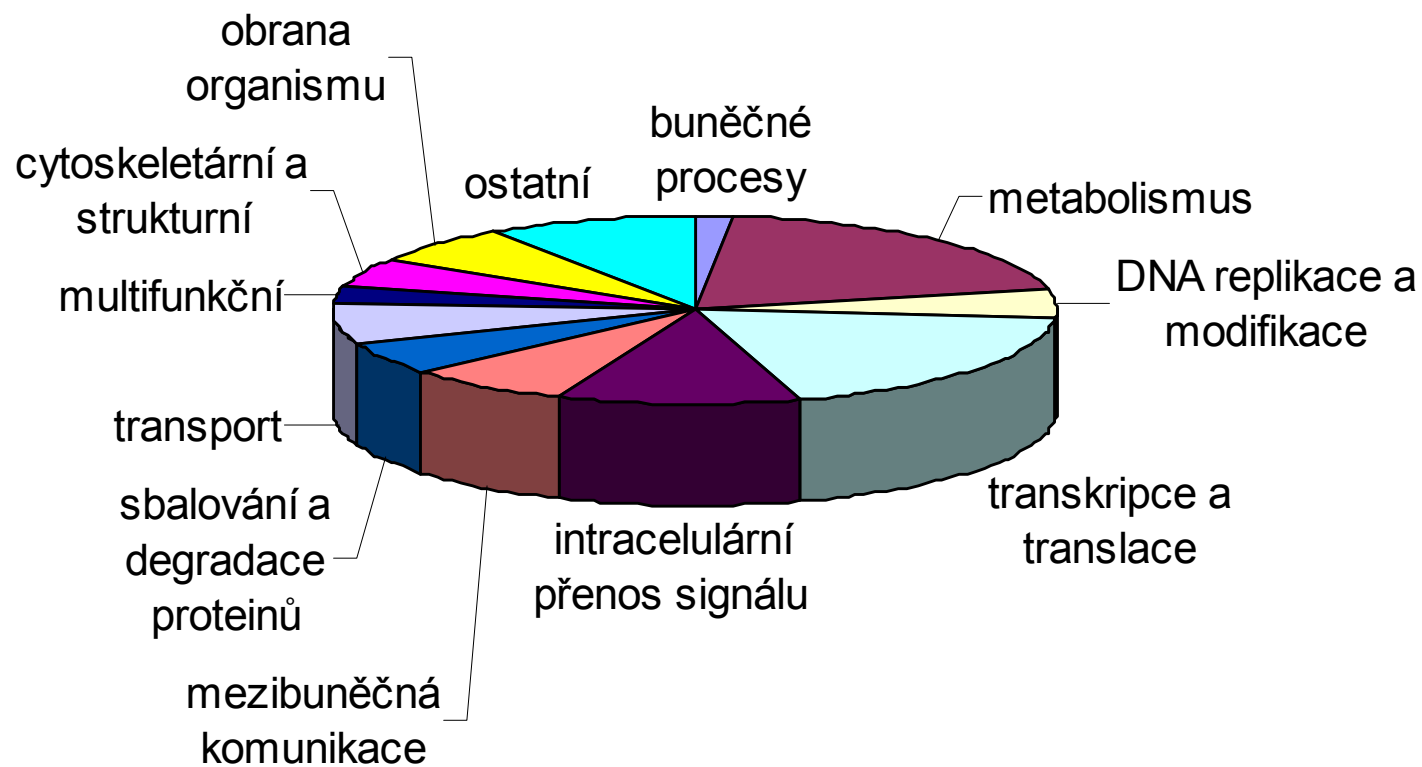
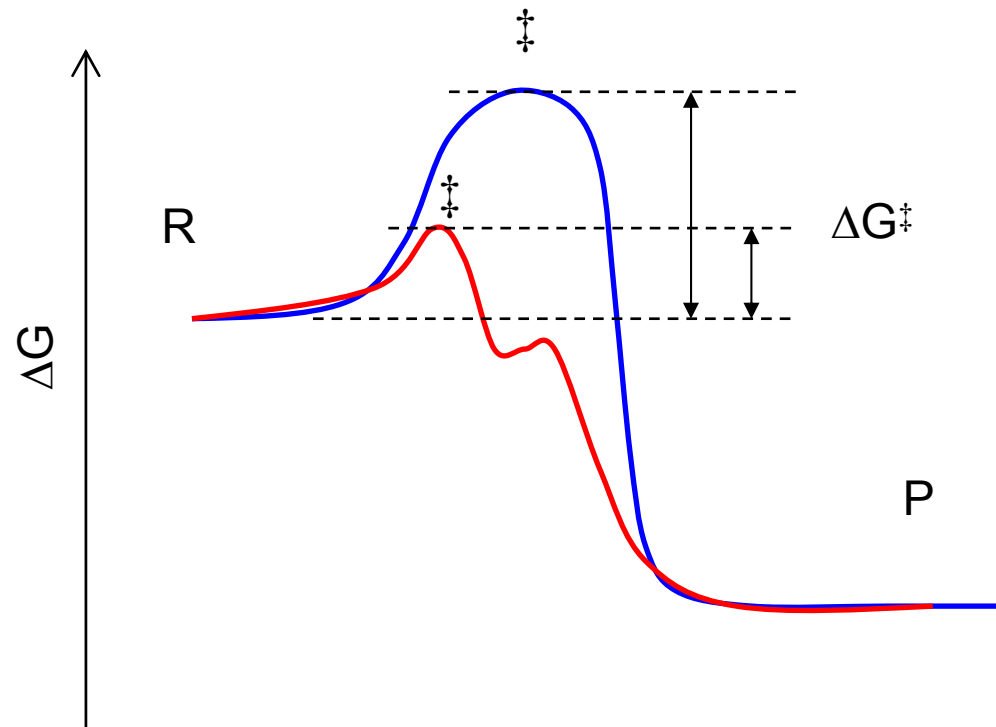


Lidský genom

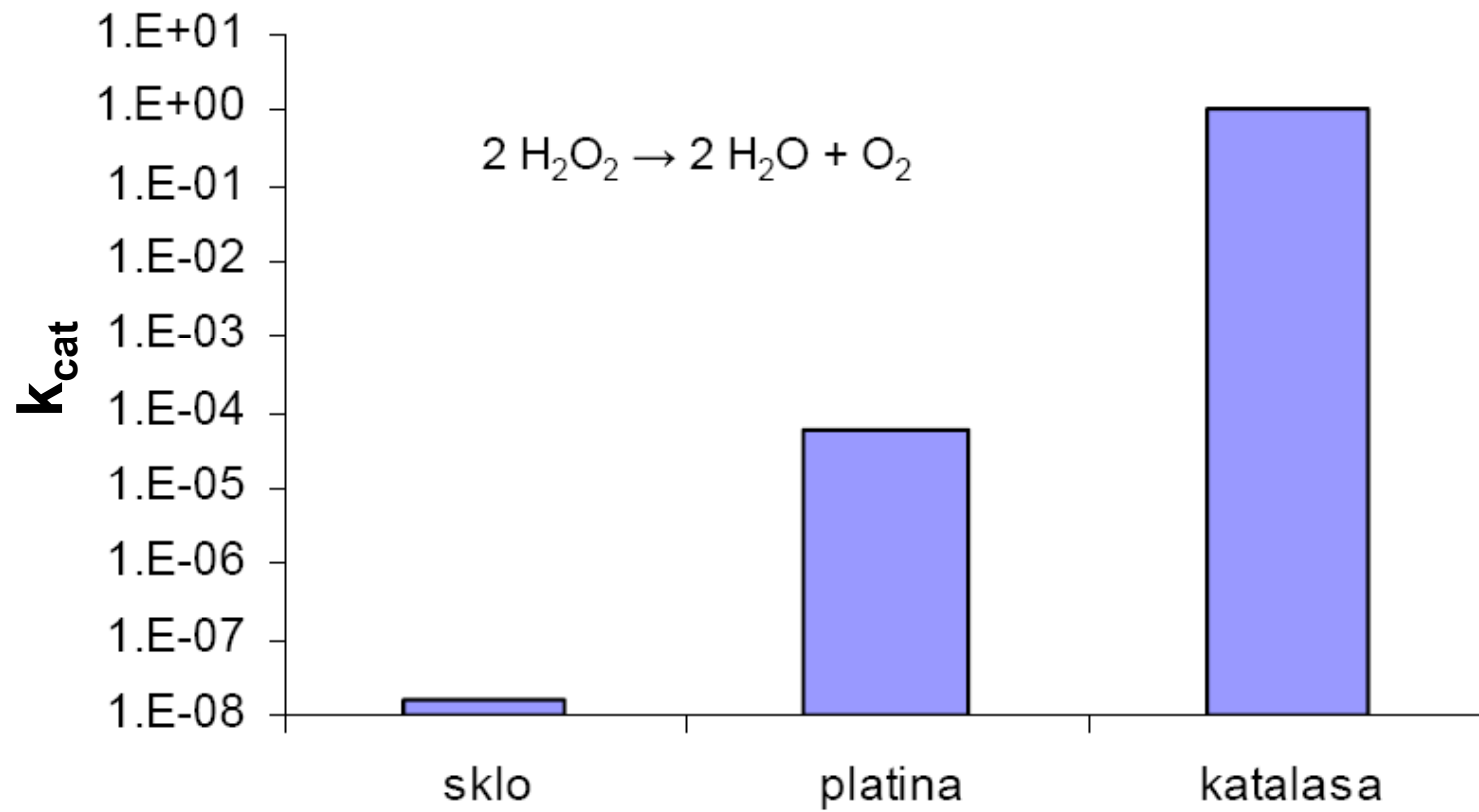


International Human Genome Sequencing Consortium. *Nature* **409**, 860 - 921, 2001.

