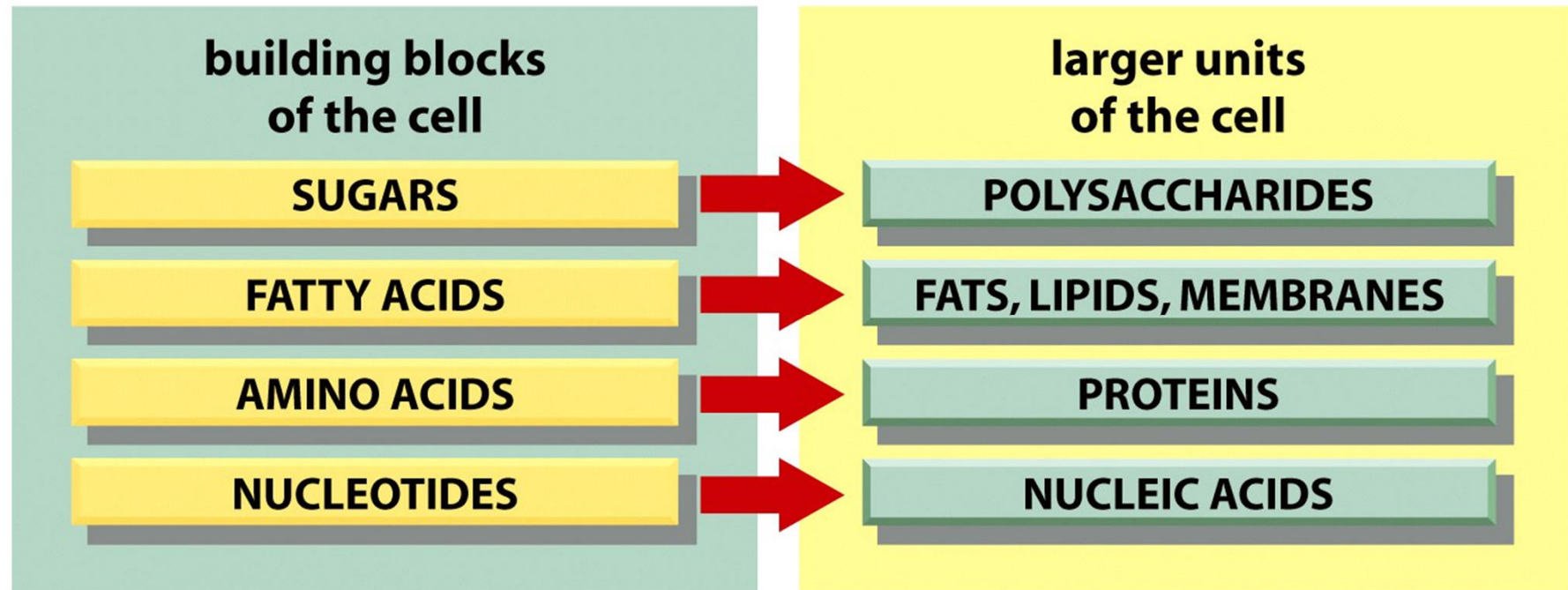


Figure 2-17 Molecular Biology of the Cell 5/e (© Garland Science 2008)

