

Aminosavak I. (fehérjealkotó aminosavak)

Az emberben előforduló fehérjealkotó aminosavak L-konfigurációjúak, a Cahn–Ingold–Prelog-nevezéktan alapján pedig az S-sorozatba tartoznak a Cys kivételével (ami R konfigurációjú).

glicin (Gly, G)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{H} \end{array}$
alanin (Ala, A)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_3 \end{array}$
valin (Val, V)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH} \\ / \quad \backslash \\ \text{H}_3\text{C} \quad \text{CH}_3 \end{array}$
leucin (Leu, L)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{CH} \\ / \quad \backslash \\ \text{H}_3\text{C} \quad \text{CH}_3 \end{array}$
izoleucin (Ile, I)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{HC}-\text{CH}_3 \\ \\ \text{CH}_2 \\ \\ \text{CH}_3 \end{array}$
szerin (Ser, S)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{OH} \end{array}$
treonin (Thr, T)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{HC}-\text{OH} \\ \\ \text{CH}_3 \end{array}$
cisztein (Cys, C) – diszulfid híddal összekapcsolt két cisztein: cisztin	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{SH} \end{array} \quad \begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{S} \end{array} \text{-----} \begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{S} \end{array}$
metionin (Met, M)	$\begin{array}{c} \text{H}_3\text{N}^+ \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{S} \\ \\ \text{CH}_3 \end{array}$

aszparaginsav (Asp, D)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{COO}^- \end{array} $
glutaminsav (Glu, E)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{COO}^- \end{array} $
aszparagin (Asn, N)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{CONH}_2 \end{array} $
glutamin (Gln, Q)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{CONH}_2 \end{array} $
lizin (Lys, K)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ (\text{CH}_2)_4 \\ \\ \text{NH}_3^+ \end{array} $
arginin (Arg, R)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ (\text{CH}_2)_3 \\ \\ \text{NH} \\ \\ \text{C}=\text{NH}_2^+ \\ \\ \text{NH}_2 \end{array} $
hisztidin (His, H)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \begin{array}{c} \text{---} \text{NH}^+ \\ \diagup \quad \diagdown \\ \text{---} \text{N} \text{---} \\ \\ \text{H} \end{array} \end{array} $
fenilalanin (Phe, F)	$ \begin{array}{c} ^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ \text{CH}_2 \\ \\ \text{C}_6\text{H}_5 \end{array} $

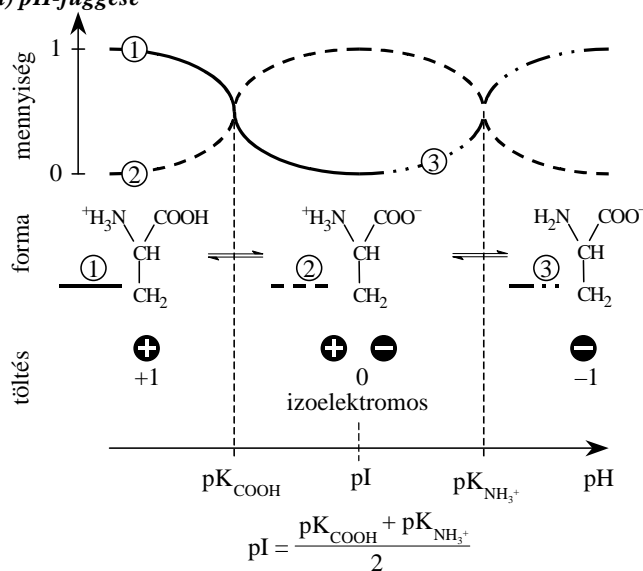
tirozin (Tyr, Y)	
triptofán (Trp, W)	
prolin (Pro, P)	

Aminosavak II. (aminosavak különböző pH-n)

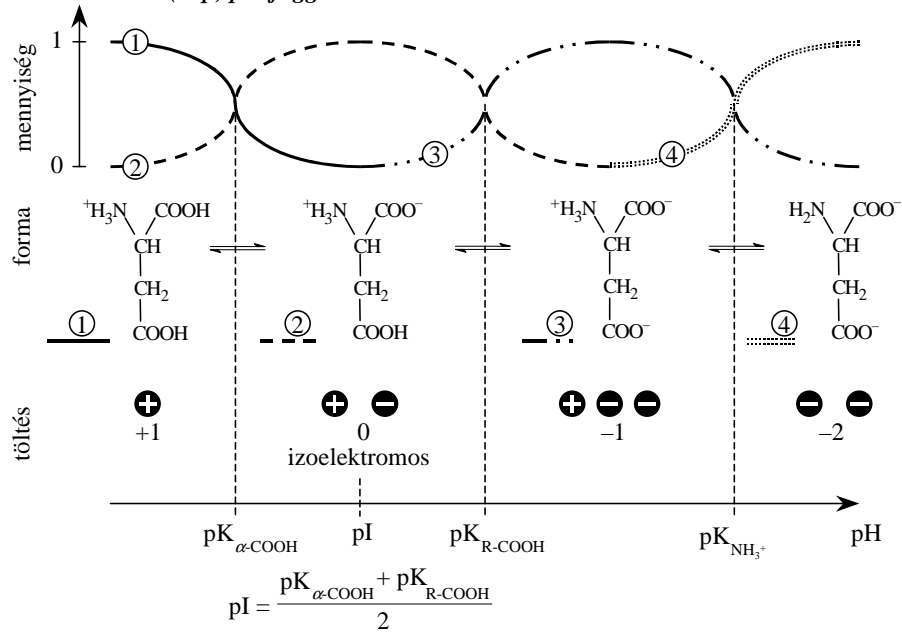
Az aminosavak α -amino- ill. α -karboxilcsoportja (és egyes aminosavaknál az oldallánc) különböző pH-n protonált ill. deprotonált formában van jelen. Ha a pH kisebb, mint az adott csoport pK értéke, akkor a csoport protonált formában van jelen, ha nagyobb, a csoport deprotonálódik, ha a pH = pK, akkor a csoport fele protonált, fele deprotonált formában van jelen, ilyenkor az aminosav pufferként viselkedik.