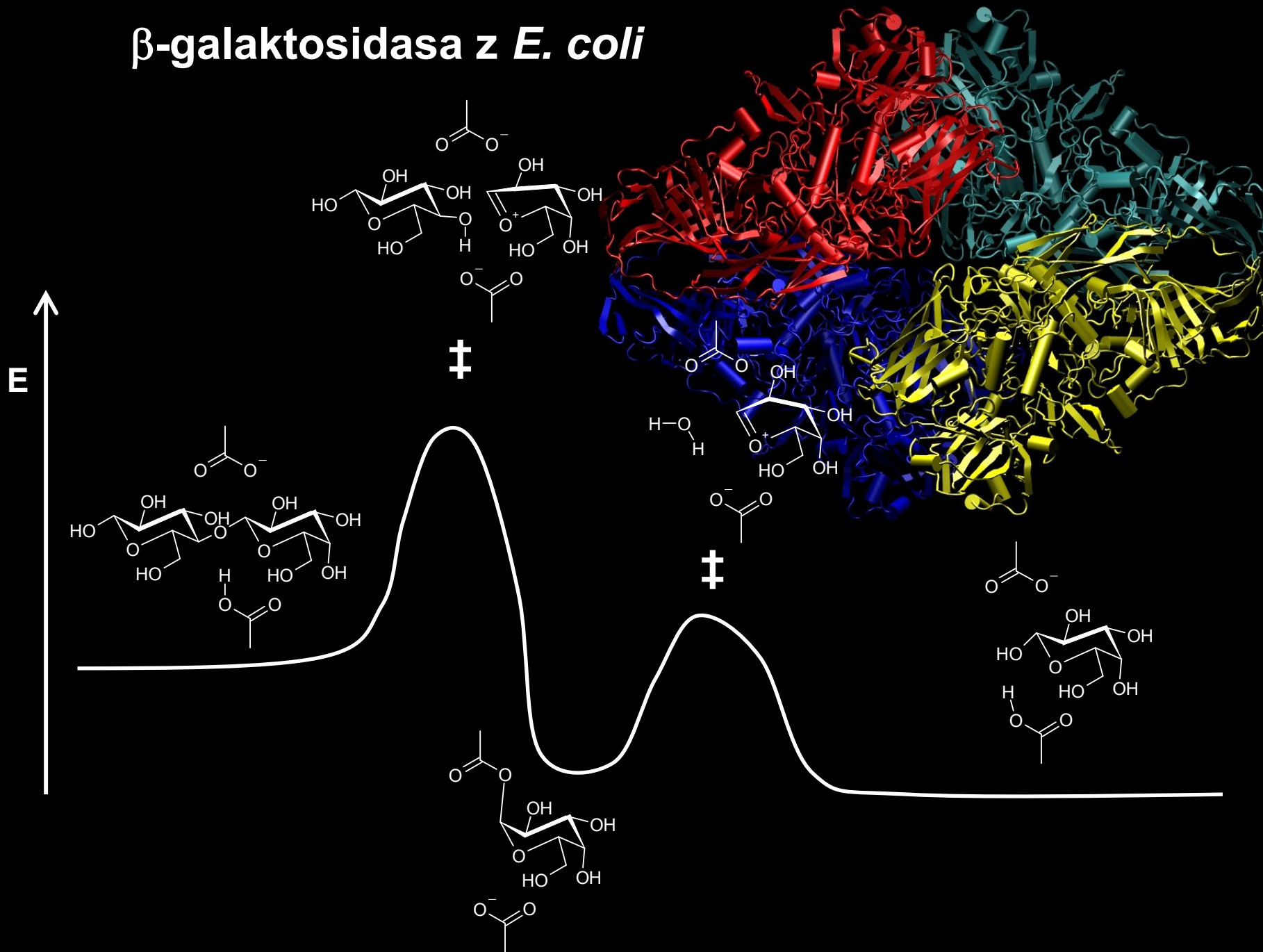
Mechanismy enzymových reakcí



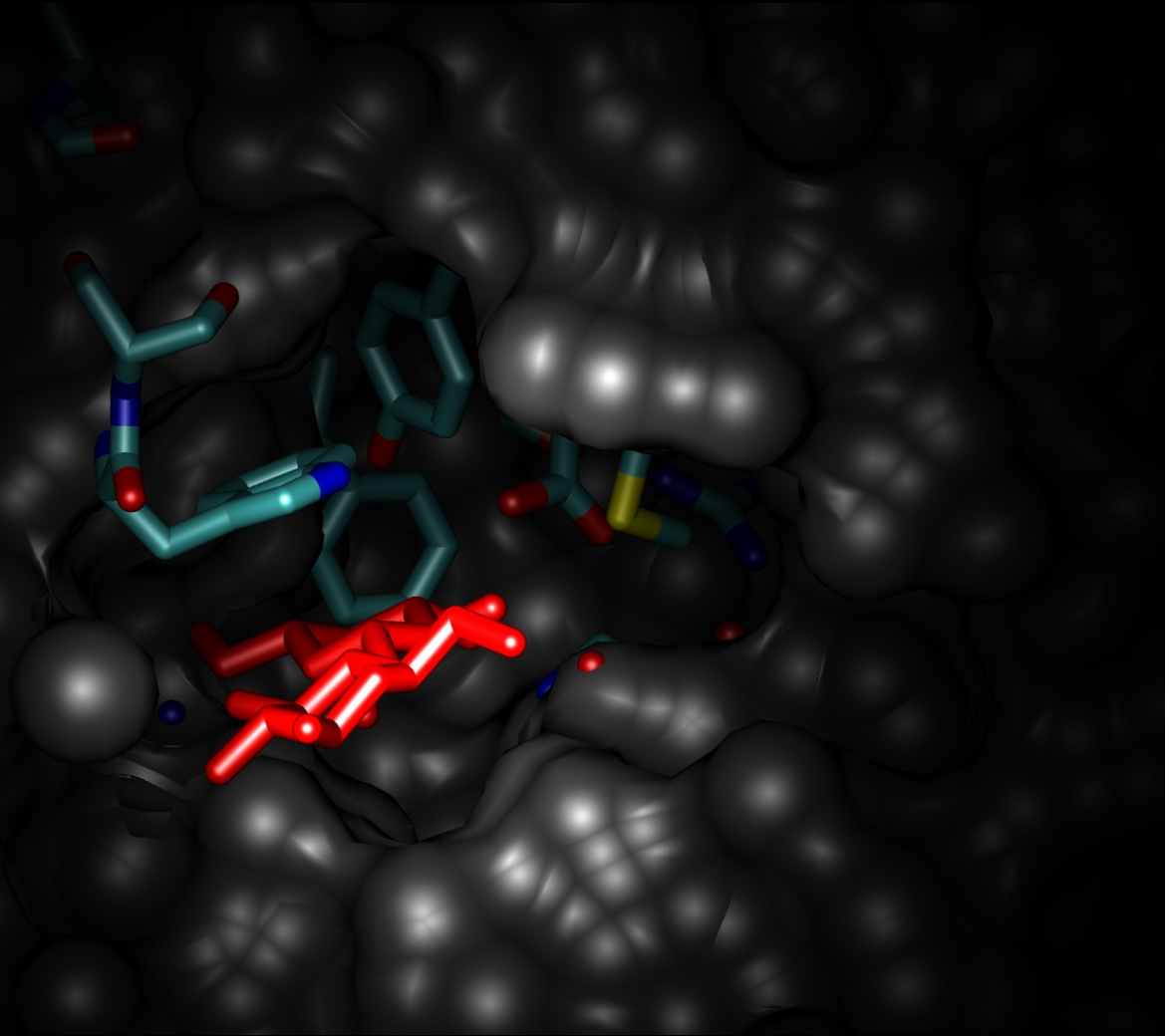
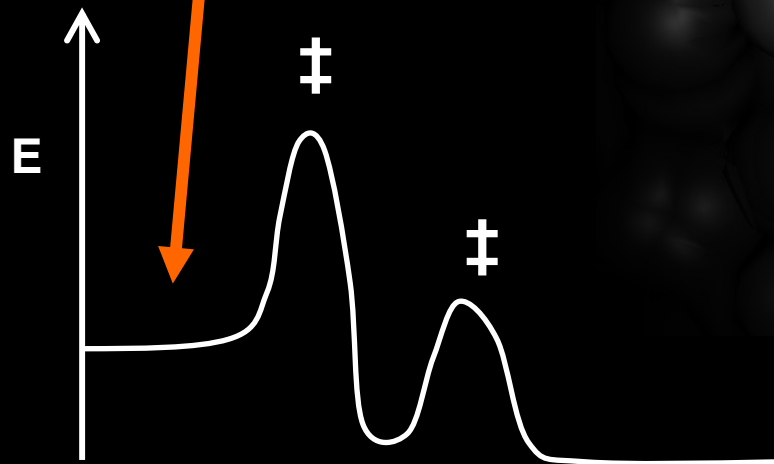
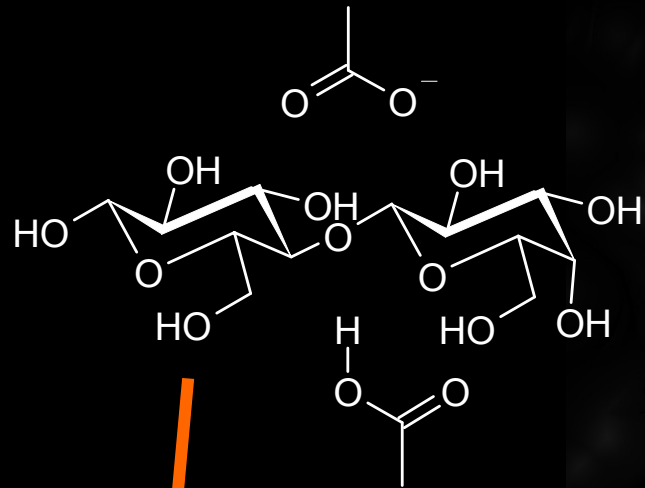
Katalysa



