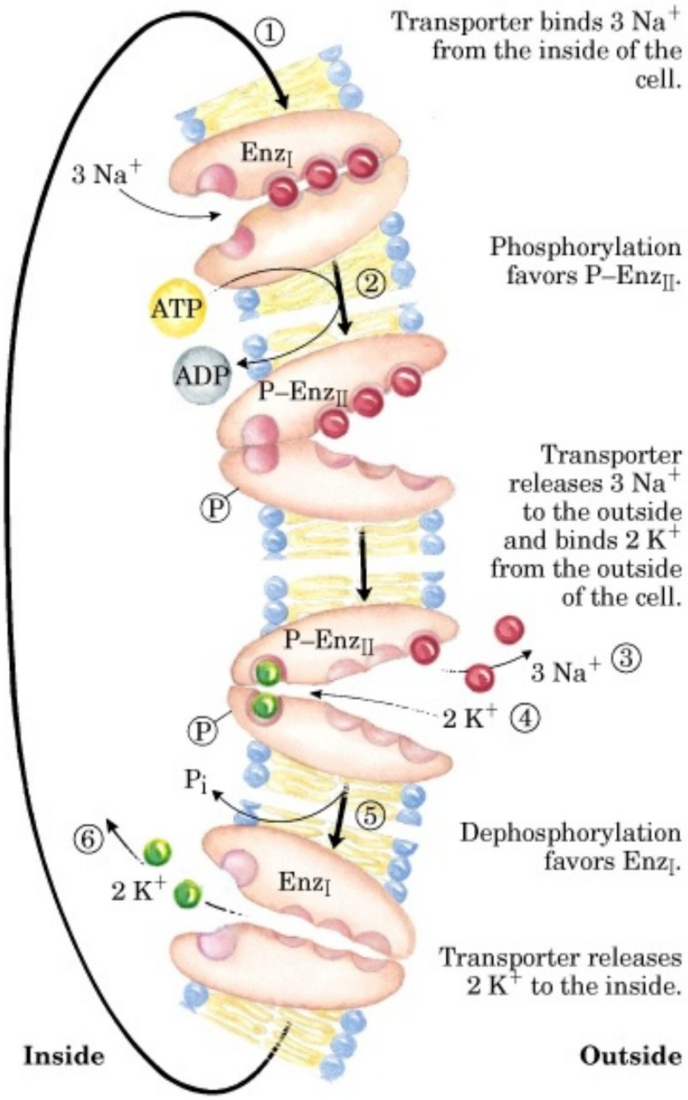
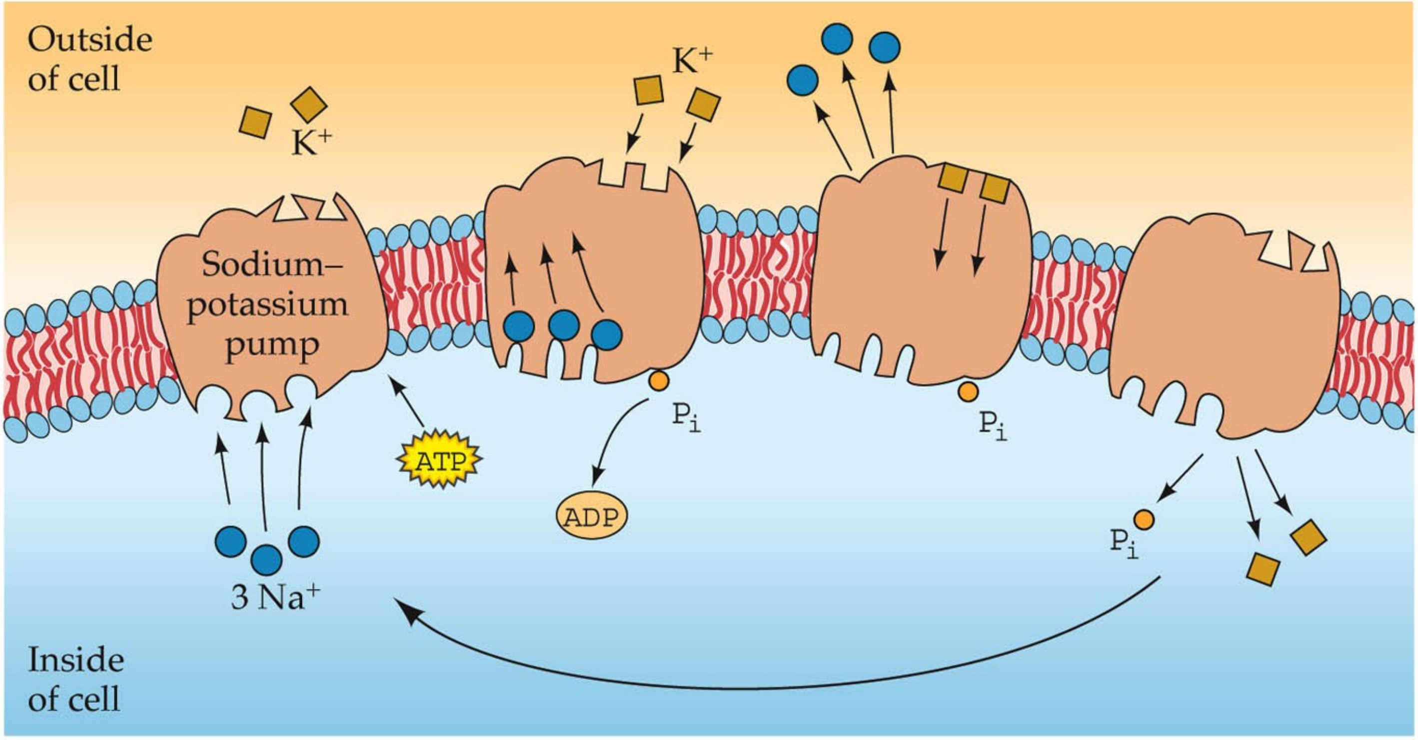
VÝZNAMNÉ PŘENAŠEČOVÉ SYSTÉMY