Izoelektromosnak nevezzük azt a formát, amikor az aminosav össztöltése 0, az ehhez tartozó pH-érték az izoelektromos pont (pI). Az aminosav az izoelektromos pontban nem működik pufferként.

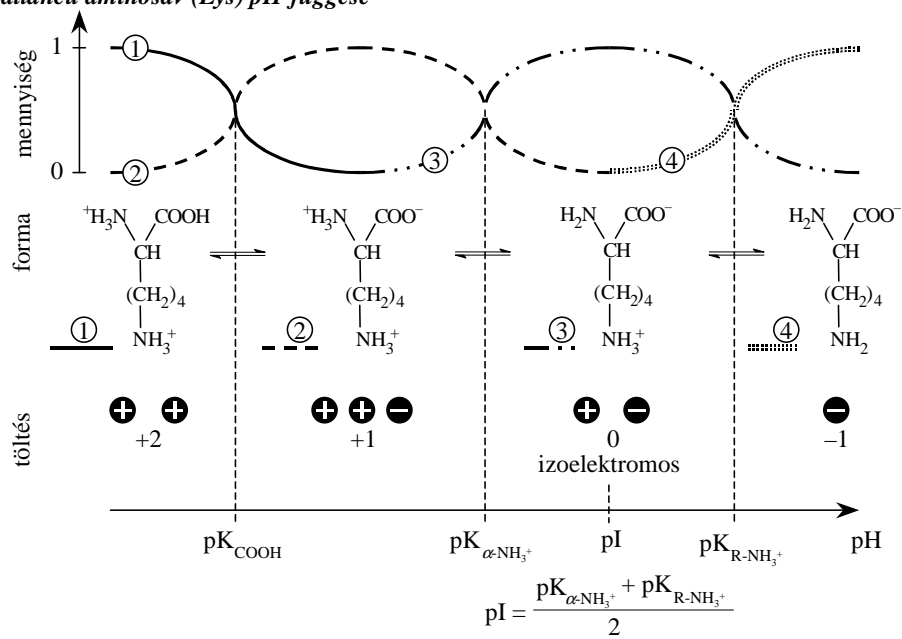
Semleges aminosav (Ala) pH-függése



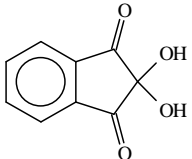
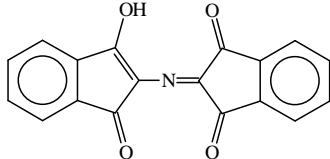
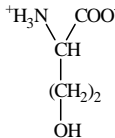
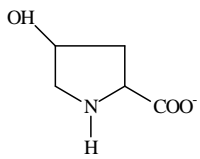
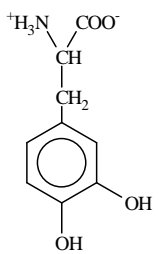
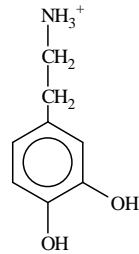
Savas oldalláncú aminosav (Asp) pH-függése

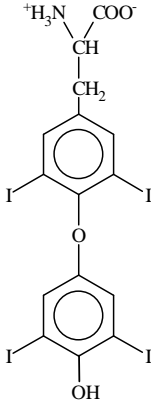
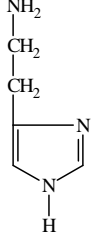
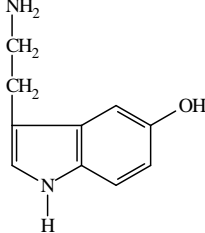
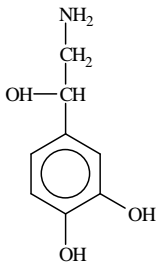
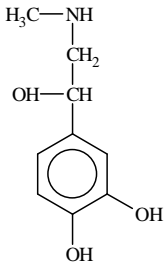
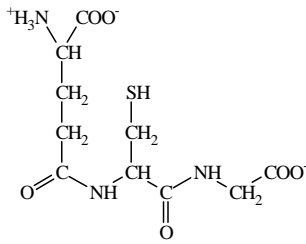


Bázikus oldalláncú aminosav (Lys) pH-függése



Aminosavak III. (aminosavszármazékok)

ninhidrin, kondenzált termék (aminosavak kimutatása)	 
β -alanin	${}^+\text{H}_3\text{N}-\text{CH}_2-\text{CH}_2-\text{COO}^-$
ornitin	$\begin{array}{c} {}^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ (\text{CH}_2)_3 \\ \\ \text{NH}_3^+ \end{array}$
citrullin	$\begin{array}{c} {}^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ (\text{CH}_2)_3 \\ \\ \text{NH} \\ \\ \text{C}=\text{O} \\ \\ \text{NH}_2 \end{array}$
homocisztein, homoszerin	$\begin{array}{c} {}^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ (\text{CH}_2)_2 \\ \\ \text{SH} \end{array}$ 
γ -amino vajsav (GABA)	${}^+\text{H}_3\text{N}-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{COO}^-$
norleucin	$\begin{array}{c} {}^+\text{H}_3\text{N} \quad \text{COO}^- \\ \diagdown \quad / \\ \text{CH} \\ \\ (\text{CH}_2)_3 \\ \\ \text{CH}_3 \end{array}$
taurin	${}^+\text{H}_3\text{N}-\text{CH}_2-\text{CH}_2-\text{SO}_3^-$
4-hidroxi-prolin	
L-DOPA, dopamin	 
putreszcin	$\text{H}_2\text{N}-(\text{CH}_2)_4-\text{NH}_2$
spermidin	$\text{H}_2\text{N}-(\text{CH}_2)_4-\text{NH}-(\text{CH}_2)_3-\text{NH}_2$

spermin	$\text{H}_2\text{N}-(\text{CH}_2)_3-\text{NH}-(\text{CH}_2)_4-\text{NH}-(\text{CH}_2)_3-\text{NH}_2$	
tiroxin		
hisztamin, szerotonin (5-hidroxi-triptamin)		
noradrenalin, adrenalin		
glutation (γ -Glu-Cys-Gly)		