Struktura fosfolipidů a jejich organizace v membráně

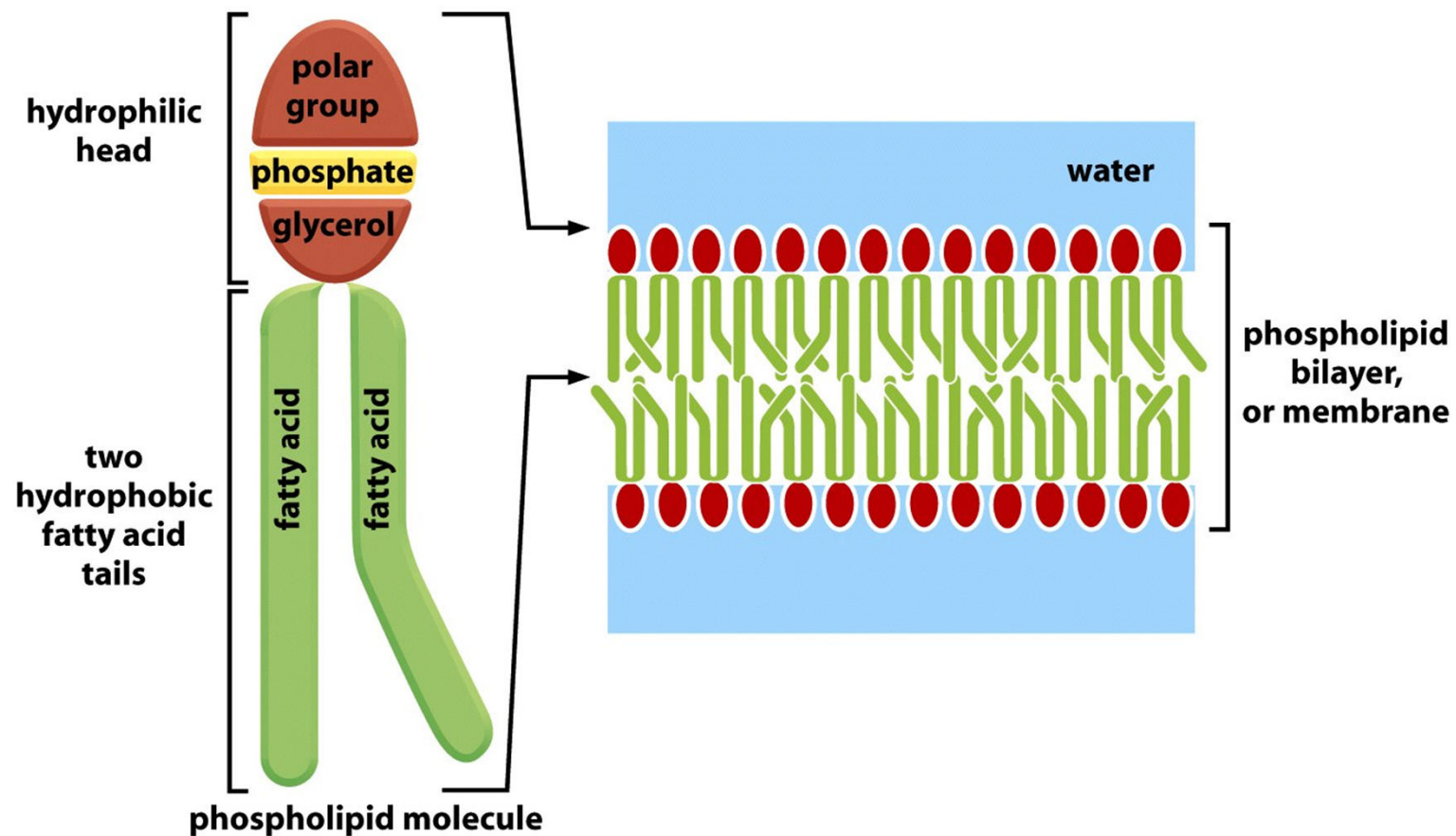
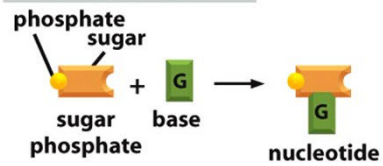


Figure 2-22 Molecular Biology of the Cell 5/e (© Garland Science 2008)

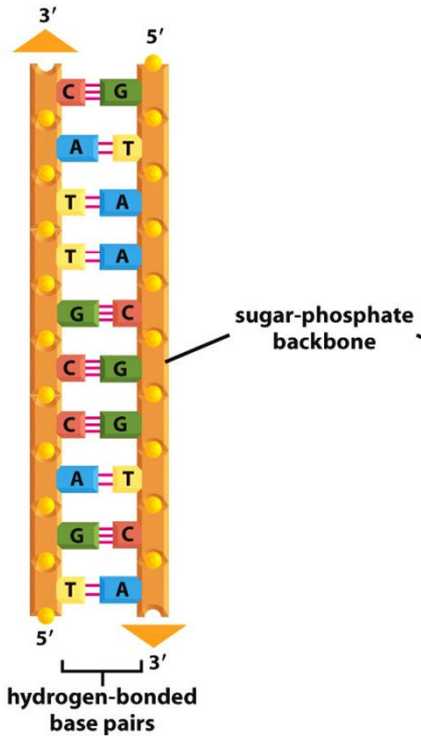
building blocks of DNA



DNA strand



double-stranded DNA



DNA double helix

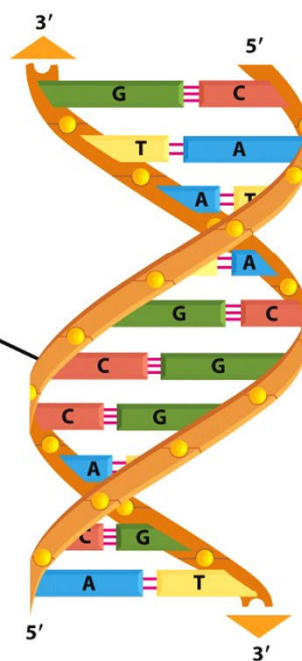


Figure 4-3 Molecular Biology of the Cell 5/e (© Garland Science 2008)