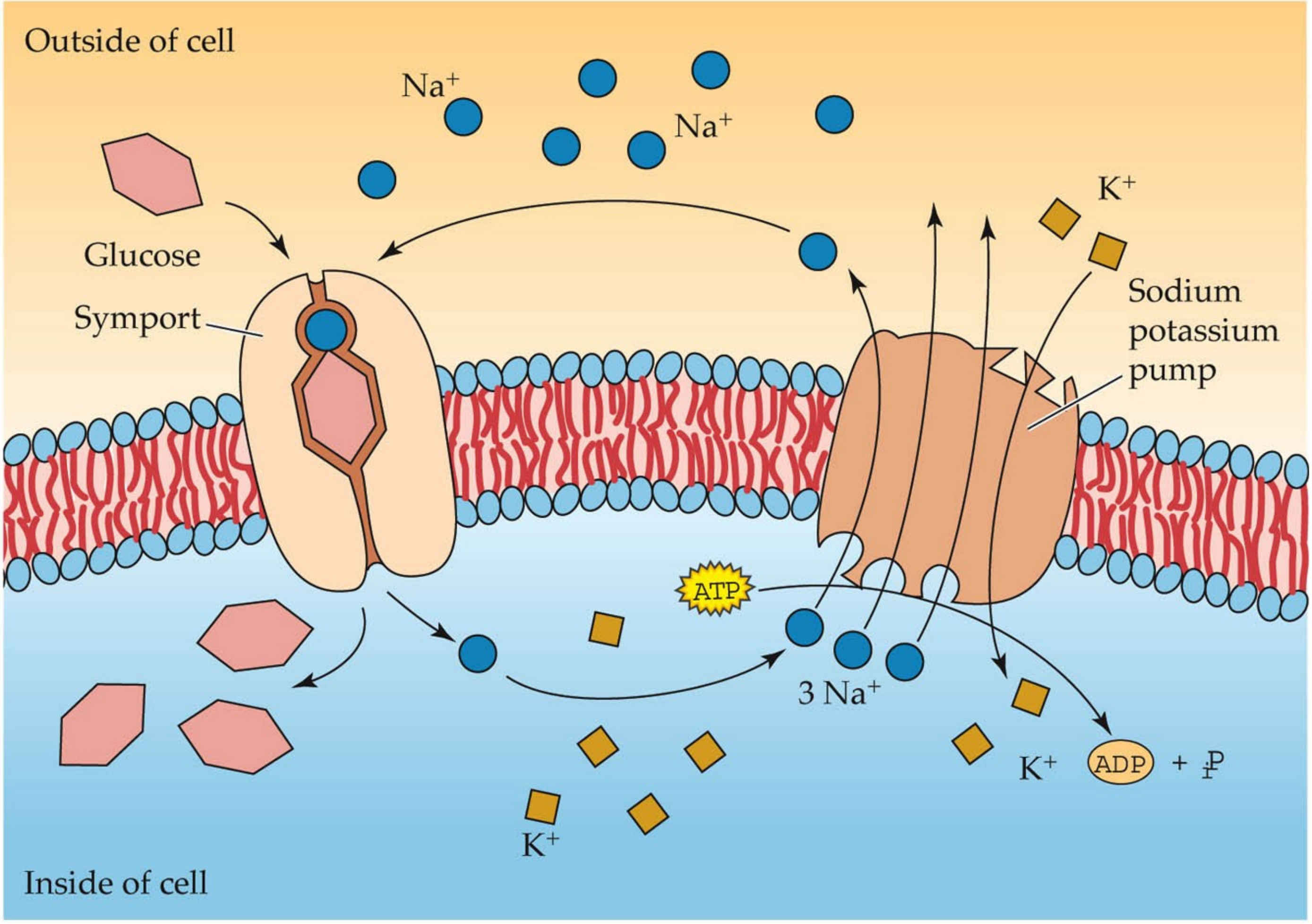
NaK - ATPasa

Mechanism of the Na-K transporter





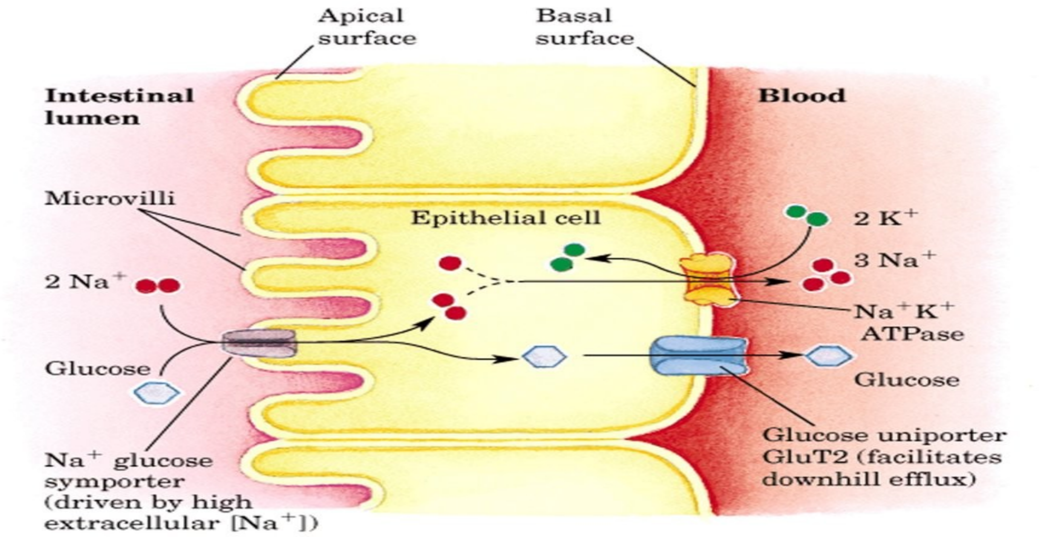
LIFE: THE SCIENCE OF BIOLOGY, Seventh Edition, **Figure 5.13 Primary Active Transport: The Sodium–Potassium Pump**



LIFE: THE SCIENCE OF BIOLOGY, Seventh Edition, Figure 5.14 Secondary Active Transport

Transport glukosy

Na+/glucose symporter



For charged ion transport: $\Delta G = RT\ln [Na^+]_{in}/[Na^+]_{out} + nF\Delta E$