Monoszacharidok: aldózok

D-glicerinaldehid, D-glicerinaldehid-3-foszfát	$\begin{array}{c} \text{H} \\ \\ \text{C}=\text{O} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{H} \\ \\ \text{C}=\text{O} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{O}-\text{P}(=\text{O})(\text{O}^-)-\text{O}^- \\ \\ \text{H} \end{array}$		
D-eritróz, D-treóz	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$		
D-ribóz, D-arabinóz, D-xilóz	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	
D-glükóz, D-mannóz, D-galaktóz	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{HCO} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	
nyílt és gyűrűs glükóz α -D-glükóz, \rightleftharpoons nyílt láncú glükóz \rightleftharpoons β -D-glükóz		$\begin{array}{c} \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array}$

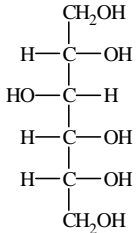
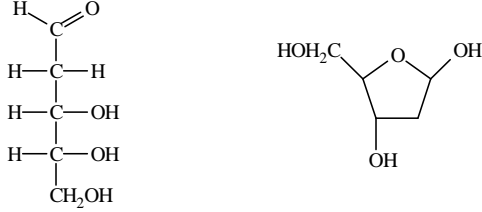
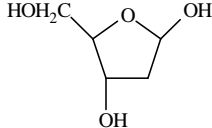
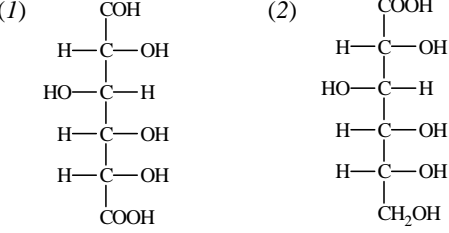
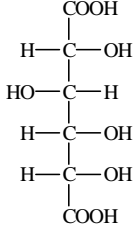
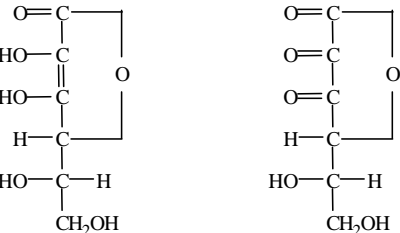
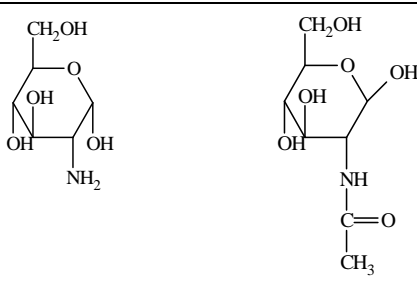
Monoszacharidok: ketózok

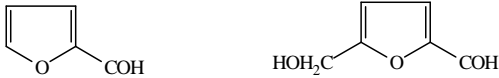
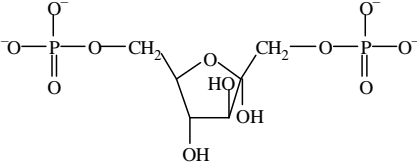
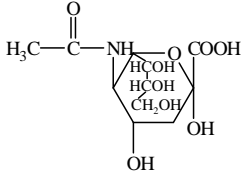
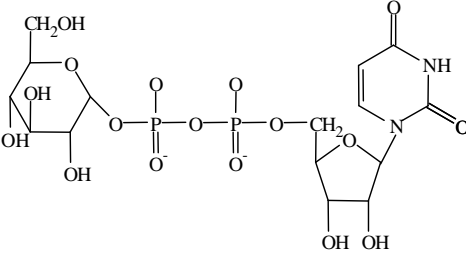
dihidroxiaceton, dihidroxiaceton- foszfát	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{C}=\text{O} \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{C}=\text{O} \\ \\ \text{H}-\text{C}-\text{O}-\text{P}(=\text{O})(\text{O}^-)-\text{O}^- \\ \\ \text{H} \end{array}$
D-eritrolóz	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ =\text{O} \\ \\ \text{CH}_2\text{OH} \end{array}$	
D-ribulóz, D-xilulóz	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ =\text{O} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ =\text{O} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$
D-fruktóz	$\begin{array}{c} \text{CH}_2\text{OH} \\ \\ =\text{O} \\ \\ \\ \\ \text{CH}_2\text{OH} \end{array}$	

Monoszacharidok, diszacharidok


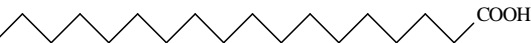

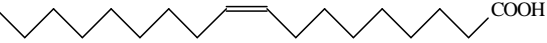
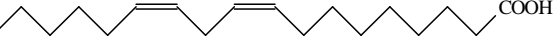
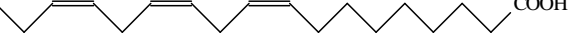