Základní stavební jednotky DNA

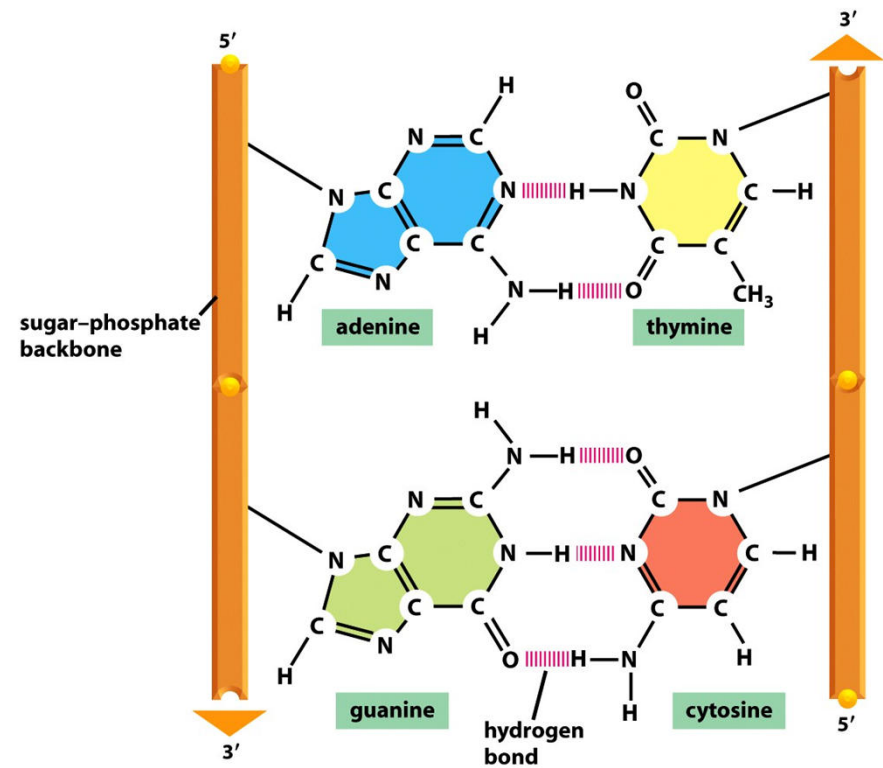
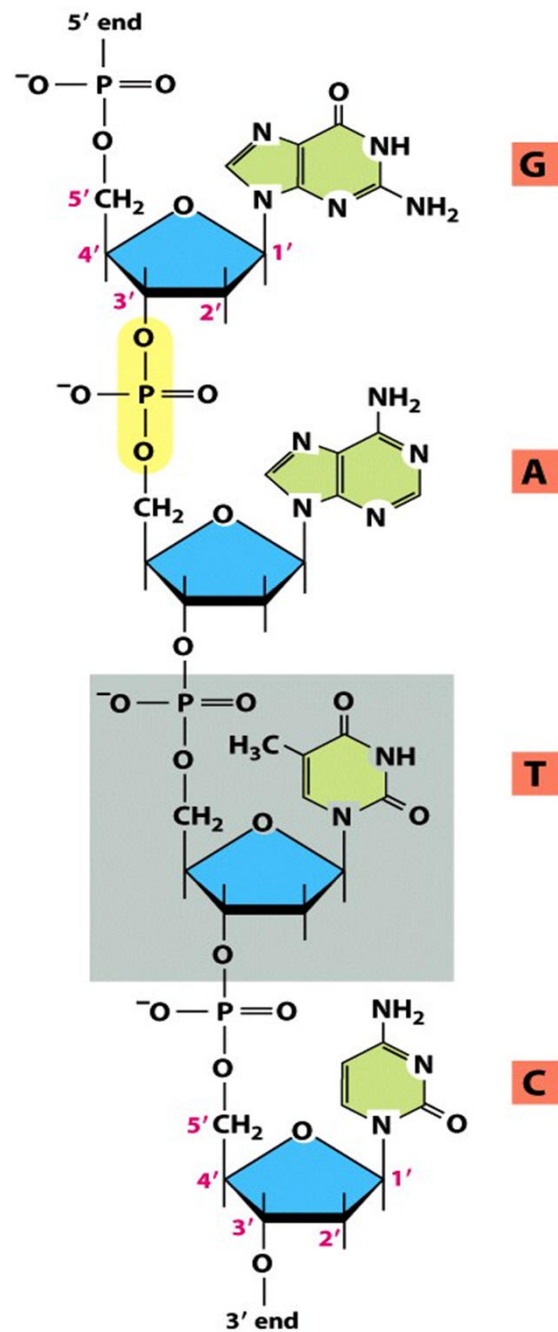


Figure 4-4 Molecular Biology of the Cell 5/e (© Garland Science 2008)



Úsek jedno z vláken DNA se všemi
čtyřmi nukleotidovými zbytky

Figure 2-25 Essential Cell Biology 3/e (© Garland Science)