$= 5.7$ KJ $\log [Na^+]_{in}/[Na^+]_{out} + n \times 96.5\, \Delta E$

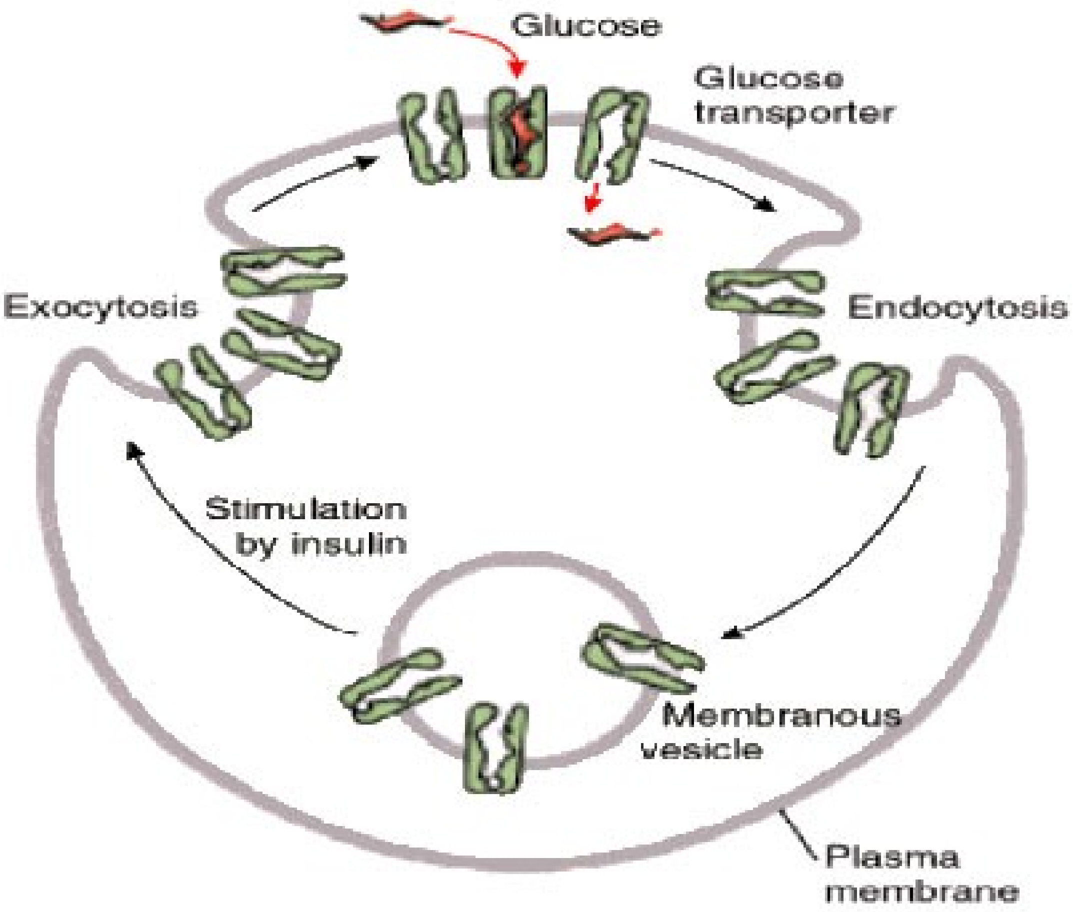
Moving a Na^+ ion into the cell releases = 5.7 log(12/145) + 1 x 96.5 x (-0.05)
= -6.2 KJ/mol - 4.8 KJ/mol = -11 KJ/mol

If two Na^+ ions move, energy available to pump glucose is -22 KJ/mol.

This energy could transport glucose against a concentration gradient;
it's magnitude would be governed by the available energy:

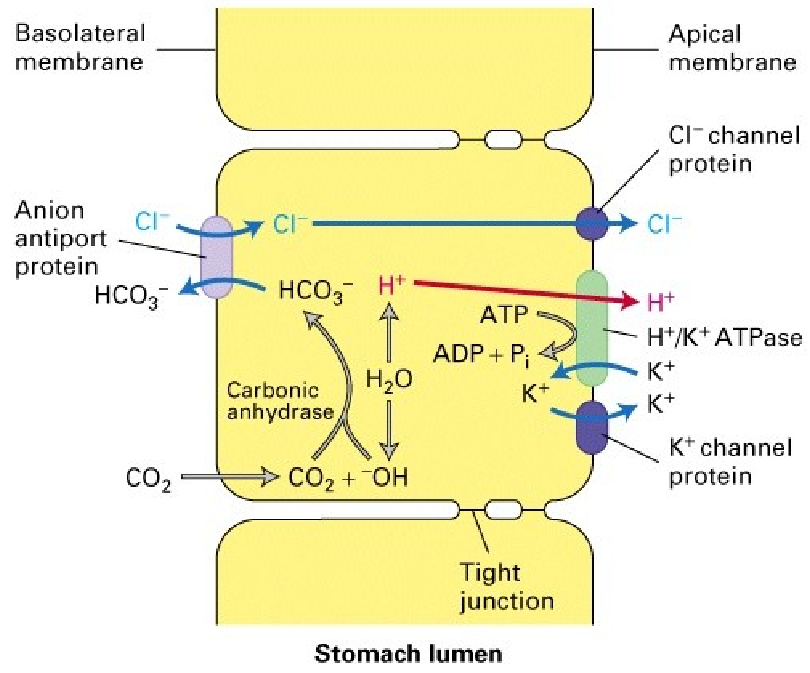
ΔG = 22 KJ/mol = 5.7 kJ/mol x $\log[\text{glucose}]_{in}/[\text{glucose}]_{out}$

3.86 = $\log [\text{glucose}]_{in}/[\text{glucose}]_{out}$ therefore $[\text{glucose}]_{in}/[\text{glucose}]_{out}$ = 7000.