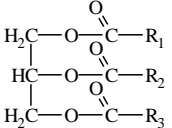
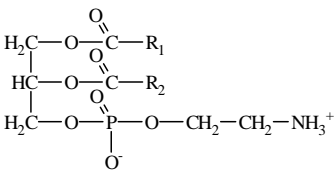
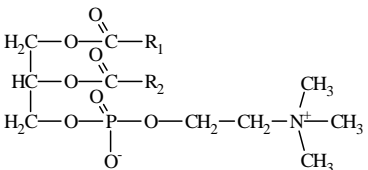
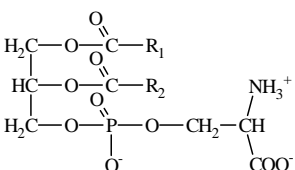
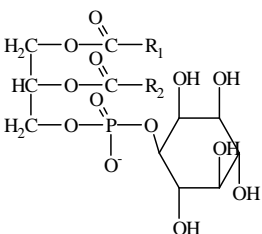
α -D-glükóz, β -D-glükóz		
α -D-galaktóz, β -D-galaktóz		
α -D-fruktóz, β -D-fruktóz		
maltóz		α -D-glükóz 1 – 4 α -D-glükóz (vagy: β -D-glükóz)
szacharóz (nádcukor, répacukor)		α -D-glükóz 1 – 2 β -D-fruktóz
cellobióz		β -D-glükóz 1 – 4 β -D-glükóz
laktóz (tejcukor)		β -D-galaktóz 1 – 4 β -D-glükóz (vagy: α -D-glükóz)

Monoszacharidok származékai

<p>redukció: aldehid csoport redukálása: cukoralkohol: D-glucit</p>	 <p style="text-align: center;"> $\begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array}$ </p>
<p>redukció: láncközi -OH redukálása: pl.: 2-dezoxi-D-ribóz</p>	 <p style="text-align: center;"> $\begin{array}{c} \text{H}-\text{C}=\text{O} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array}$ </p> 
<p>oxidatív reakciók: láncvégi primer alkoholos -OH oxidációja: uronsav: D-glukuronsav (1)</p> <p>aldehid csoport oxidációja: aldonsav = ónsav: D-glukonsav (2)</p>	 <p style="text-align: center;"> $\begin{array}{cc} (1) & (2) \\ \begin{array}{c} \text{COOH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{COOH} \end{array} & \begin{array}{c} \text{COOH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{CH}_2\text{OH} \end{array} \end{array}$ </p>
<p>oxidatív reakciók: aldehid csoport + láncvégi primer alkoholos -OH oxidációja: cukorsav: D-aldársav</p>	 <p style="text-align: center;"> $\begin{array}{c} \text{COOH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{H}-\text{C}-\text{OH} \\ \\ \text{COOH} \end{array}$ </p>
<p>L-askorbinsav (C-vitamin), L-dehidroaskorbinsav</p>	 <p style="text-align: center;"> $\begin{array}{cc} \begin{array}{c} \text{O}=\text{C} \\ \\ \text{HO}-\text{C} \\ \\ \text{HO}-\text{C} \\ \\ \text{H}-\text{C} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{CH}_2\text{OH} \end{array} & \begin{array}{c} \text{O}=\text{C} \\ \\ \text{O}=\text{C} \\ \\ \text{O}=\text{C} \\ \\ \text{H}-\text{C} \\ \\ \text{HO}-\text{C}-\text{H} \\ \\ \text{CH}_2\text{OH} \end{array} \end{array}$ </p>
<p>α-D-glükózamin, N-acetil-D-glükózamin (β)</p>	 <p style="text-align: center;"> $\begin{array}{cc} \begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{O} \\ \\ \text{OH} \\ \\ \text{OH} \\ \\ \text{NH}_2 \end{array} & \begin{array}{c} \text{CH}_2\text{OH} \\ \\ \text{O} \\ \\ \text{OH} \\ \\ \text{OH} \\ \\ \text{NH} \\ \\ \text{C}=\text{O} \\ \\ \text{CH}_3 \end{array} \end{array}$ </p>

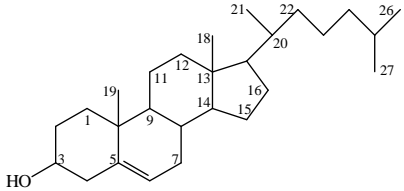
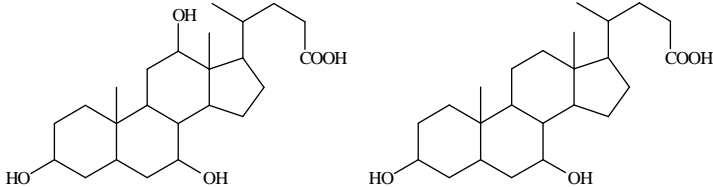
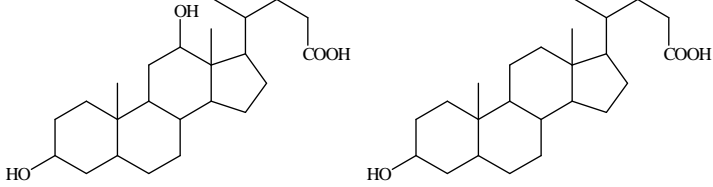
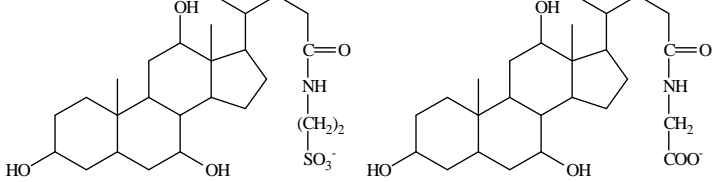
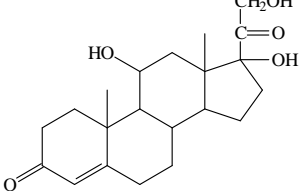
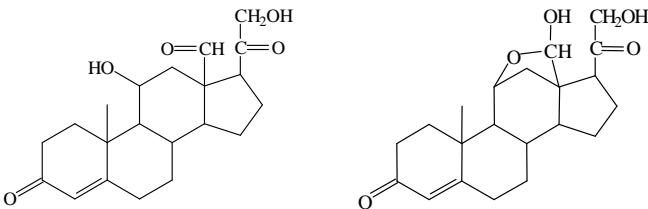
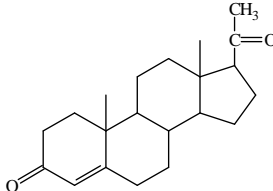
furfurol, hidroximetil-furfurol	
fruktóz-1,6-biszfoszfát	
N-acetil-neuraminsav (sziálsav)	
UDP-glükóz	