Struktura RNA

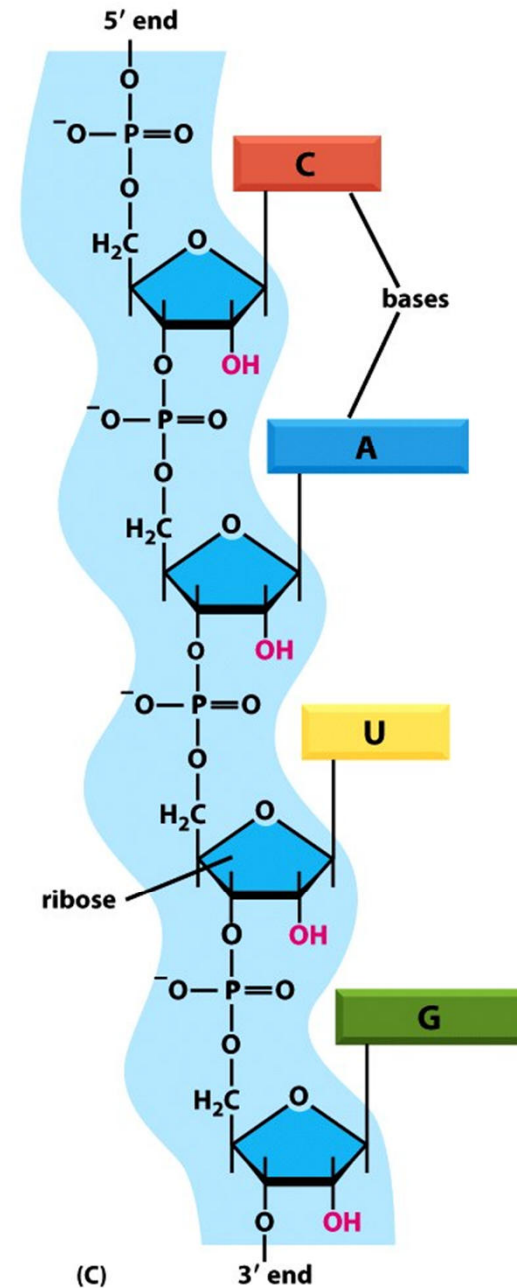
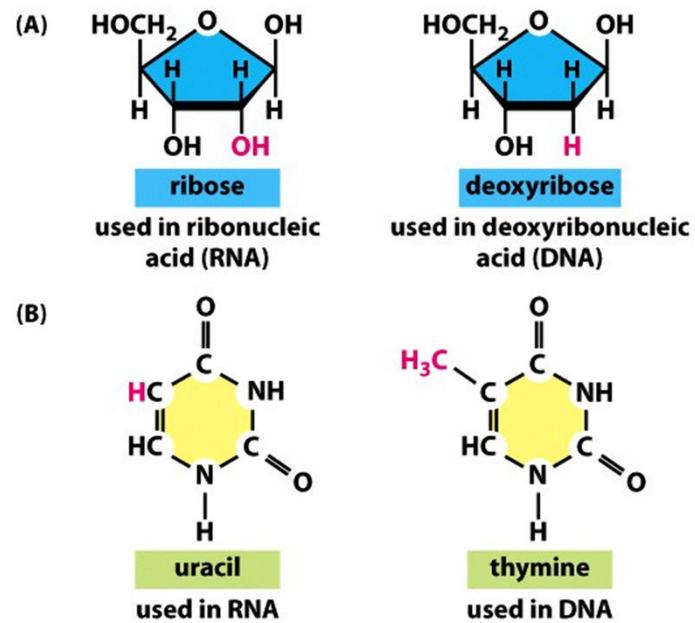


Figure 6-4 Molecular Biology of the Cell 5/e (© Garland Science 2008)

Nukleotidy jsou navzájem spojeny fosfodiesterovou vazbou mezi uhlíky 5' a 3', a tvoří tak nukleovou kyselinu