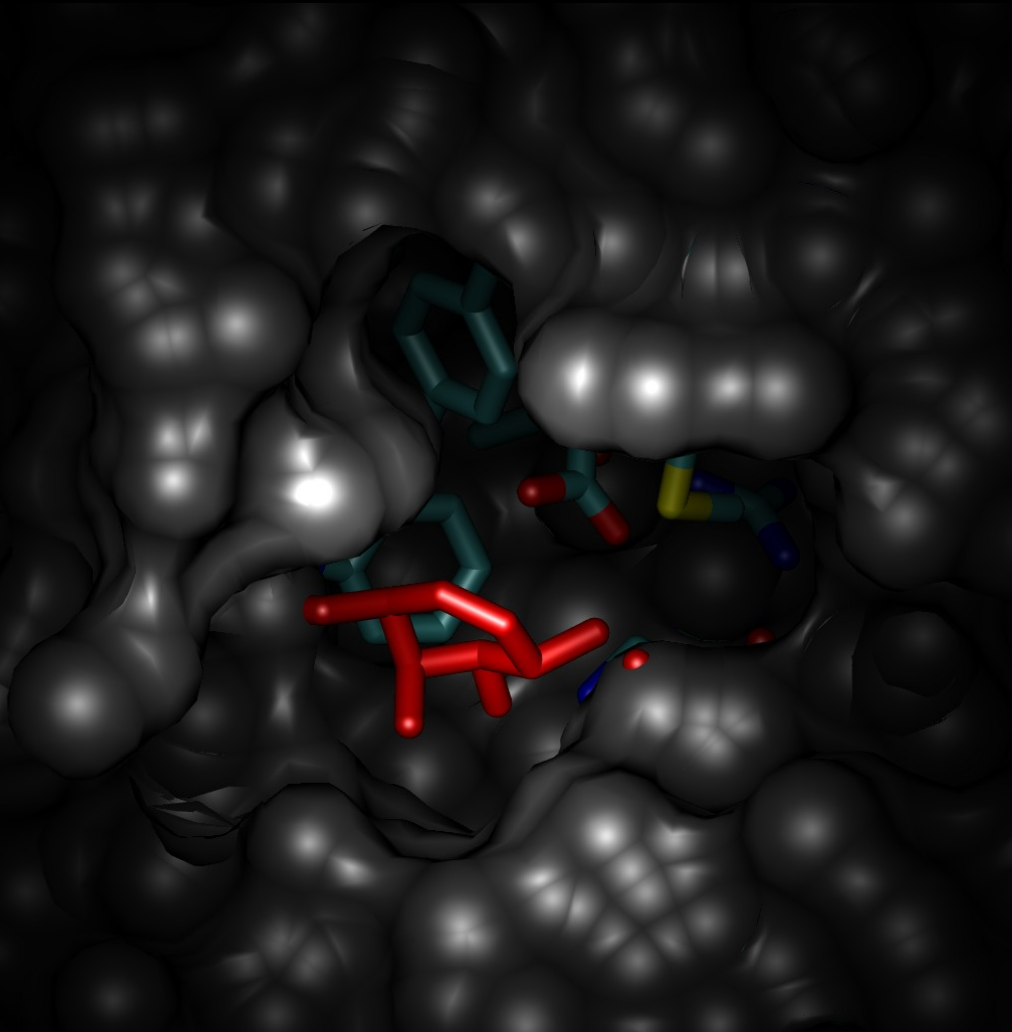
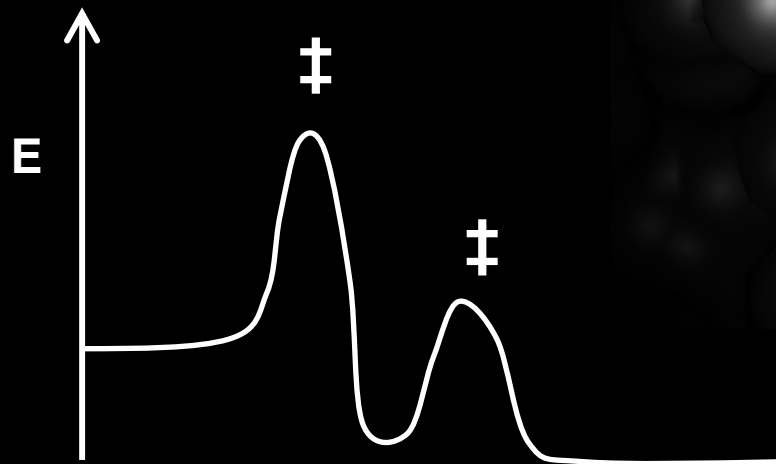
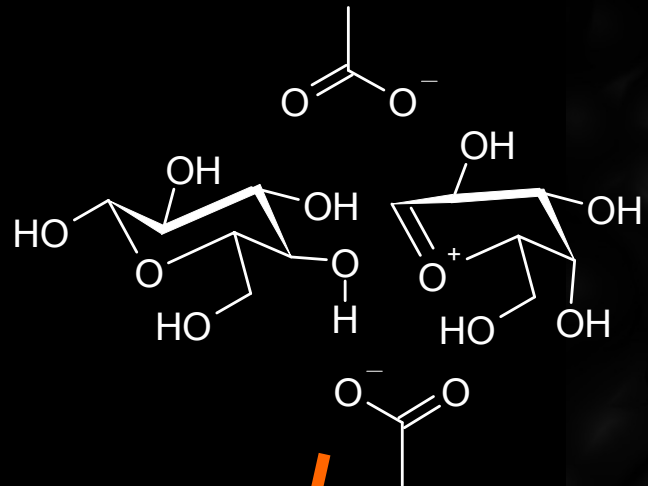
β -galaktosidasa z *E. coli*



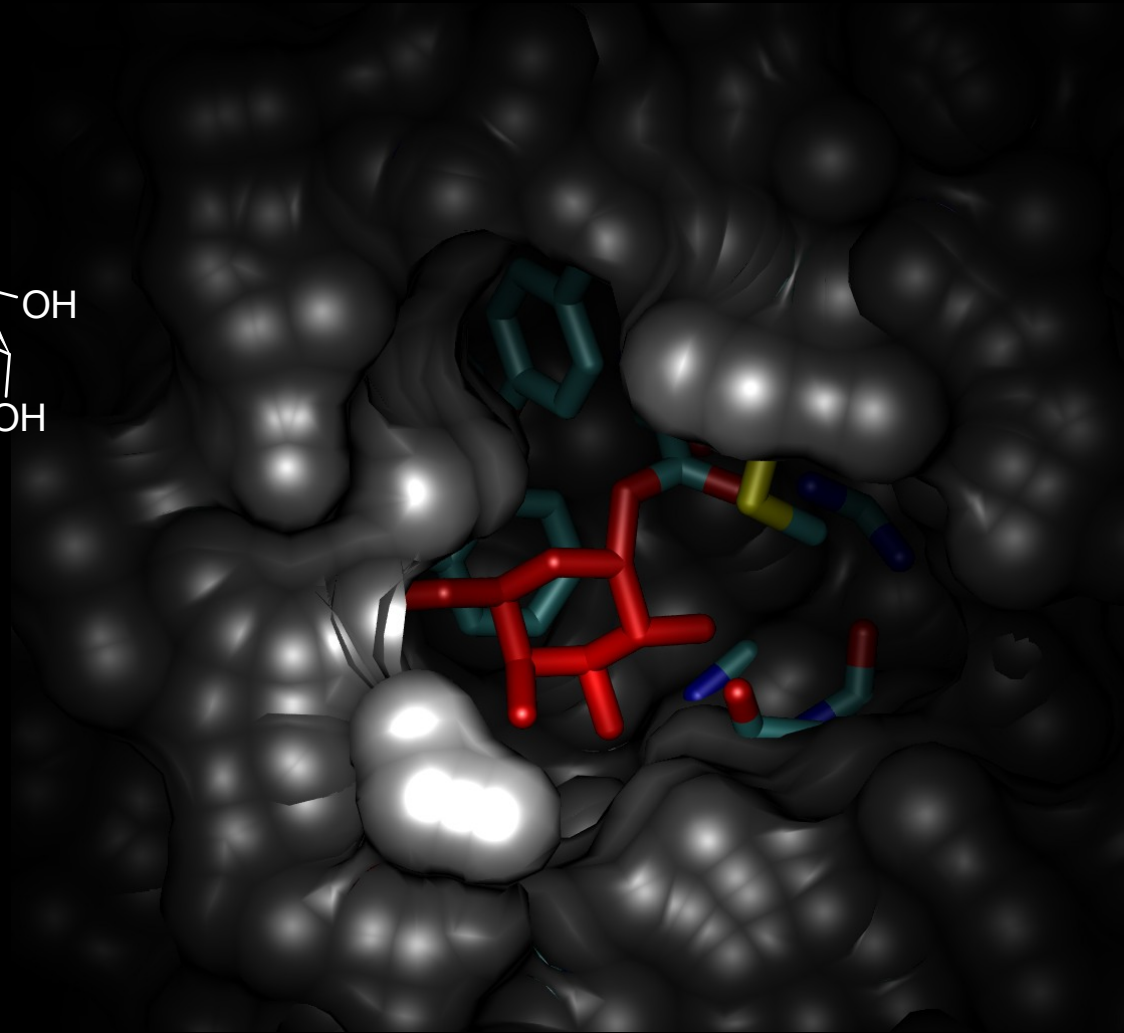
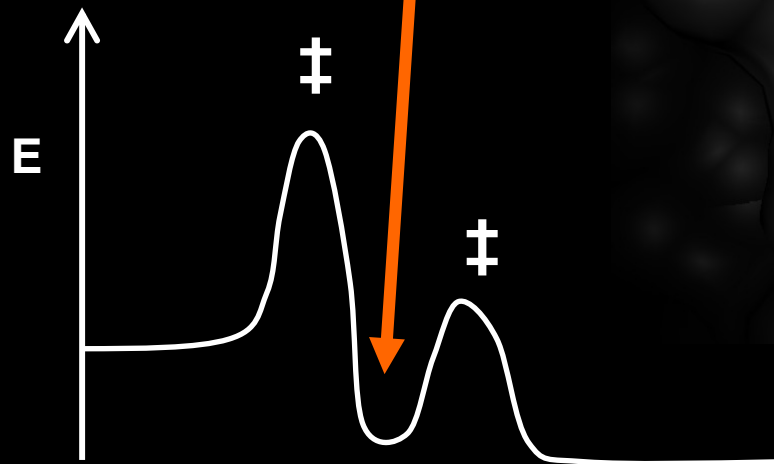
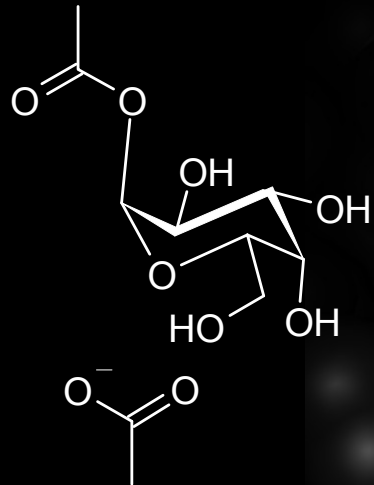
β -galaktosidasa z *E. coli*