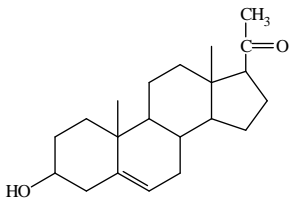
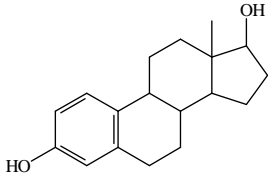
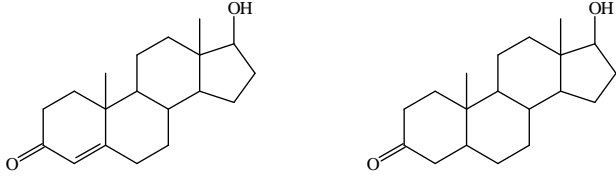
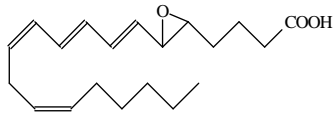
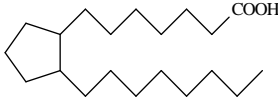
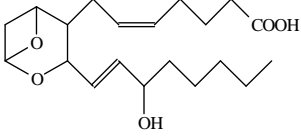
Lipidek I.

palmitinsav	$\text{CH}_3-(\text{CH}_2)_{14}-\text{COOH}$ 
sztearinsav	$\text{CH}_3-(\text{CH}_2)_{16}-\text{COOH}$ 
palmitinolajsav	9-C _{16:1} 
olajsav	9-C _{18:1} 
linolsav	9,12-C _{18:2} 
linolénsav	9,12,15-C _{18:3} 
arachidonsav	5,8,11,14-C _{20:4} 
triglicerid	
foszfatidil-etanolamin (kefalin)	
foszfatidil-kolin (lecitin)	
foszfatidil-szerin	
foszfatidil-inozitol	

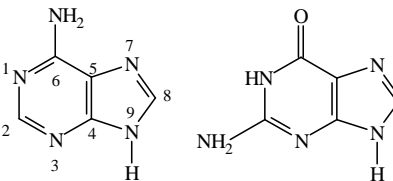
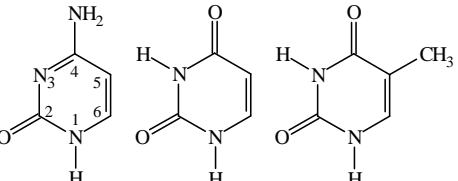
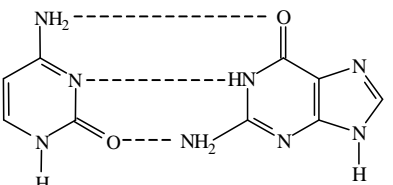
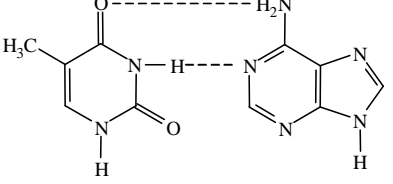
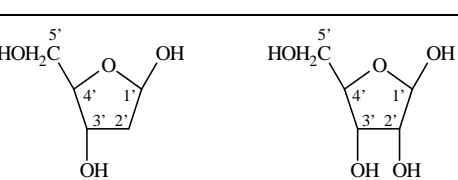
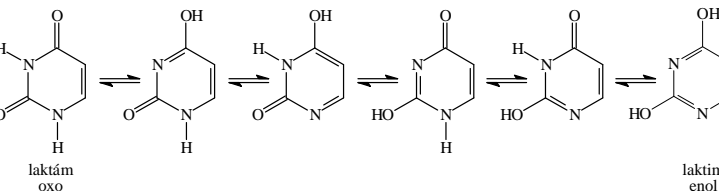
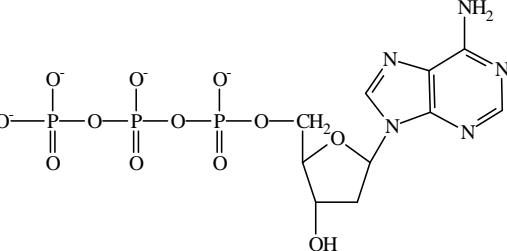
difoszfatidil-glicerin (kardiolipin)		
plazmanil-etanolamin		
plazmenil-etanolamin		
trombocita aktiváló faktor (PAF)		
szfingozin		
ceramid		
szfingomielin		
cerebrozid (= galaktocerebrozid / β -galaktozil-ceramid) glukocerebrozid (= β -glukozil-ceramid) gangliozid		<p>külön megjelölés nélkül galaktóz; ha a galaktóz helyett glükóz van, akkor glukocerebrozid; gangliozid: a szfingozinhoz (szílsav tartalmú) oligoszacharid lánc kapcsolódik; (a Gal leegyszerűsítve van megfordítva)</p>