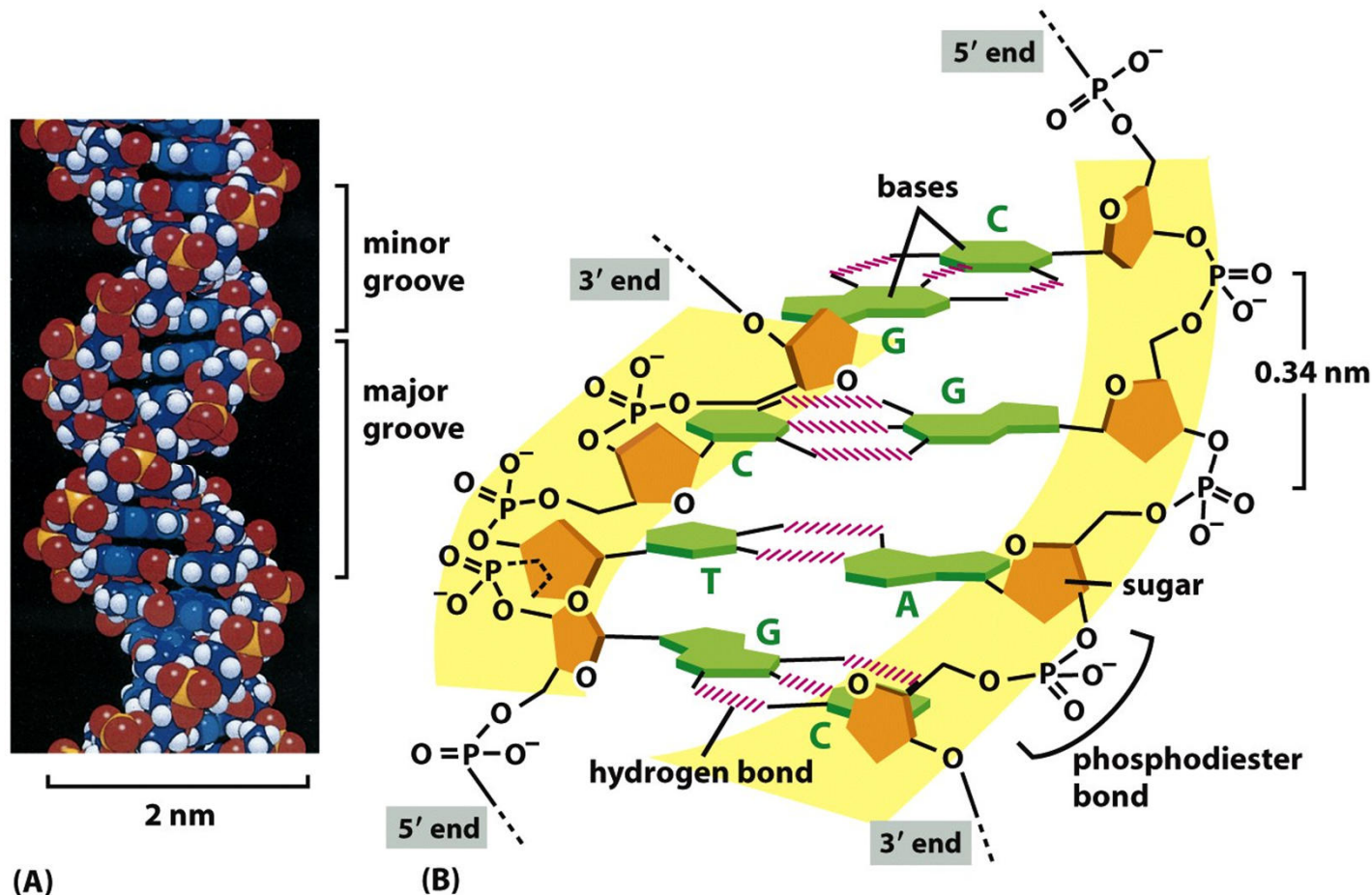
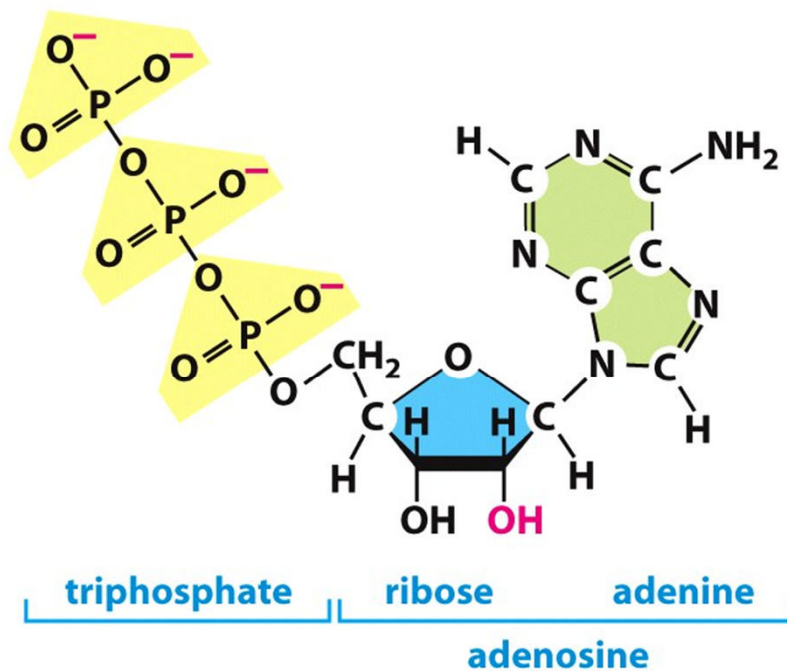


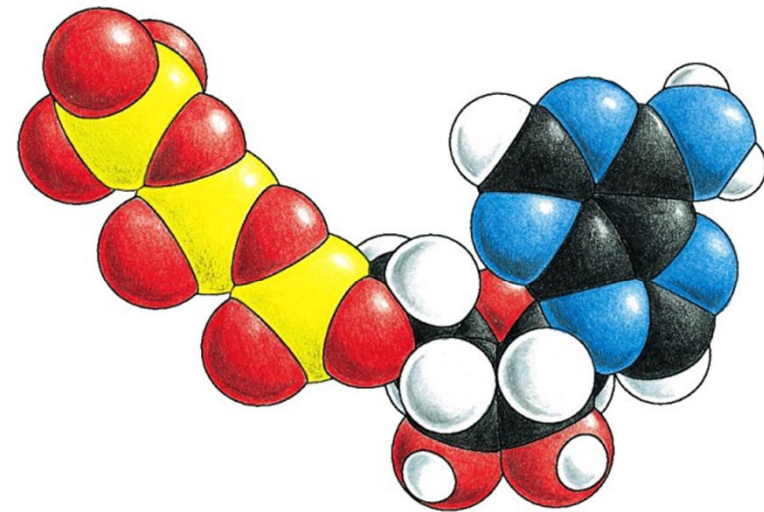
Figure 4-5 Molecular Biology of the Cell 5/e (© Garland Science 2008)

Chemická struktura adenosintrifosfátu (ATP)



(A)

Figure 2-23 Essential Cell Biology 3/e (© Garland Science 2010)



(B)