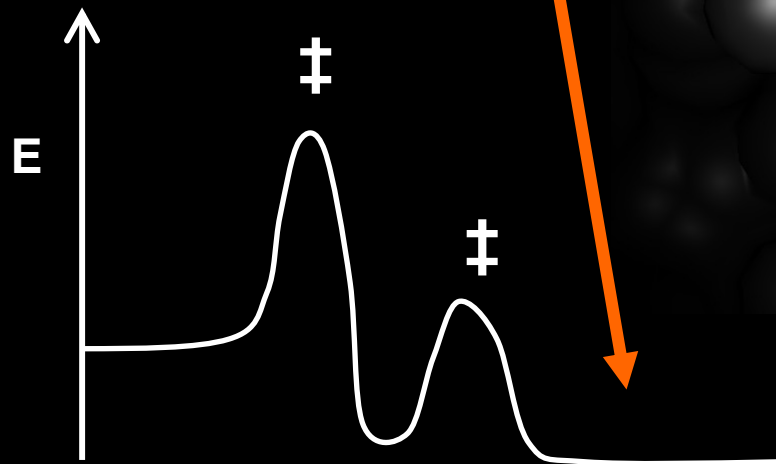
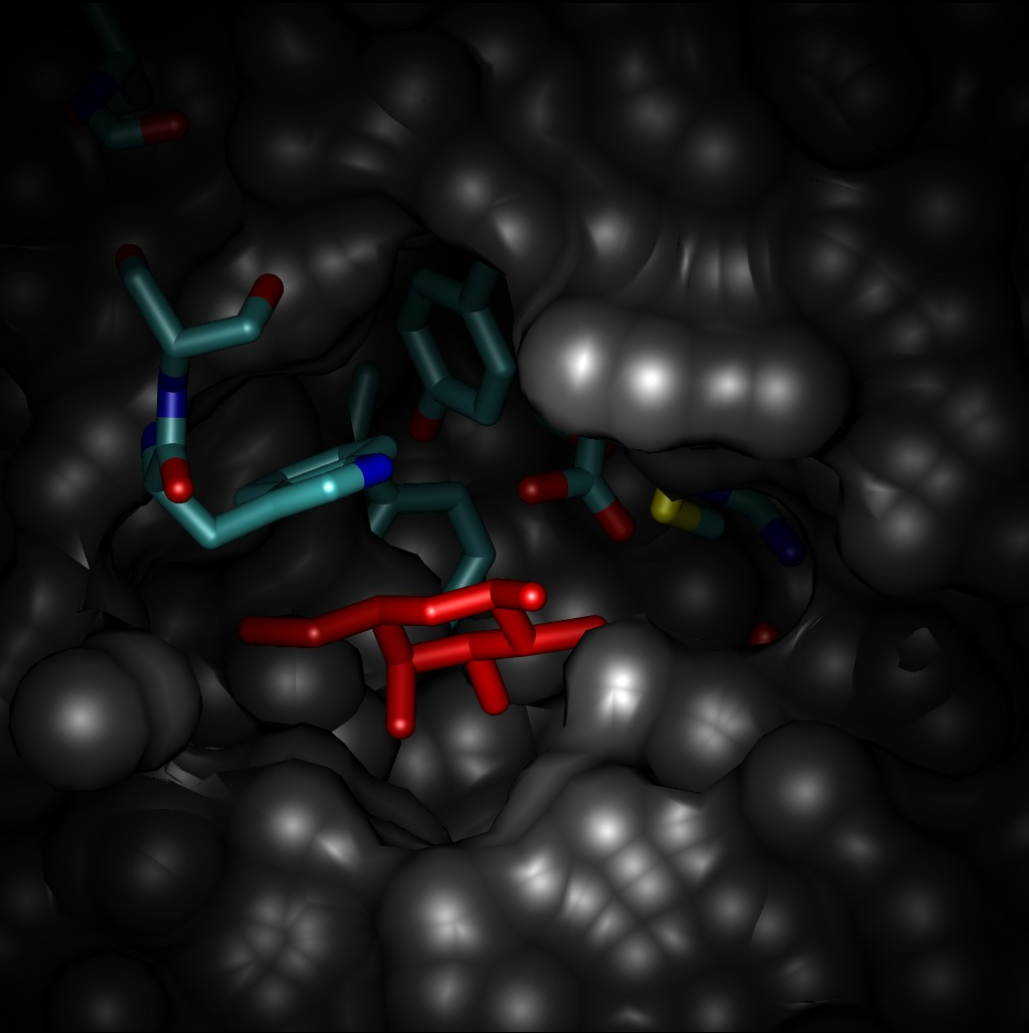
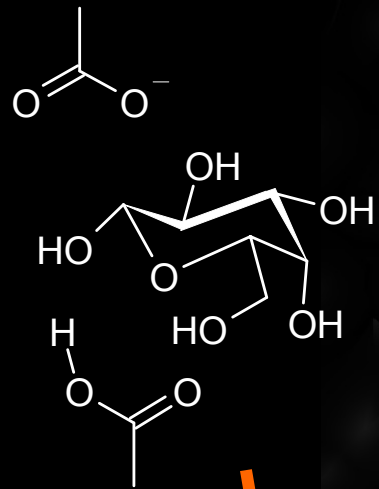
β -galaktosidasa z *E. coli*

