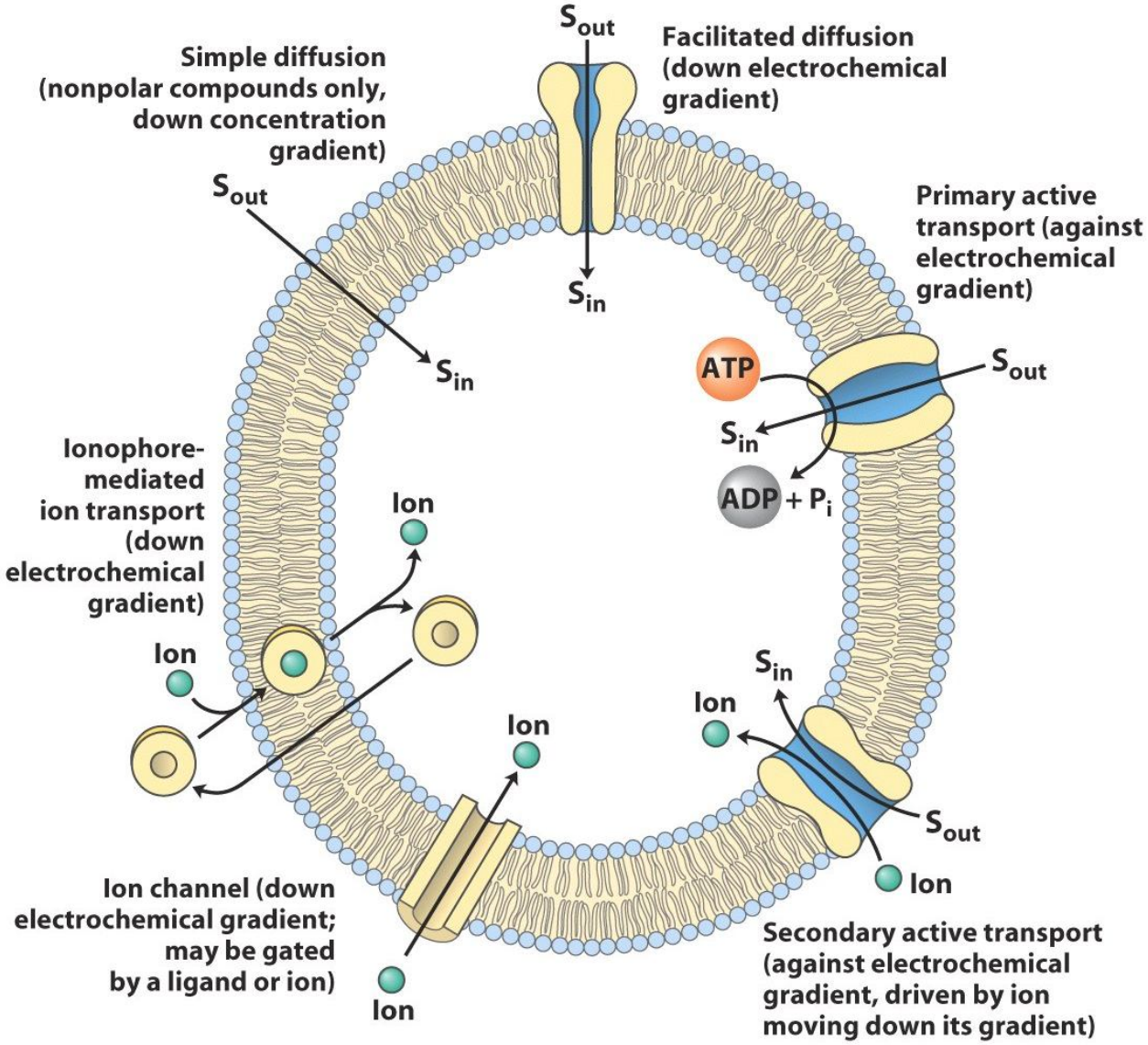
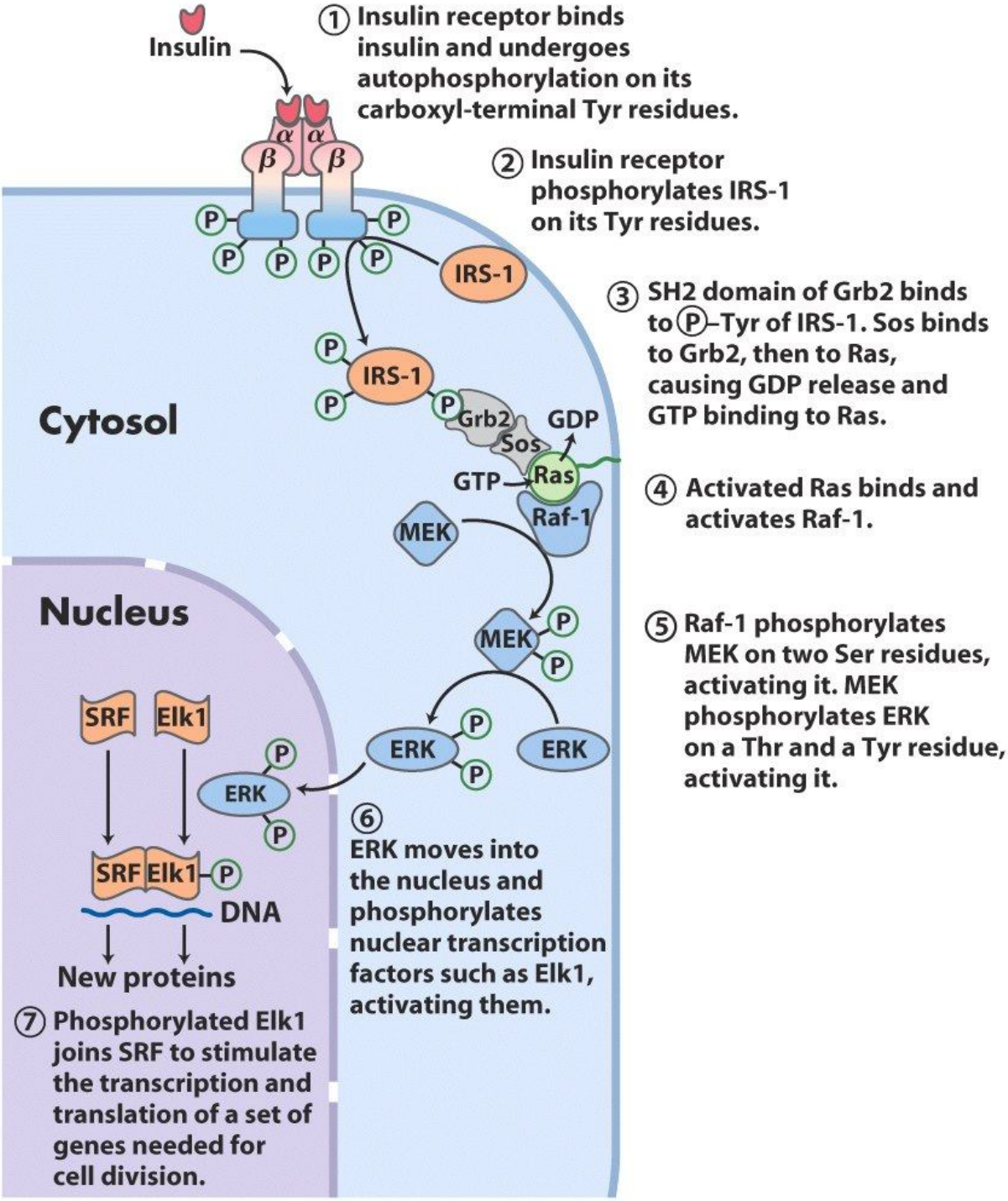