Klasifikace aminokyselin

AMINO ACID		SIDE CHAIN	
Aspartic acid	Asp	D	negative
Glutamic acid	Glu	E	negative
Arginine	Arg	R	positive
Lysine	Lys	K	positive
Histidine	His	H	positive
Asparagine	Asn	N	uncharged polar
Glutamine	Gln	Q	uncharged polar
Serine	Ser	S	uncharged polar
Threonine	Thr	T	uncharged polar
Tyrosine	Tyr	Y	uncharged polar

POLAR AMINO ACIDS
(hydrophilic)

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AMINO ACID		SIDE CHAIN	
Alanine	Ala	A	nonpolar
Glycine	Gly	G	nonpolar
Valine	Val	V	nonpolar
Leucine	Leu	L	nonpolar
Isoleucine	Ile	I	nonpolar
Proline	Pro	P	nonpolar
Phenylalanine	Phe	F	nonpolar
Methionine	Met	M	nonpolar
Tryptophan	Trp	W	nonpolar
Cysteine	Cys	C	nonpolar

NONPOLAR AMINO ACIDS
(hydrophobic)

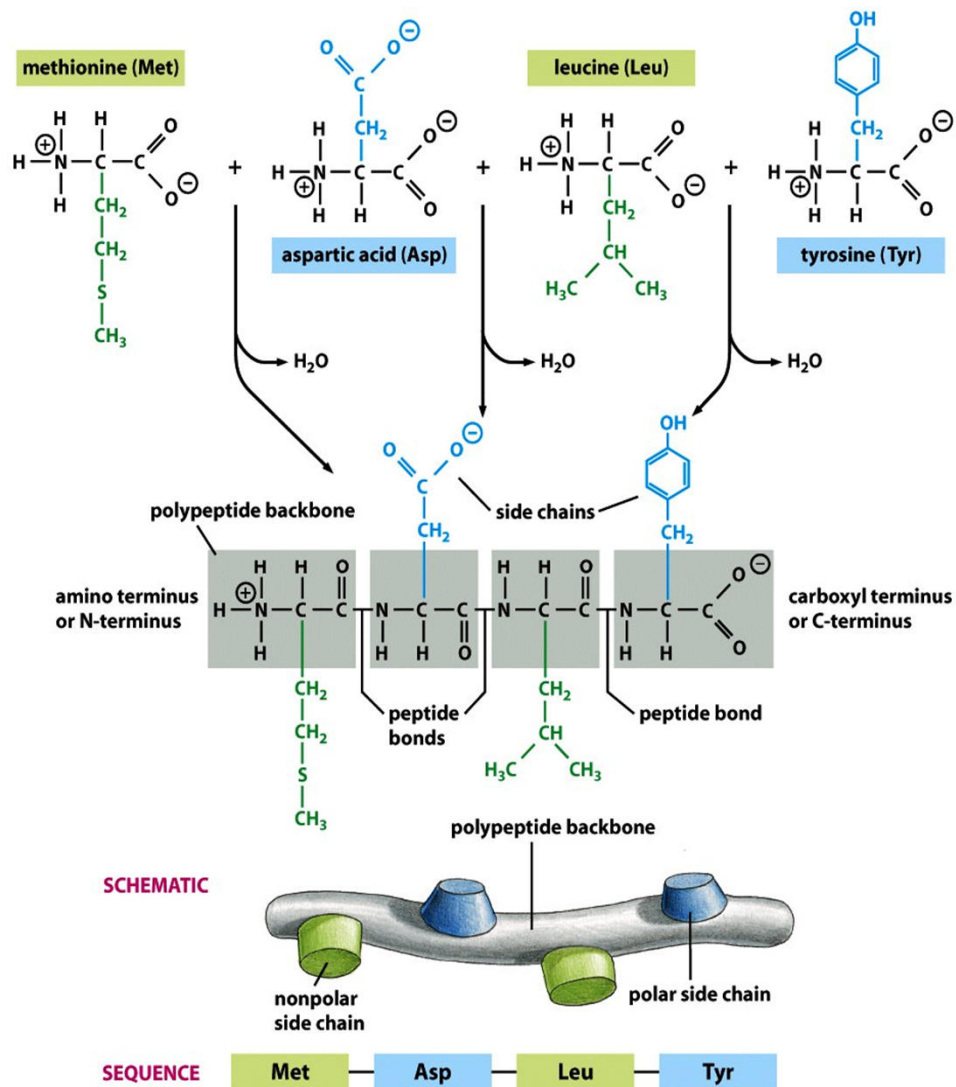
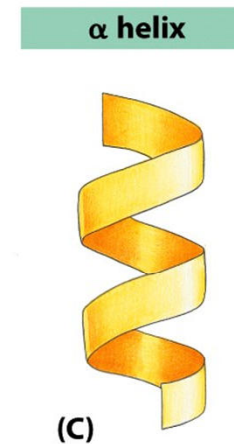
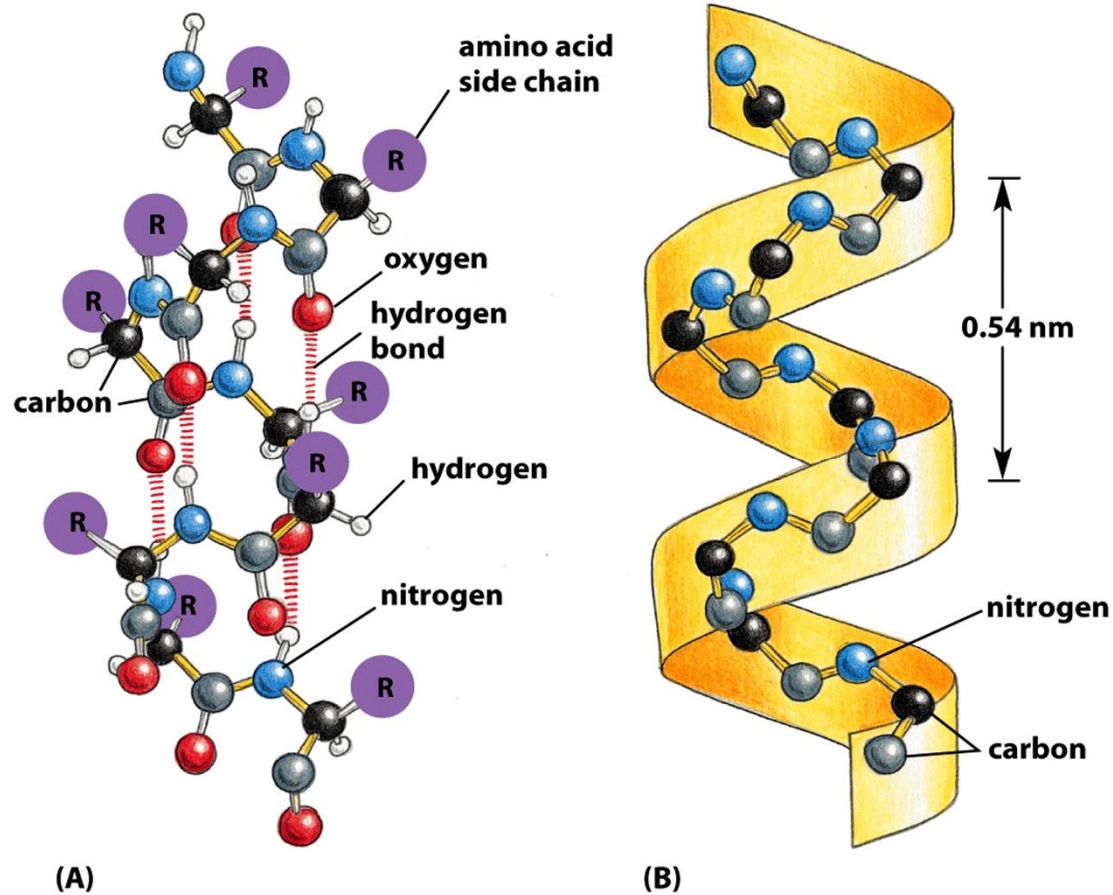