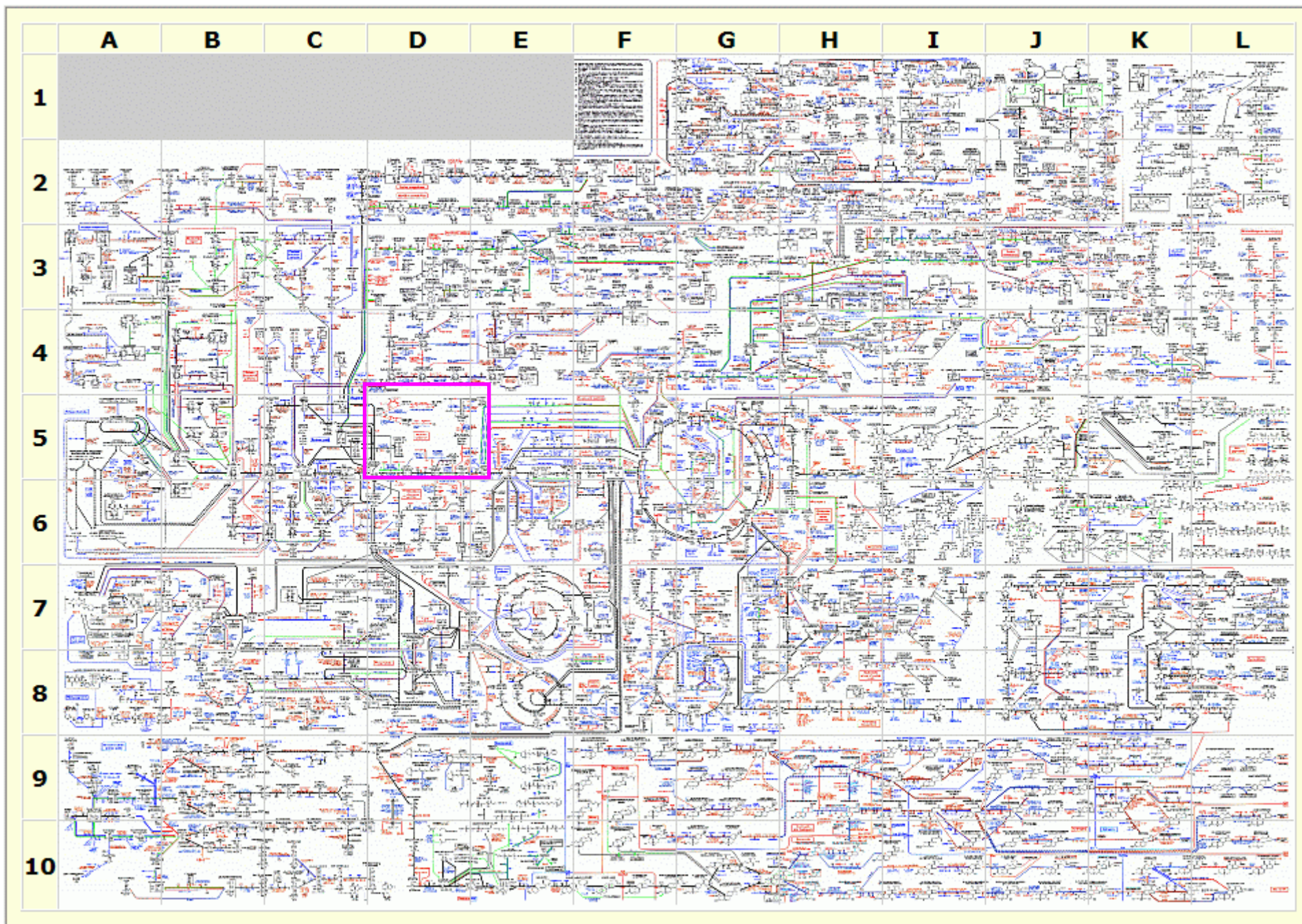


β -galaktosidasa z *E. coli*

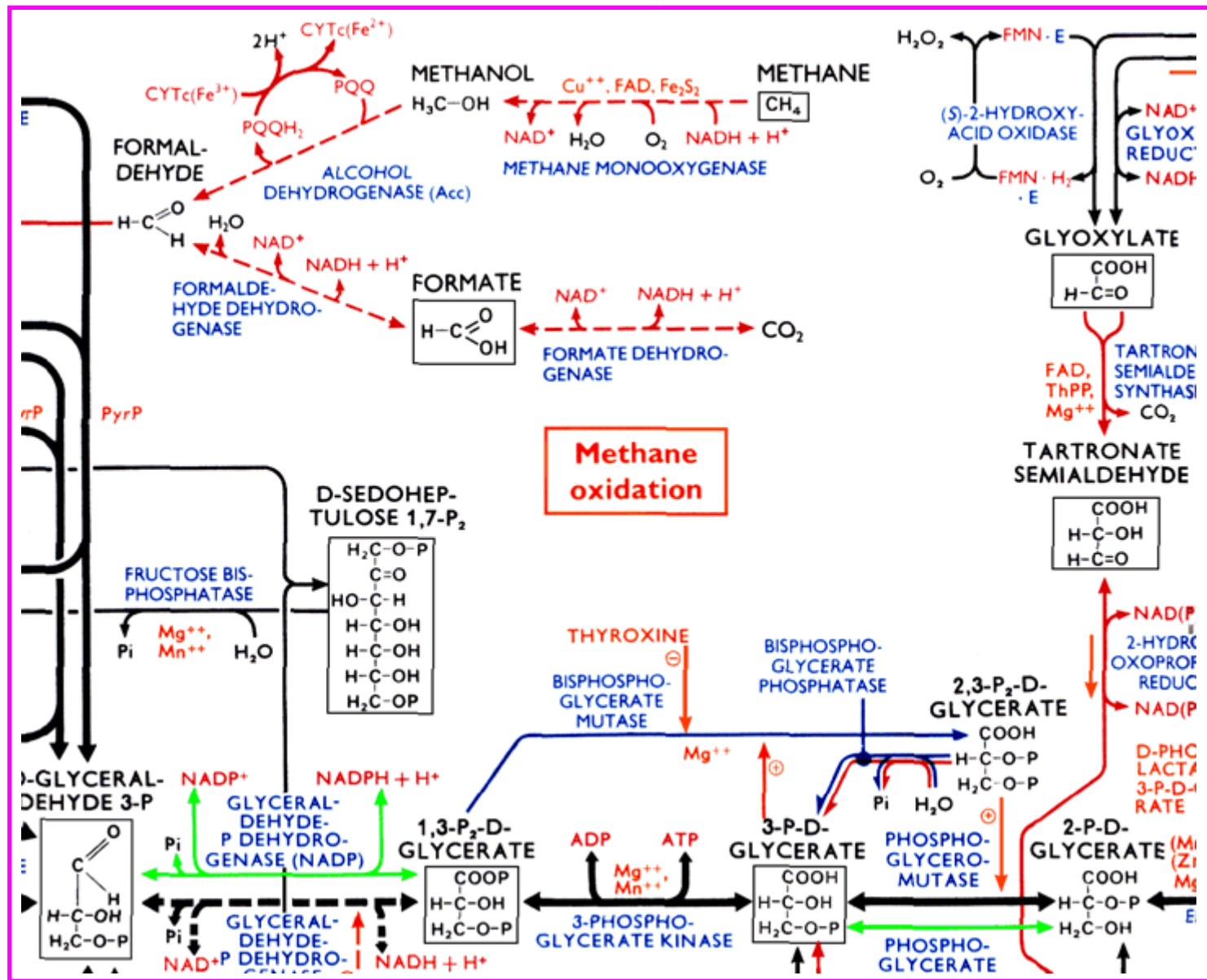


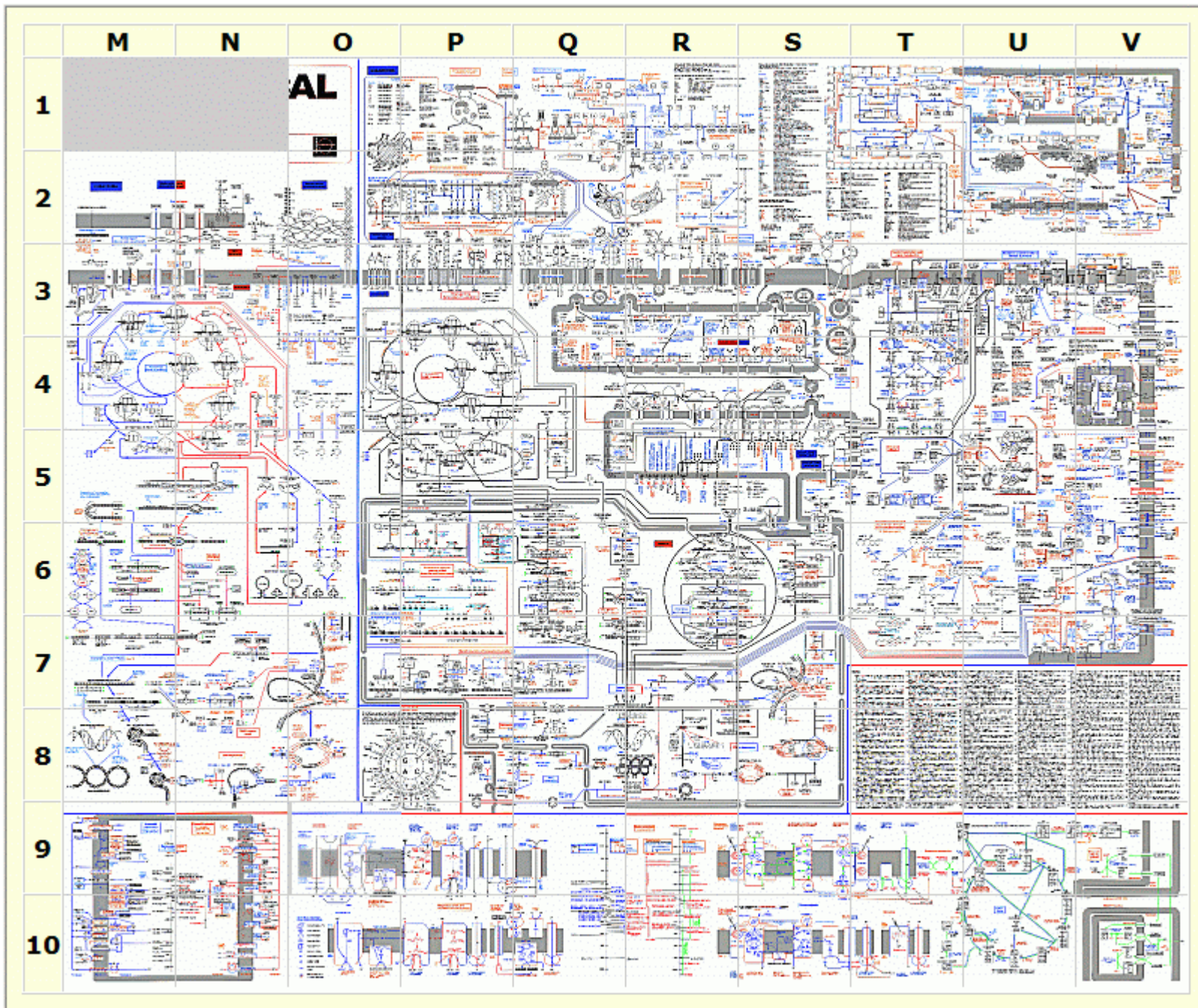
β -galaktosidasa z *E. coli*





<http://www.expasy.org/tools/pathways/>

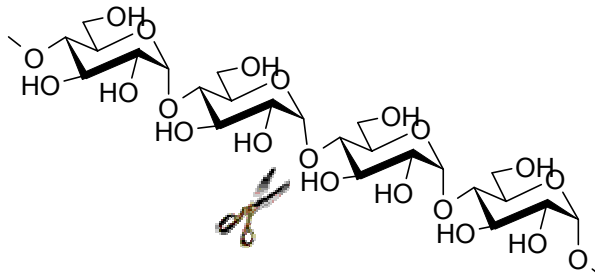




<http://www.expasy.org/tools/pathways/>

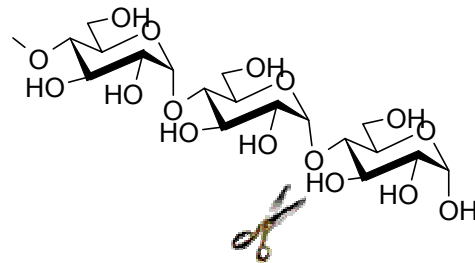
Biotechnologie: High-fructose corn syrup

(HFCS, cca 12 milionů tun/rok)



α -Amylaza (EC.3.2.1.1, *Bacillus*)

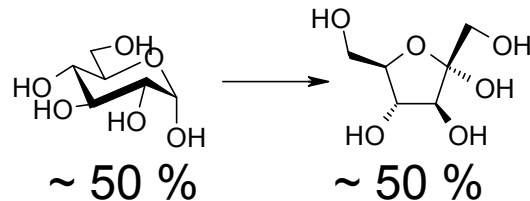
cca 4000 tun/rok



Glukoamylasa

(glukan 1,4- α -glukosidasa,
EC.3.2.1.3, *Aspergillus*)

cca 4000 tun/rok



Glukosaisomerasa

(xylosa isomerasa,
EC.5.3.1.5, *Bacillus*)

imobilizovaný enzym

Biotechnologie:

> 100 tun/rok

- α -amylasa, β -amylasa – výroba piva, kvasné procesy
- α -amylasa, glukooamylasa – HFCS
- proteasy – prací prášky

10 – 100 tun/rok

- β -glukanasa – výroba piva, kvasné procesy
- papain – zpracování masa
- glukosa isomerasa – HFCS
- α -amylasa – pekařství
- proteasy – výroba sýrů
- pektinasy – výroba nápojů

1 – 10 tun/rok

- syřidlo, β -amylasa, proteasy
- celulasa – zpracování odpadu, textilní průmysl

< 1 tun/rok

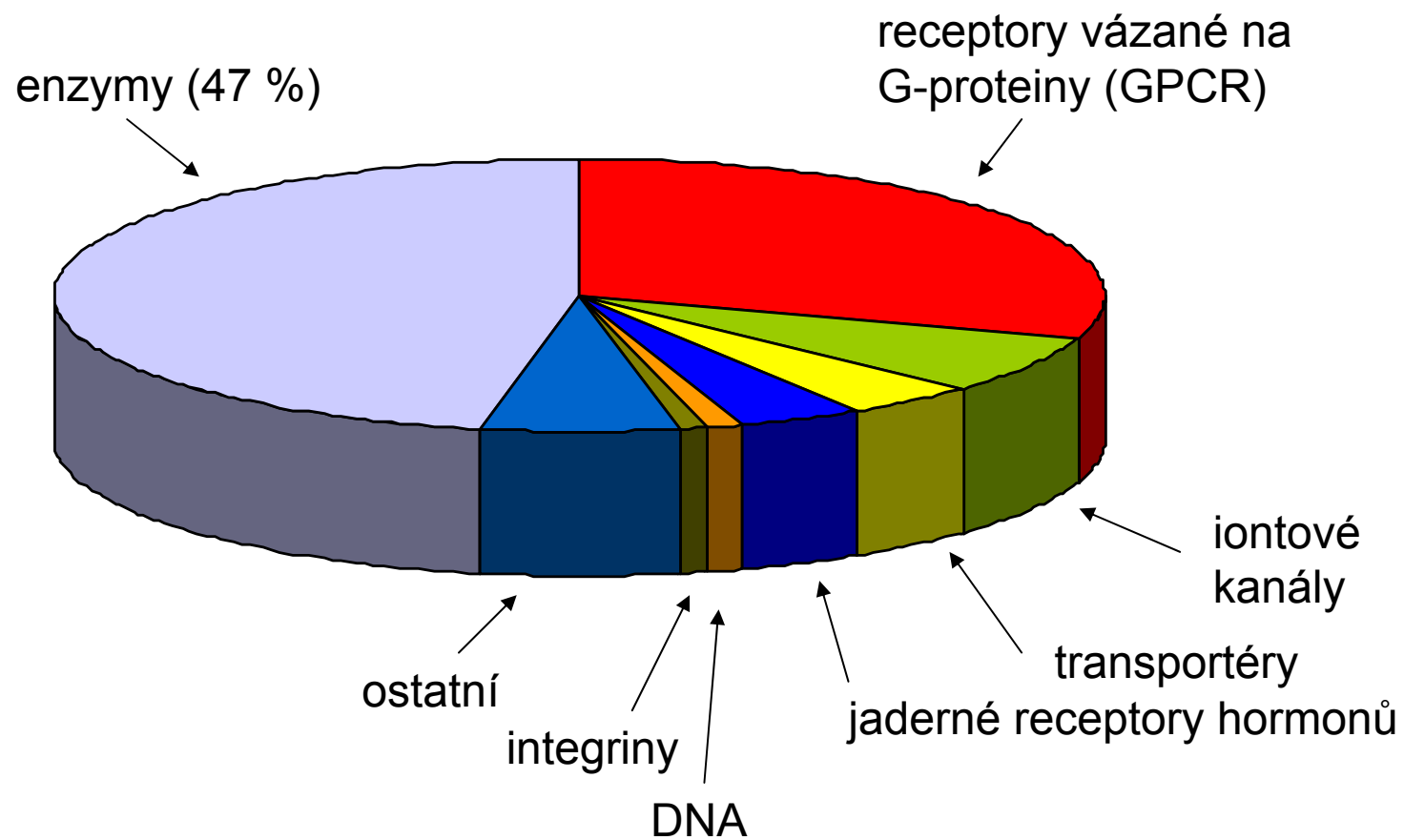
- katalasa, chymotrypsin, lipasa, trypsin, β -lactamase, pullulanasa, celulasa, glukosa oxidasa, β -galaktosidasa a další

Molekulární biologie:

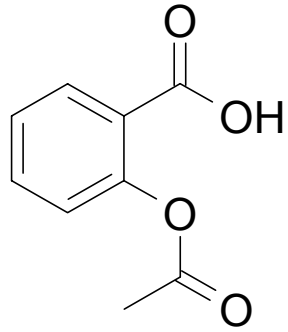


Lékařství:

cíle léčiv
(drug targets)