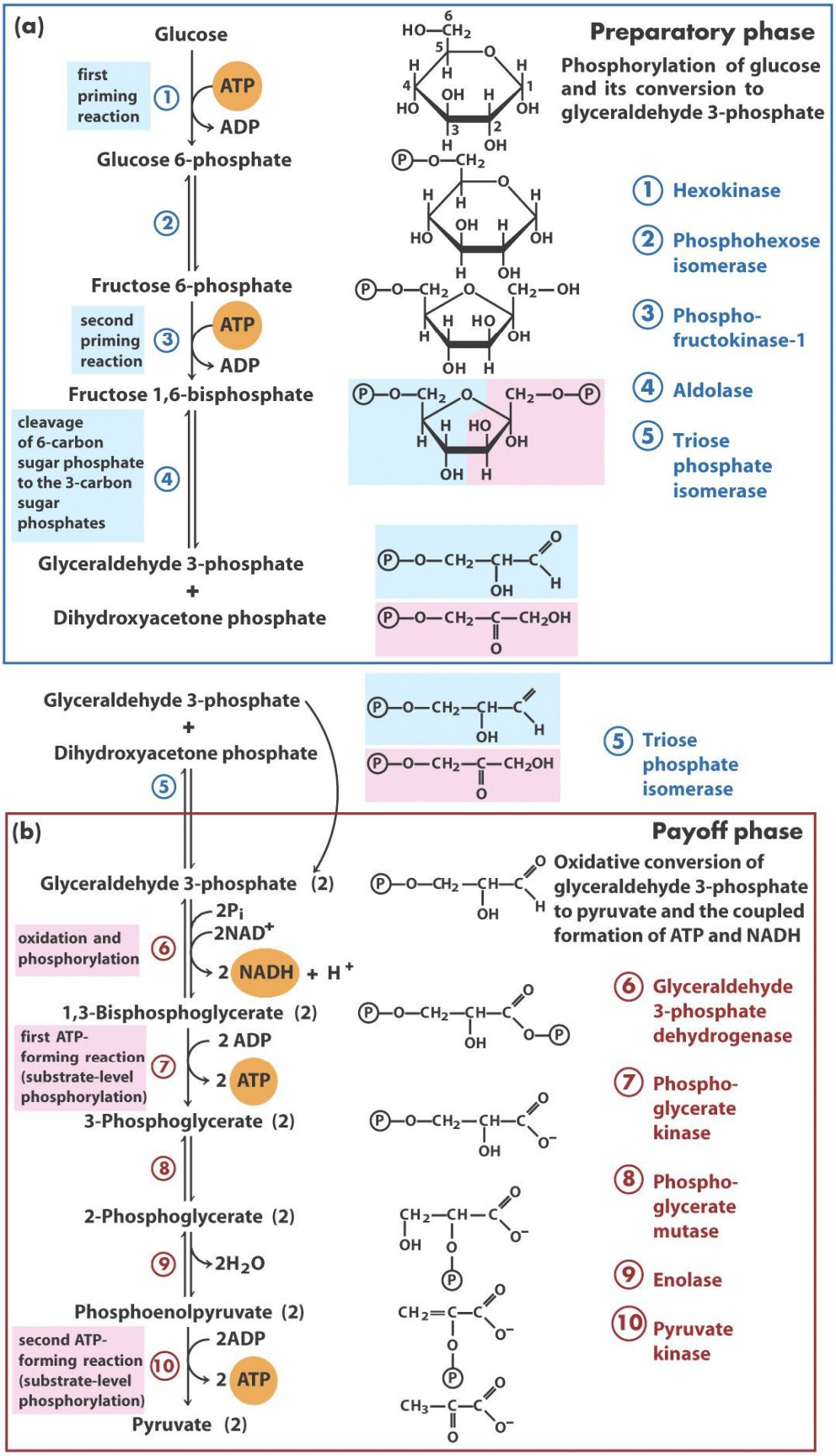
Transport van opgeloste stoffen doorheen de membraan