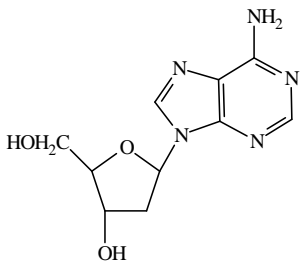
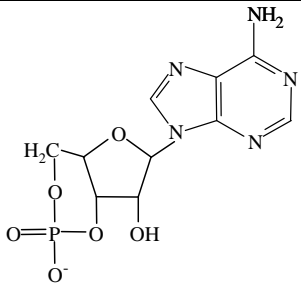
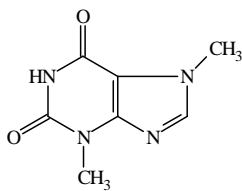
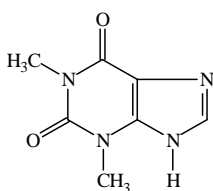
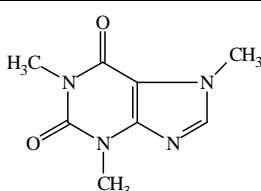
Lipidek II. (szterán vázas vegyületek)

koleszterin	
kólsav, kenodezoxi-kólsav (primer epesavak)	
dezoxi-kólsav, litokólsav (szekunder epesavak)	
taurokólsav, glikokólsav (konjugált epesavak – példák)	
kortizol	
aldoszteron, aldoszteron intramolekuláris félacetál formája	
progeszteron	

pregnenolon	
ösztradiol	
tesztoszteron, 5 α -dihidroteszto- steron	
leukotrién A ₄	
prosztaénsav	
tromboxán A ₂ (TxA ₂)	
izoprén	$\begin{array}{c} \text{CH}_3 \\ \\ \text{CH}_2=\text{C}-\text{CH}=\text{CH}_2 \end{array}$

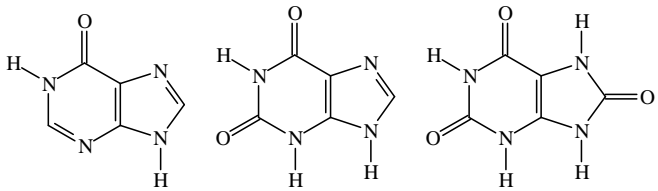
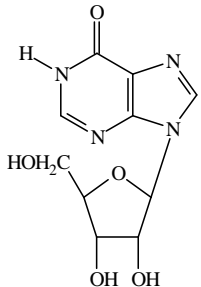
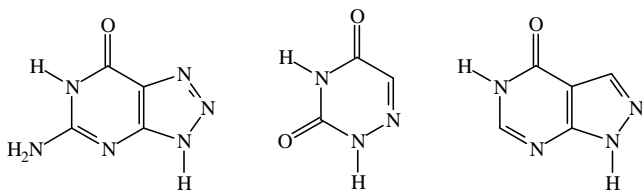
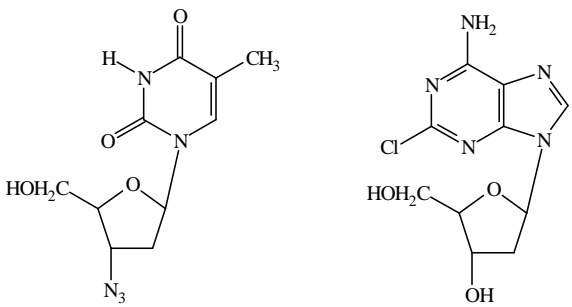
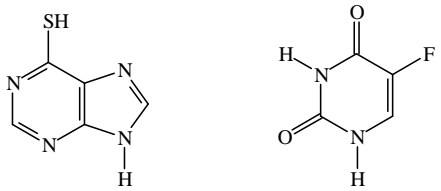
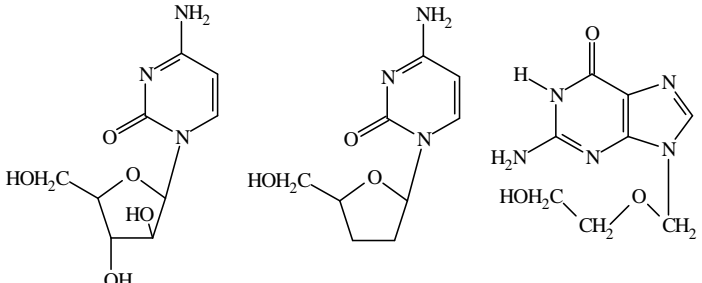
Nukleinsavak építőkövei

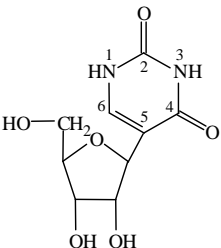
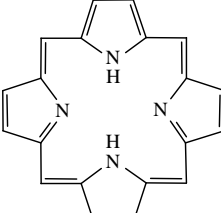
adenin, guanin	
citozin, uracil, timin	
citozin–guanin bázispár (3 H-kötés)	
timin–adenin bázispár (2 H-kötés)	
2'-dezoxi-β-D-ribóz, β-D-ribóz	
az uracil (példa) tautomer formái	
dezoxi-adenozin-trifoszfát (dATP) nukleotid = 1–3 foszfát + ribóz / dezoxiribóz + bázis	

dezoxi-adenozin nukleozid = ribóz / dezoxiribóz + bázis	
cAMP	
teobromin	
teofillin	
koffein	