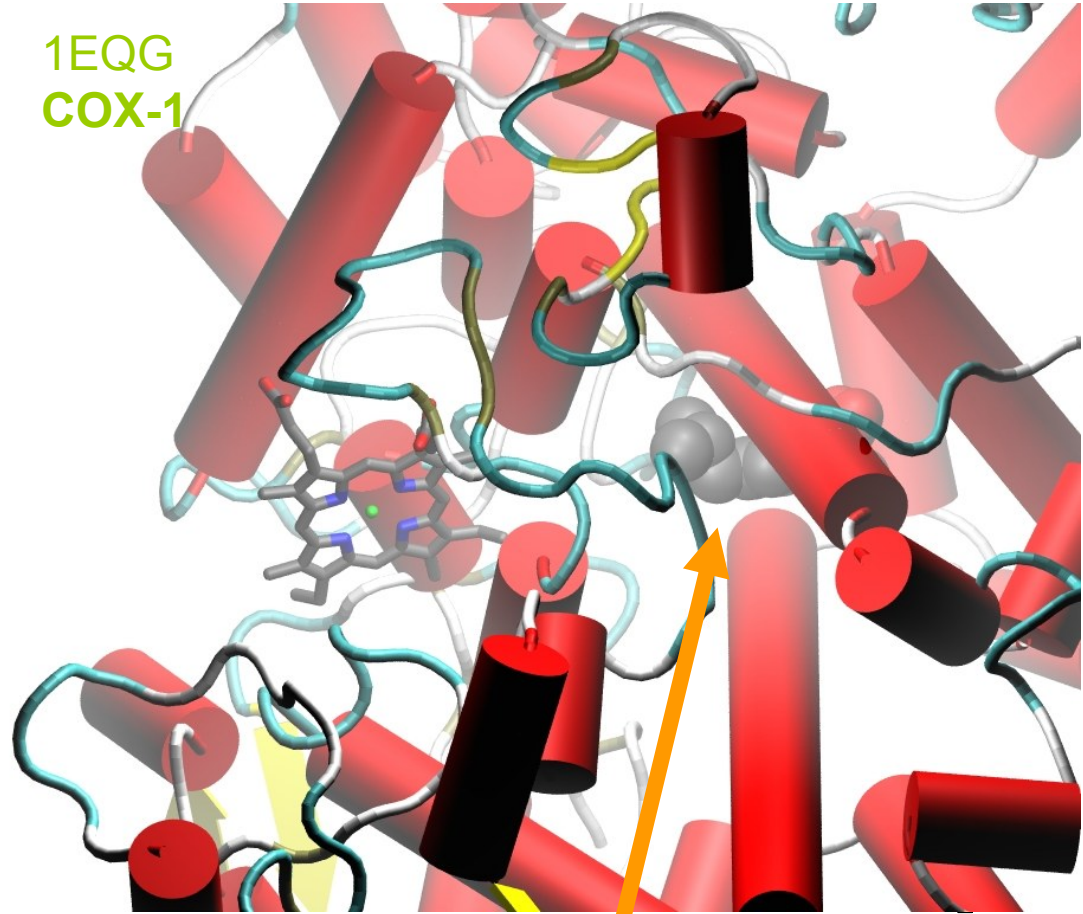
Cyklooxygenasa



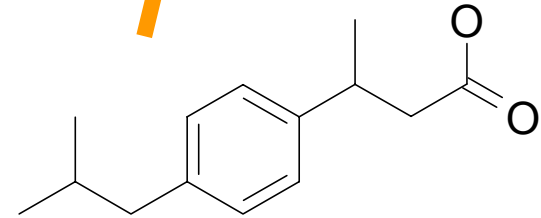
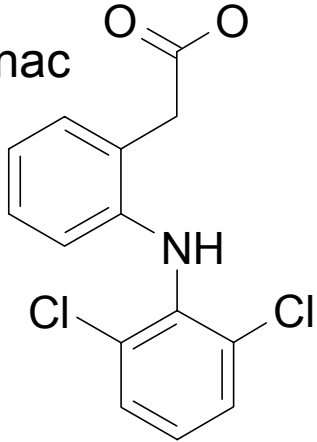
kyselina acetylsalicylová



1EQG
COX-1

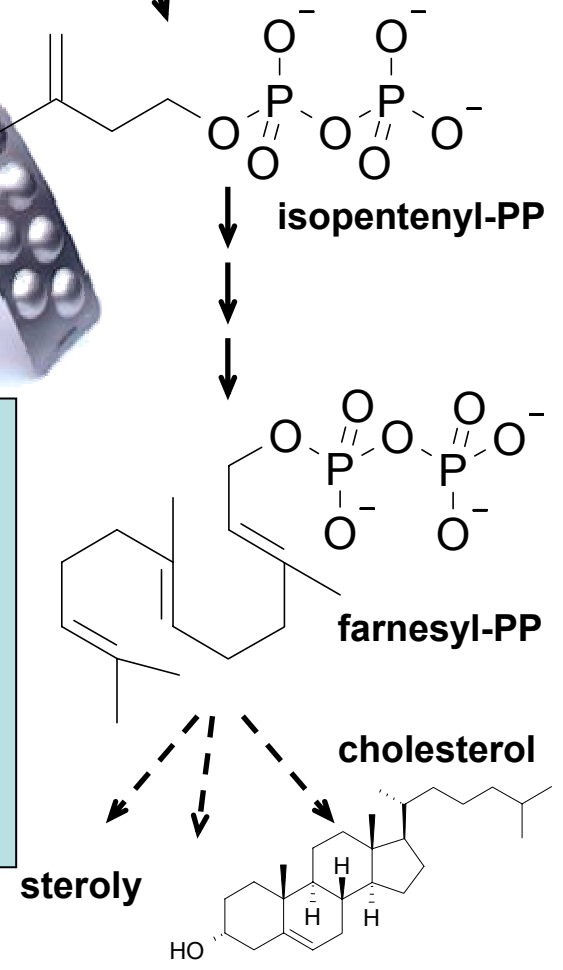
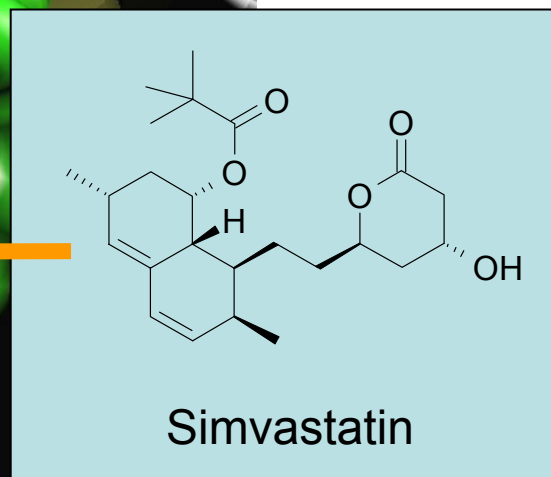
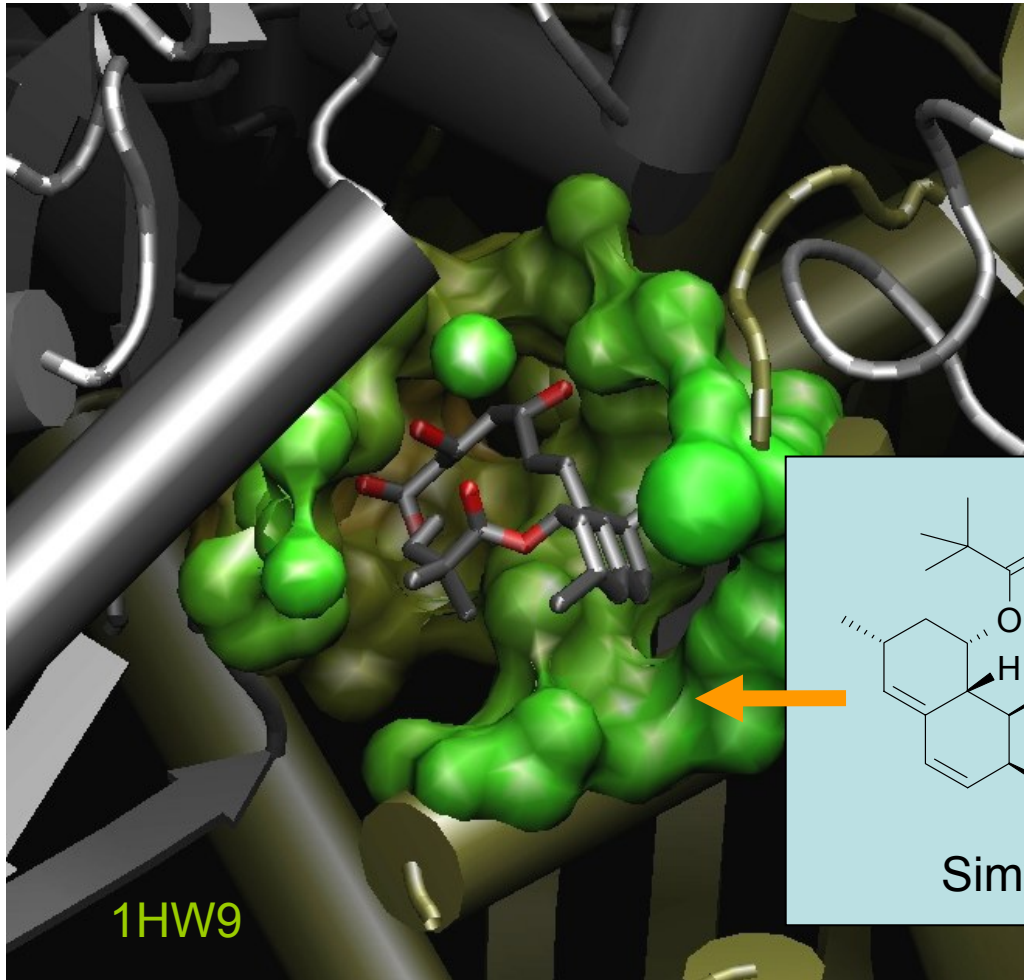
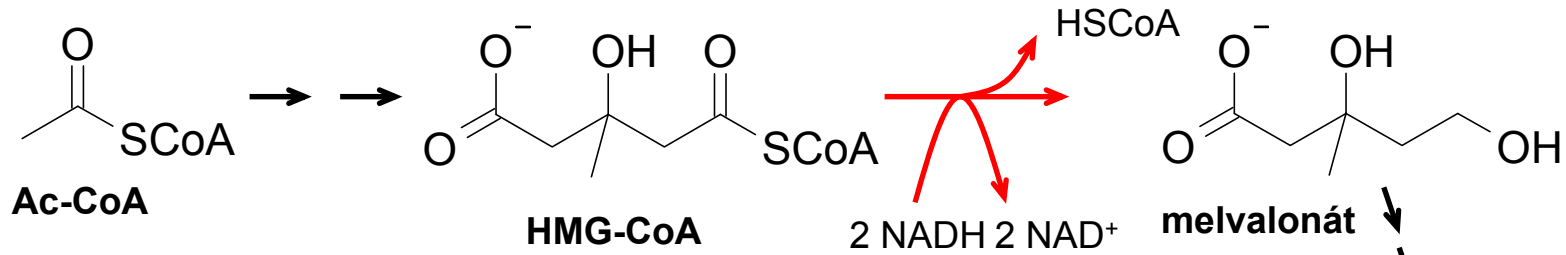