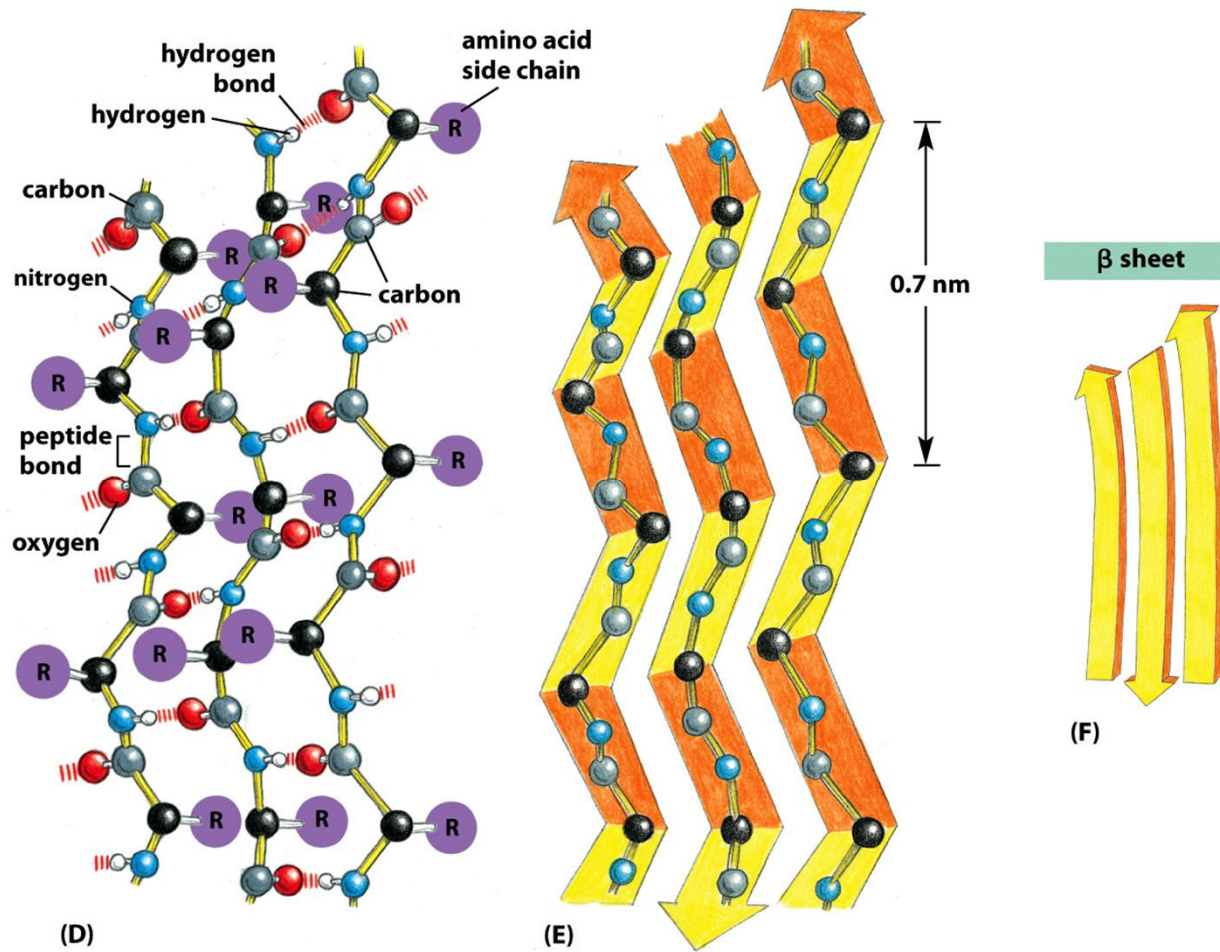
Figure 3-1 Molecular Biology of the Cell 5/e (© Garland Science 2008)