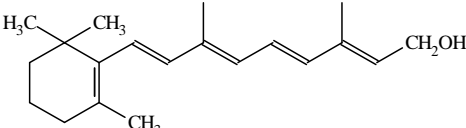
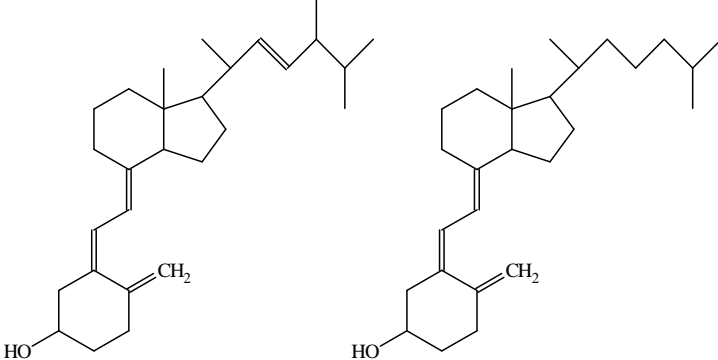
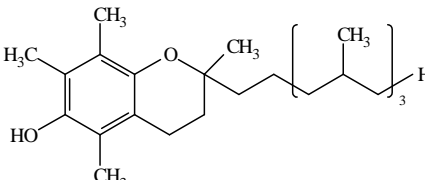
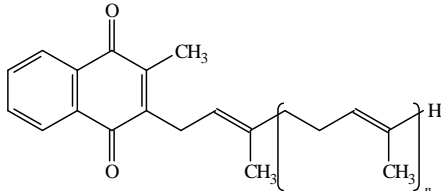
Bázis	DNS		RNS	
	Nukleozid	Nukleotid	Nukleozid	Nukleotid
adenin	dezoxi-adenozin	dAMP, dADP, dATP	adenozin	AMP, ADP, ATP
guanin	dezoxi-guanozin	dGMP, dGDP, dGTP	guanozin	GMP, GDP, GTP
citozin	dezoxi-citidin	dCMP, dCDP, dCTP	citidin	CMP, CDP, CTP
timin	timidin (!)	dTMP, dTDP, dTTP	ribo-timidin (tRNS)	
uracil			uridin	UMP, UDP, UTP

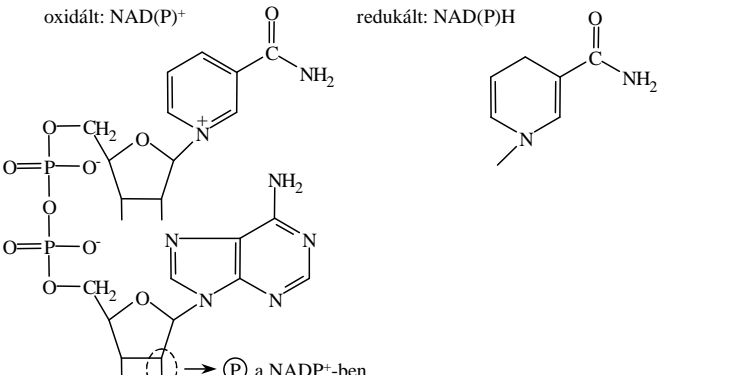
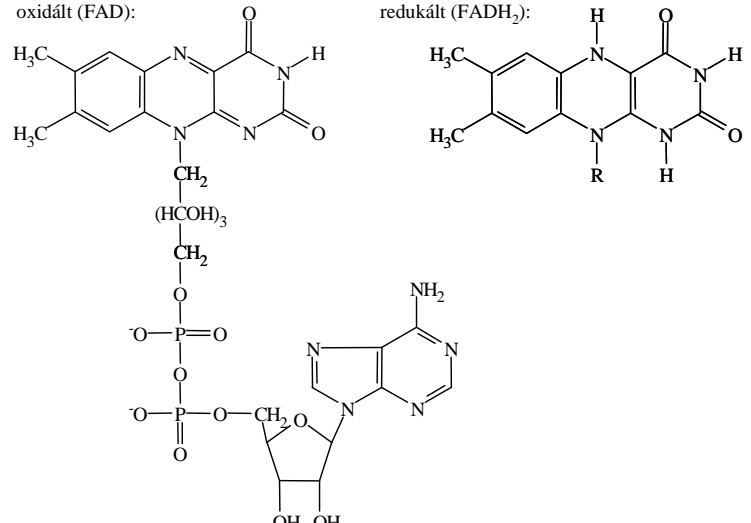
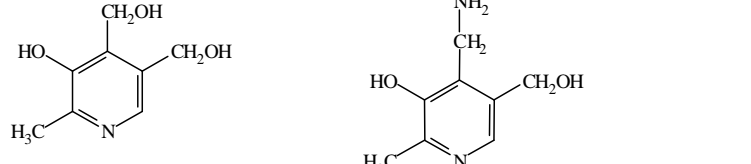
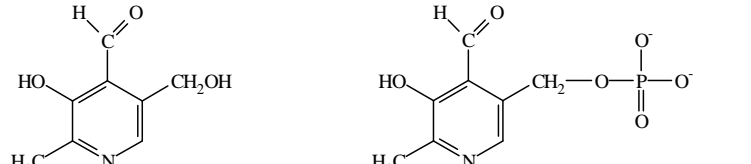
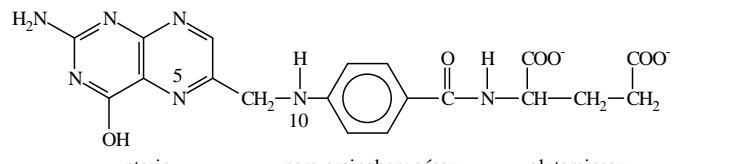
Származékok