Diclofenac



Ibuprofen

HMG-CoA reduktasa EC 1.1.1.34

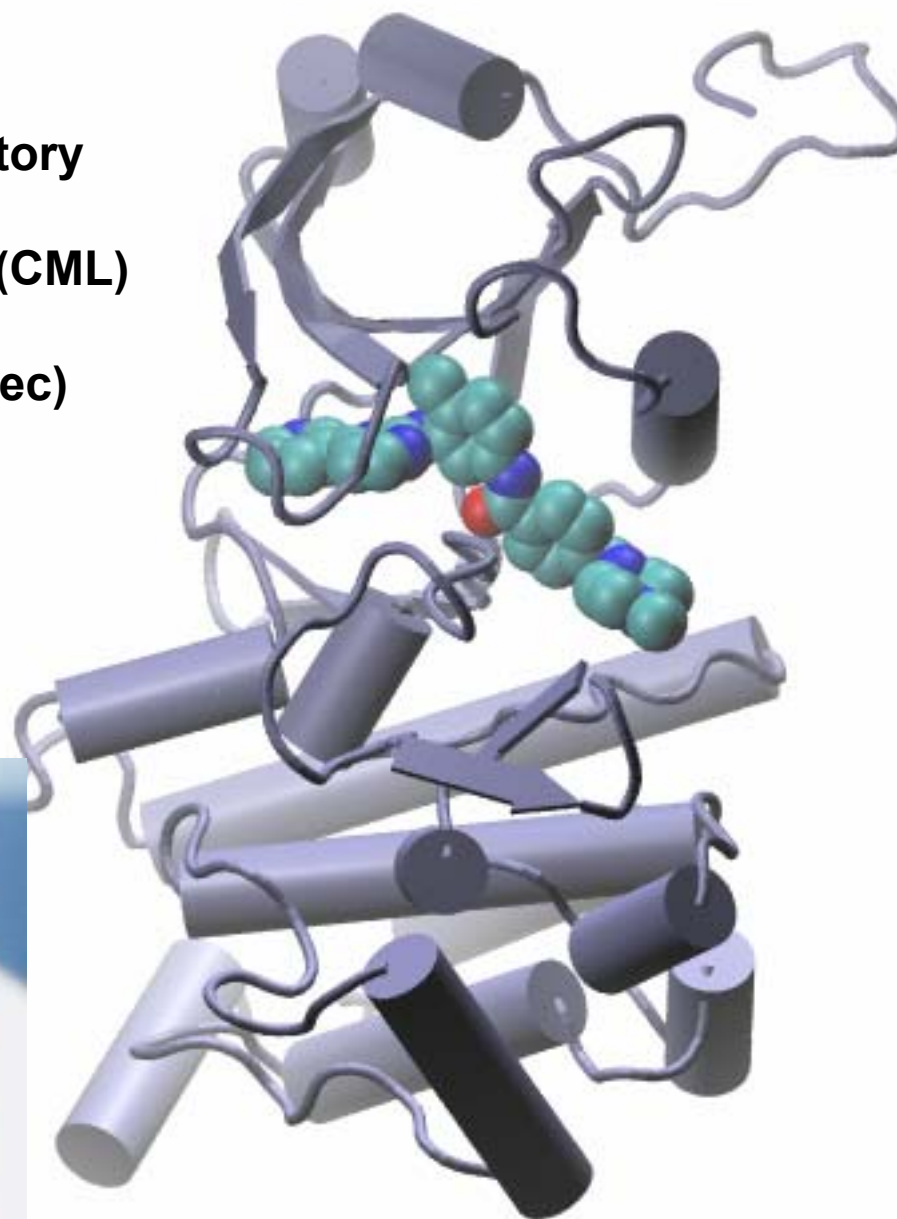
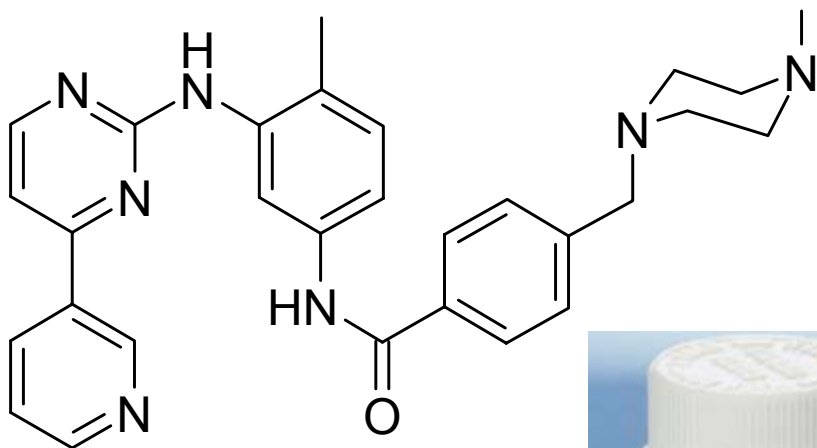


Lékařství:

inhibitory

Chronická myeloidní leukémie (CML)

Imatinib (STI 571, Gleevec, Glivec)

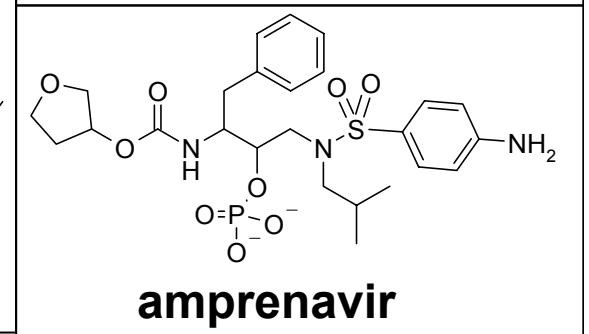
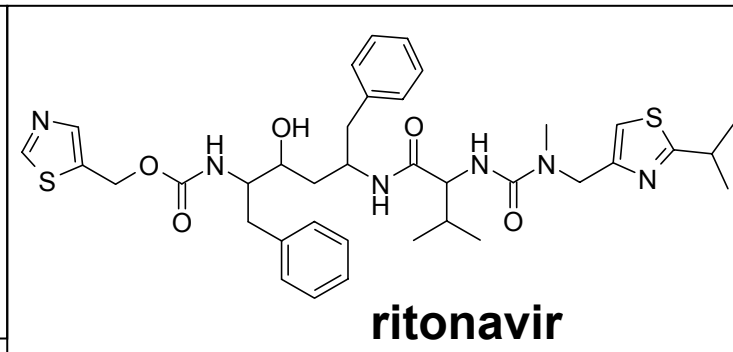
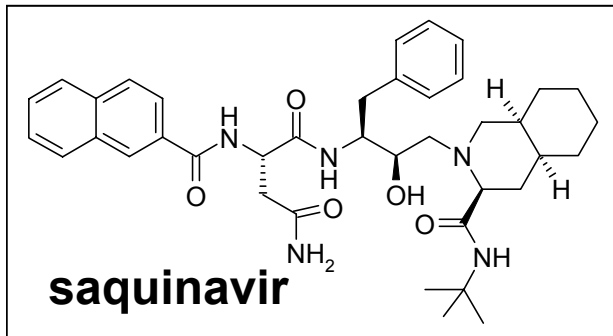
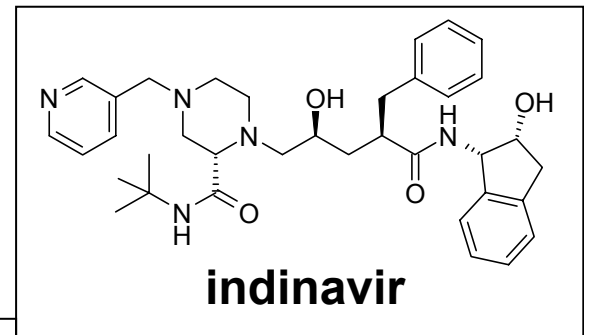
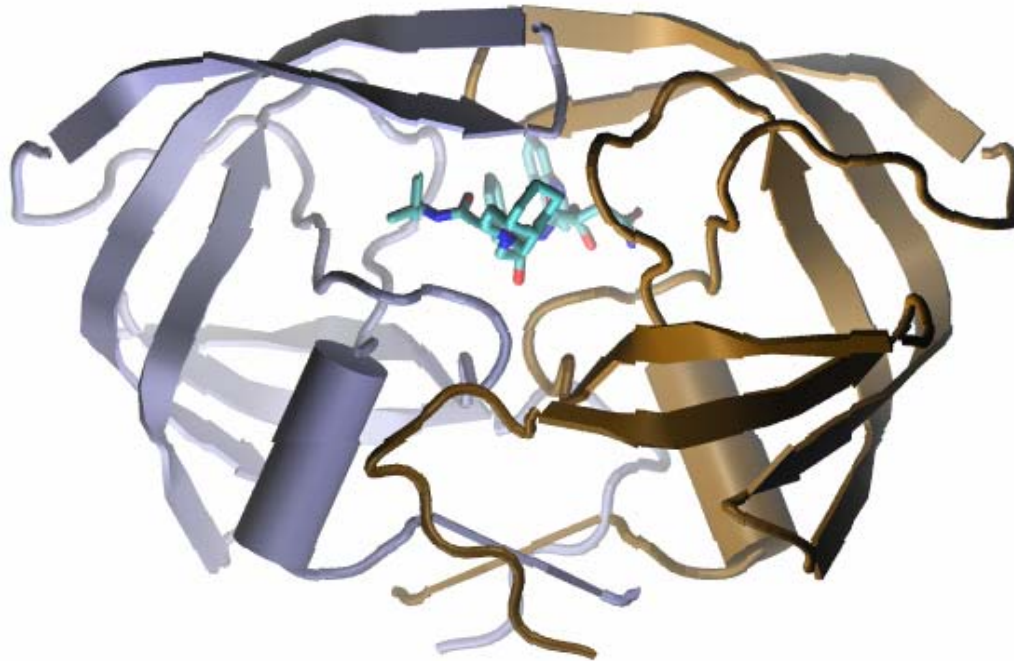


Lékařství:

inhibitory

Human immunodeficiency virus (HIV)