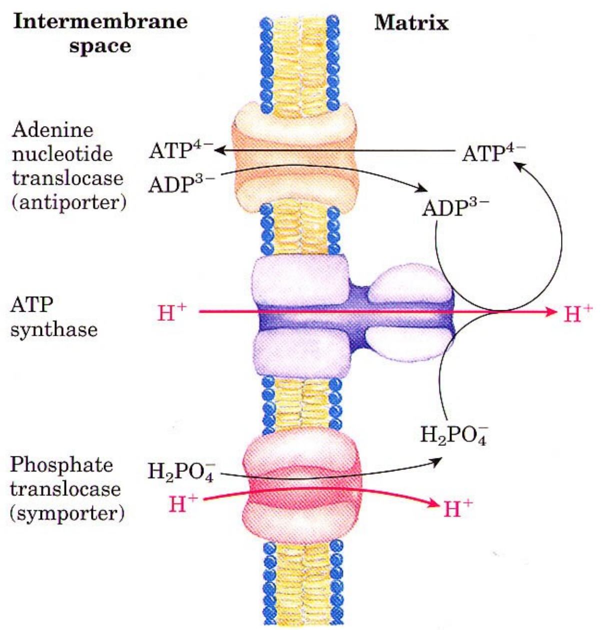


REGULACE příjmu glukosy insulinem

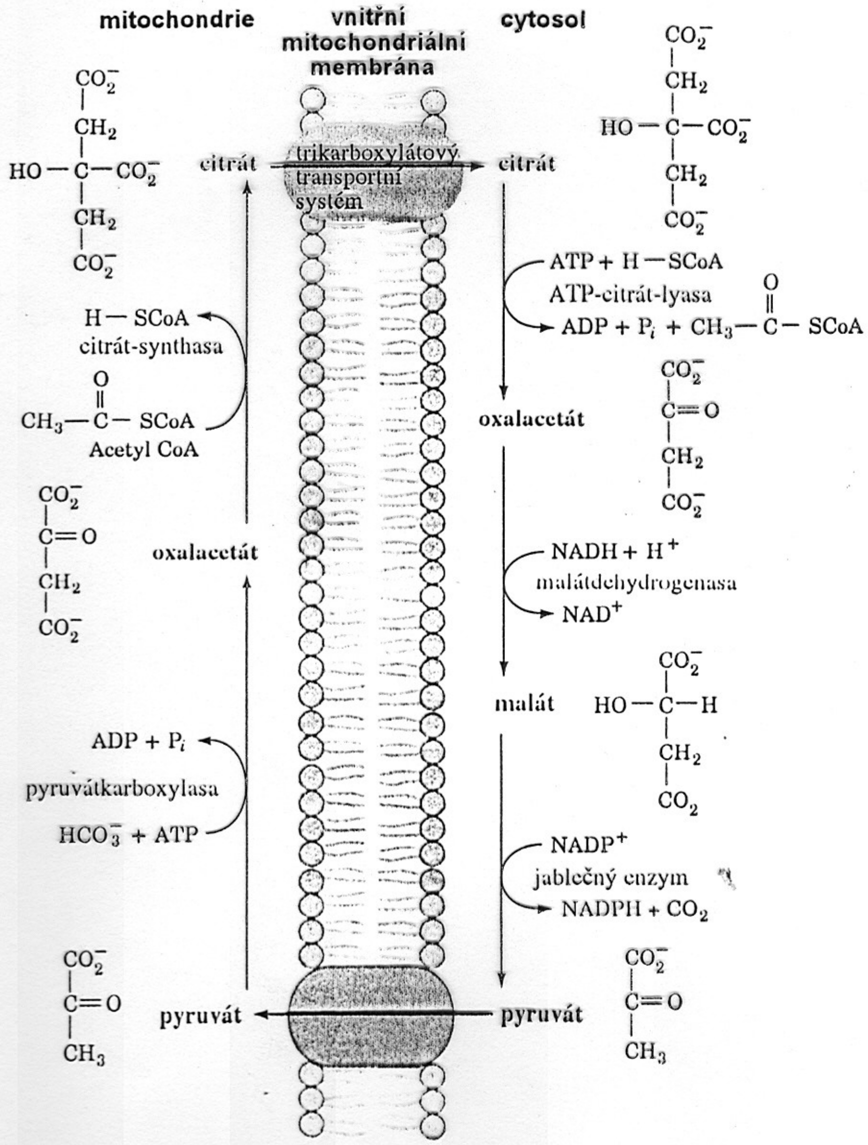
Transport HCl



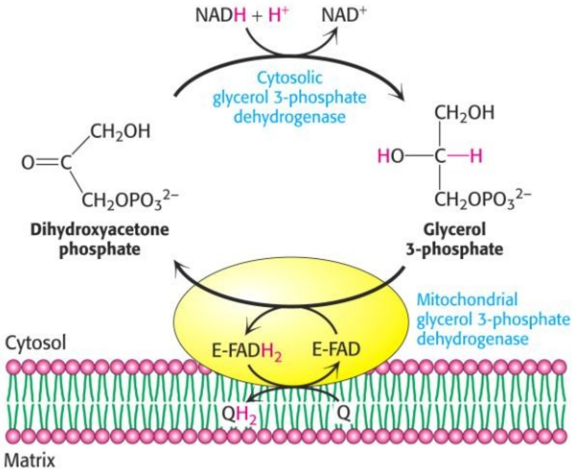
Mitochondriální transporty