Proteiny se skládají z polypeptidové kostry, ke které jsou připojeny postranní řetězce

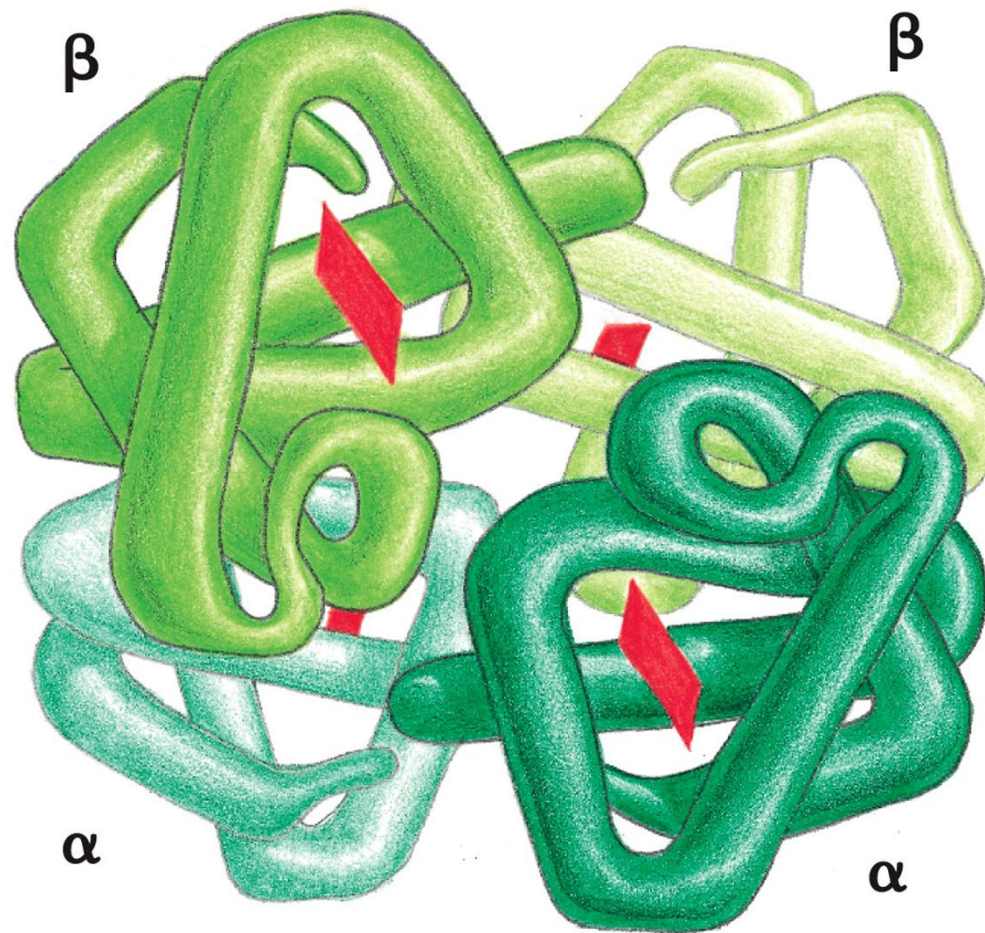
Sekundární struktura proteinů - alfa-helix (α -helix)



Sekundární struktura proteinů - struktura skládaného listu (β -struktura)



Hemoglobin - protein tvořený symetrickým souborem dvou různých podjednotek



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