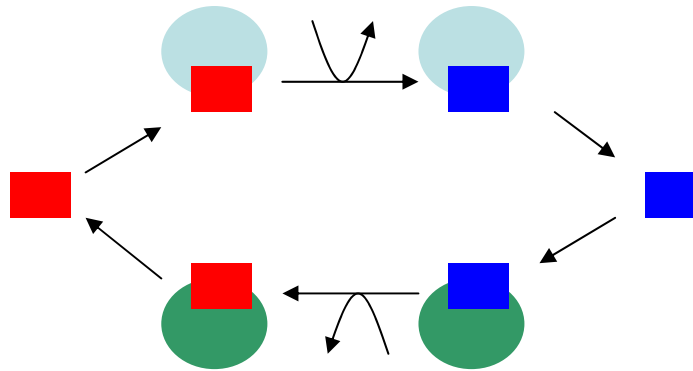
proteasa



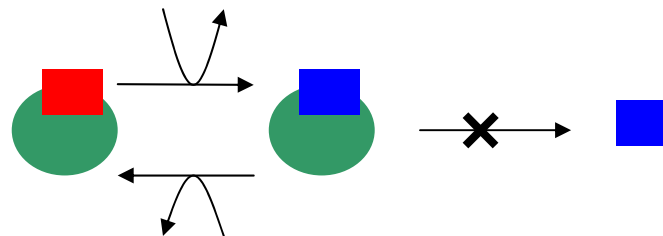
Kofaktory, koenzymy, prostetické skupiny

- kofaktory = koenzymy + prostetické skupiny

- koenzymy

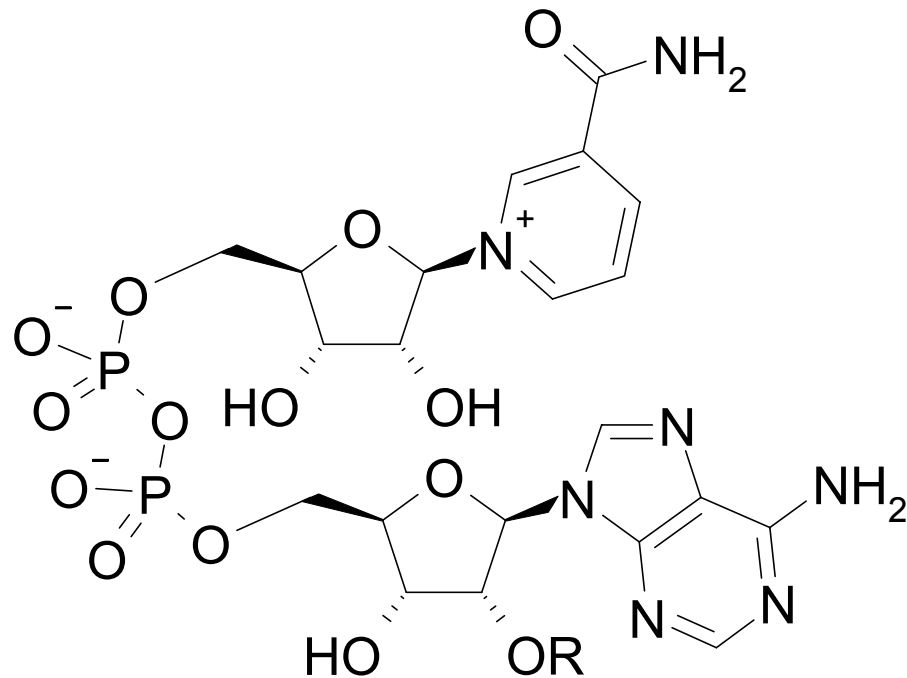
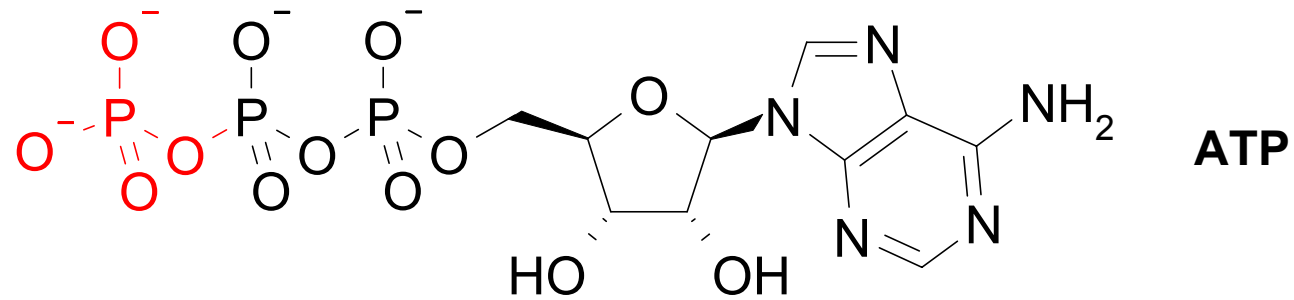


-prostetické skupiny

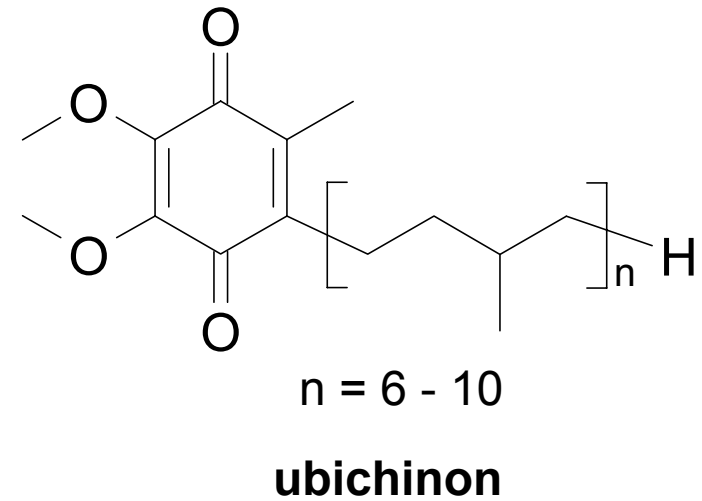


Kofaktory, koenzymy, prostetické skupiny

koenzymy

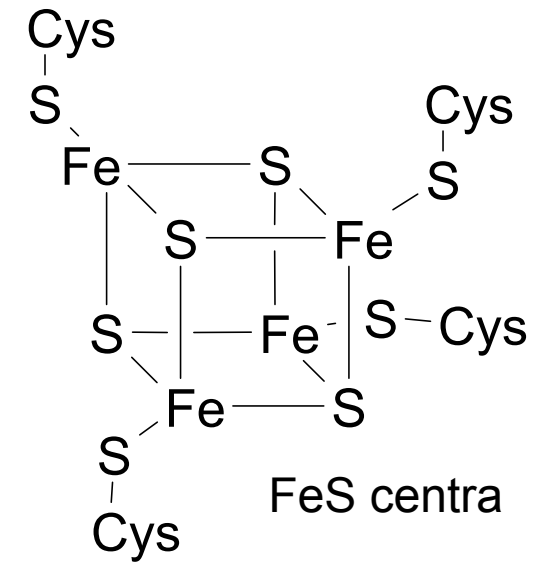
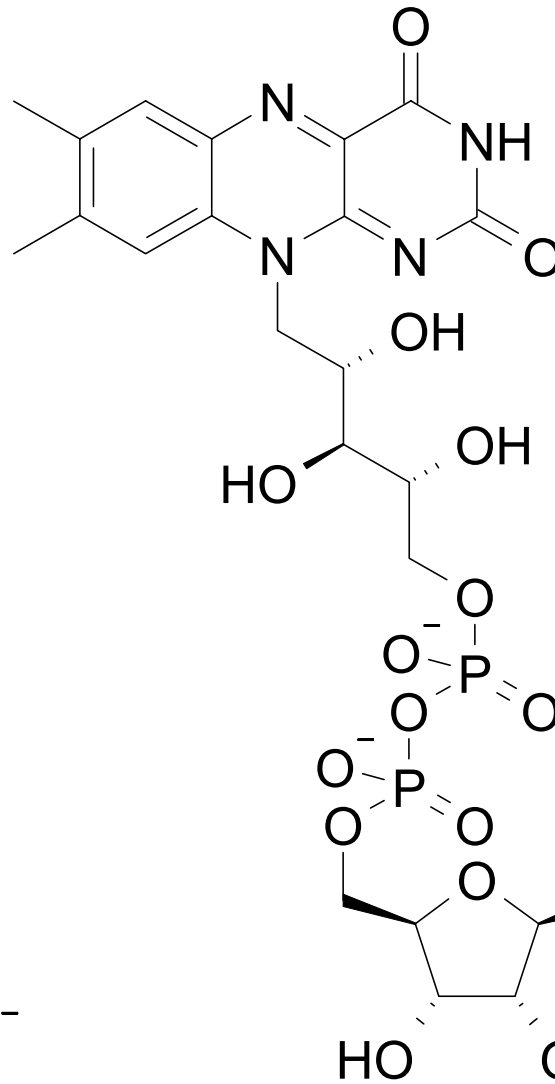
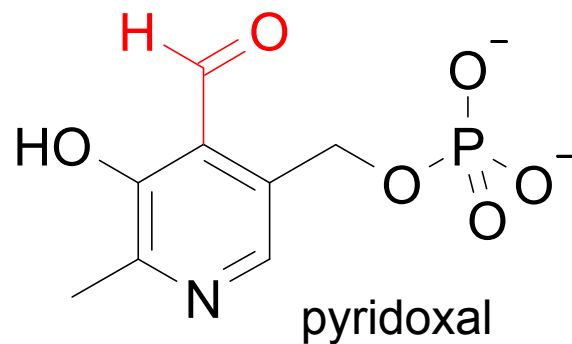
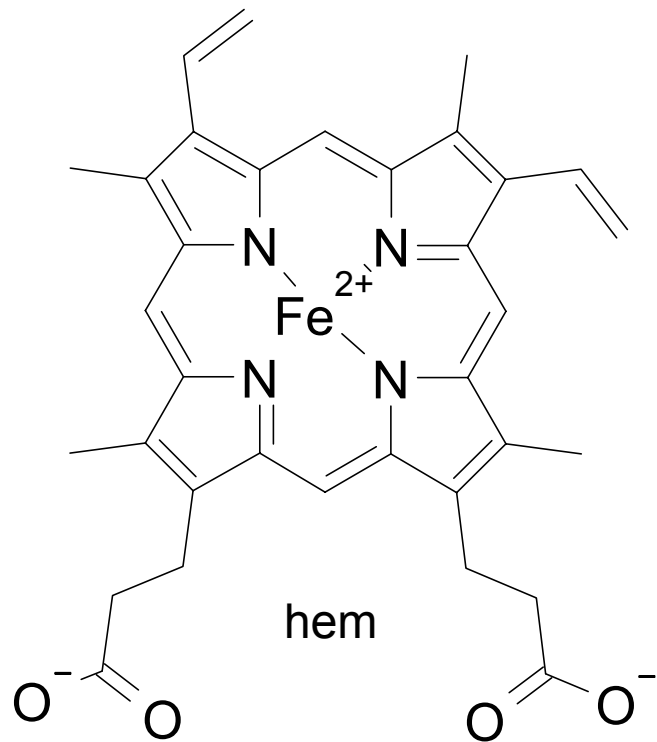


zdroj - niacin



Kofaktory, koenzymy, prostetické skupiny

Prostetické skupiny



FAD zdroj – riboflavin (B_2)

Kofaktory, koenzymy, prostetické skupiny

Prostetické skupiny

vitamin B₁₂