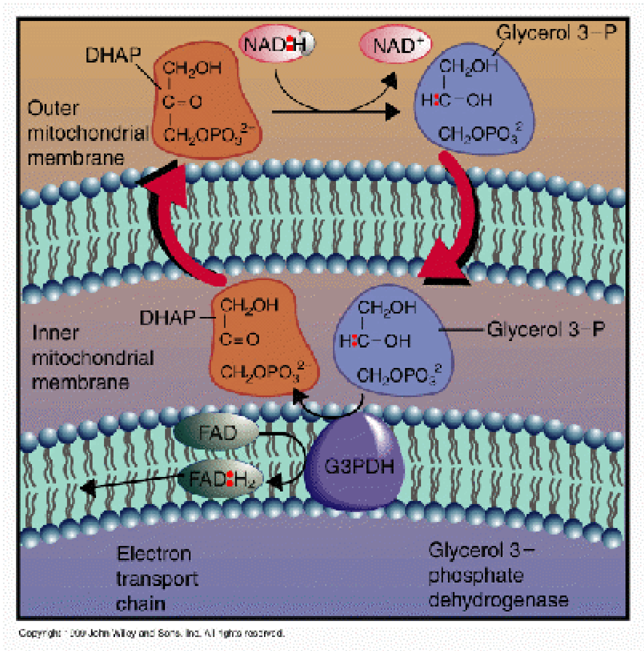


Přenos AcetCoA vně mitochondrie

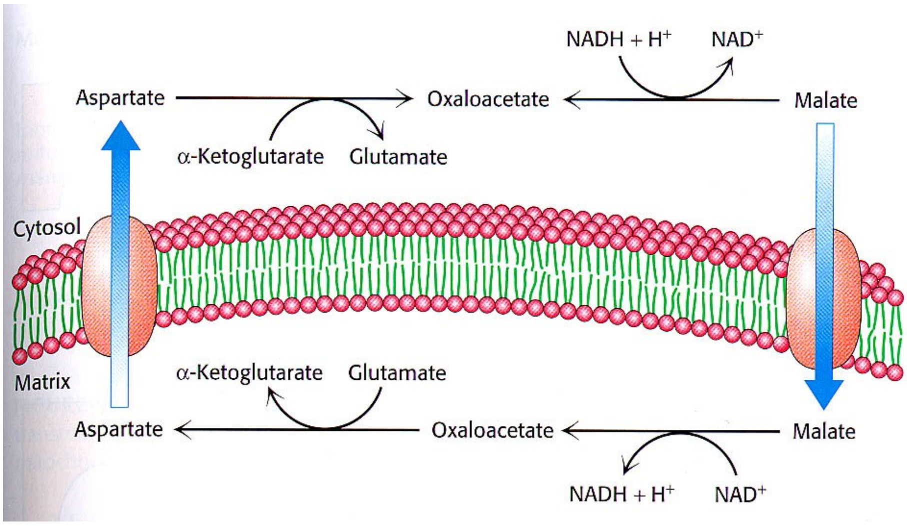


Oxidoredukční člunky – problém oxidace cytosolického NADH





GLYCEROLFOSFÁTOVÝ člunek



Malate-aspartate shuttle