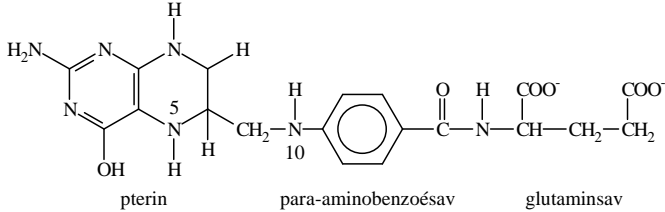
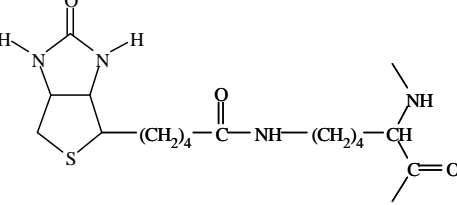
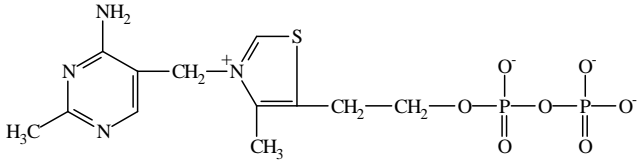
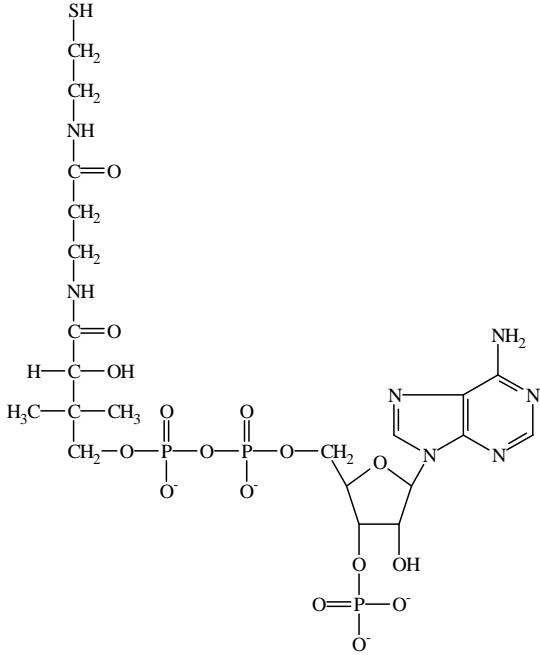
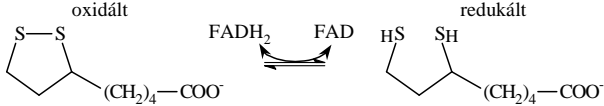
<p>hipoxantin, xantin, húgysav</p>	 <p>The image shows three purine derivatives: hypoxanthine (left), xanthine (middle), and uric acid (right). Each structure consists of a fused pyrimidine-imidazole ring system with various carbonyl and hydrogen substituents.</p>
<p>inozin (hipoxantin = bázis inozin = nukleozid, azaz a hipoxantin bázist tartalmazó nukleozid neve: inozin)</p>	 <p>The image shows the structure of inosine, which is a nucleoside consisting of a hypoxanthine base attached to a ribose sugar at the 9-glycosidic bond. The ribose sugar has hydroxyl groups at the 2' and 3' positions.</p>
<p>8-azaguanin, 6-azauracil, allopurinol</p>	 <p>The image shows three purine derivatives: 8-azaguanine (left), 6-azauracil (middle), and allopurinol (right). 8-azaguanine has an amino group at the 2-position and a hydrogen at the 8-position. 6-azauracil has a hydrogen at the 6-position. Allopurinol has a hydrogen at the 8-position.</p>
<p>AZT (3'-azido-2',3'-didezoxi-timidin), 2-Cl-dezoxiadenozin</p>	 <p>The image shows two nucleosides: AZT (left) and 2-chloro-2'-deoxyadenosine (right). AZT has a methyl group at the 5-position, an azido group at the 3-position, and a hydrogen at the 2-position. 2-chloro-2'-deoxyadenosine has an amino group at the 6-position, a chlorine atom at the 2-position, and a hydroxyl group at the 3'-position.</p>
<p>6-merkapropurin, 5-F-uracil</p>	 <p>The image shows two pyrimidine derivatives: 6-mercaptopurine (left) with a thiol group at the 6-position, and 5-fluorouracil (right) with a fluorine atom at the 5-position.</p>
<p>ara-C (arabinozil-citozin), ddC (2'-3'-didezoxi-citidin), Acyclovir (9-(2-hidroxietoximetil)-guanin)</p>	 <p>The image shows three nucleosides: ara-C (left) with a thiol group at the 4-position and hydroxyl groups at the 2' and 3' positions; ddC (middle) with an amino group at the 4-position and hydroxyl groups at the 2' and 3' positions; and acyclovir (right) with an amino group at the 6-position and a 2-hydroxyethoxymethyl group at the 9-position.</p>

pszeudouridin	
porfirin váz	

Vitaminok, koenzimek

A-vitamin	
D ₂ -vitamin (ergokalicferol), D ₃ -vitamin (kolekalciferol)	
E-vitamin (α-tokoferol)	
K-vitamin	

<p>NAD⁺, NADH, NADP⁺, NADPH (niacin, nikotinsav)</p>	<p>oxidált: NAD(P)⁺ redukált: NAD(P)H</p> 
<p>FAD, FADH₂ (A redukált formában a molekula – változatlan – ribitol és ADP részét „R” helyettesíti.)</p>	<p>oxidált (FAD): redukált (FADH₂):</p> 
<p>piridoxin, piridoxamin</p>	
<p>piridoxál, piridoxál-foszfát</p>	
<p>fólsav</p>	 <p style="text-align: center;"> pterin para-aminobenzoésav glutaminsav </p>

tetrahidrofólsav	 <p style="text-align: center;">pterin para-aminobenzoésav glutaminsav</p>
biotin (az enzim fehérje Lys oldal-láncával)	
tiamin-pirofoszfát	
koenzim-A	
liponsav	
koenzim Q: ubikinon (oxidált), ubikinol (redu- kált) (Az ubikinolban a 10 izoprén egységet az „R” jelöli.)	