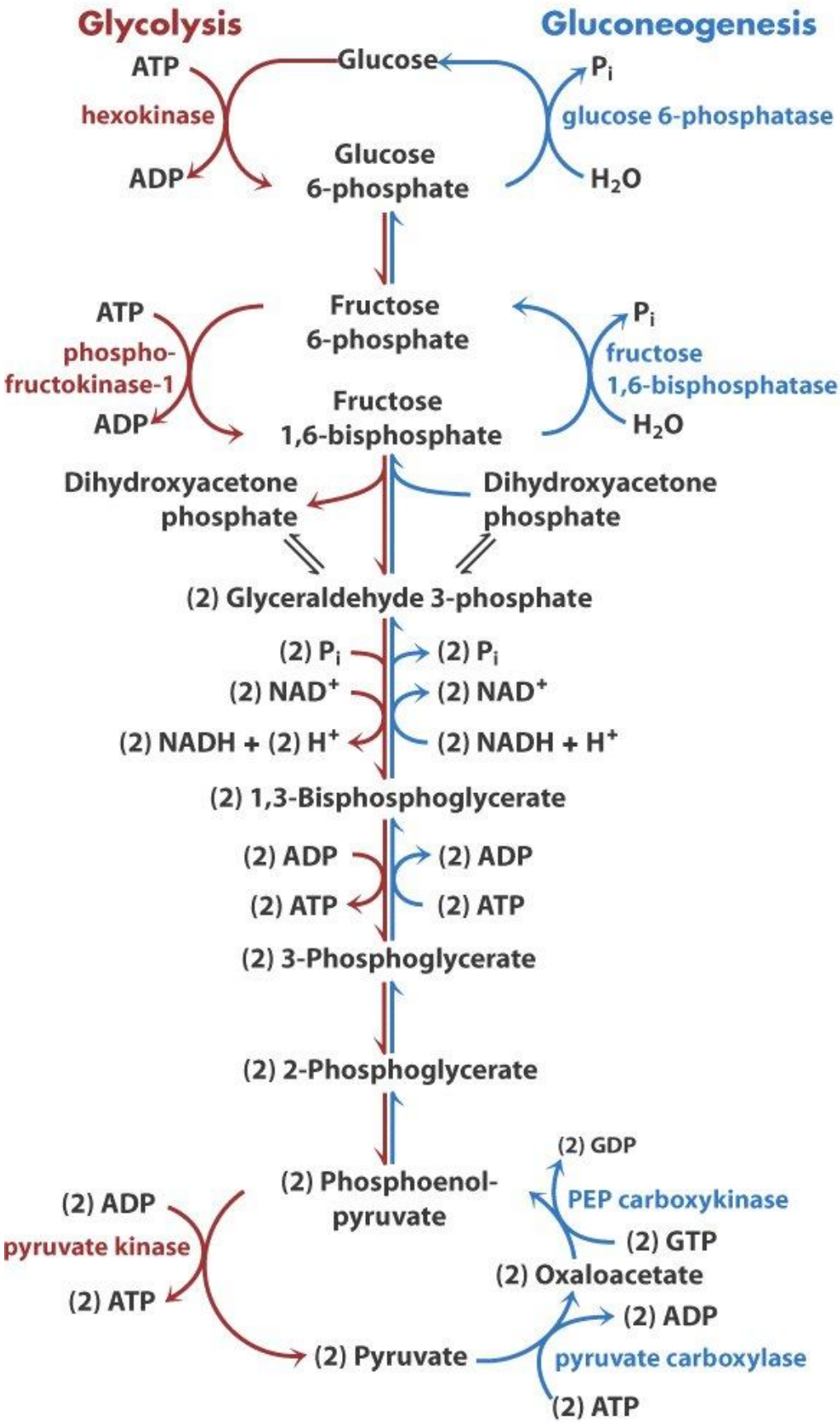
De insuline receptor is een tyrosine-specifiek proteïne kinase



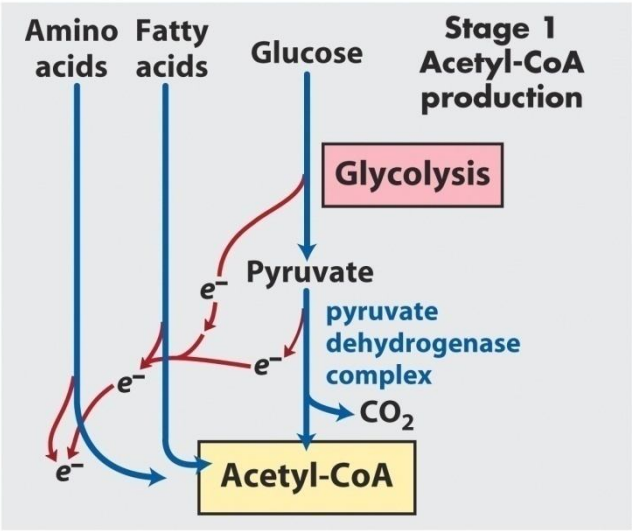
Glycolyse

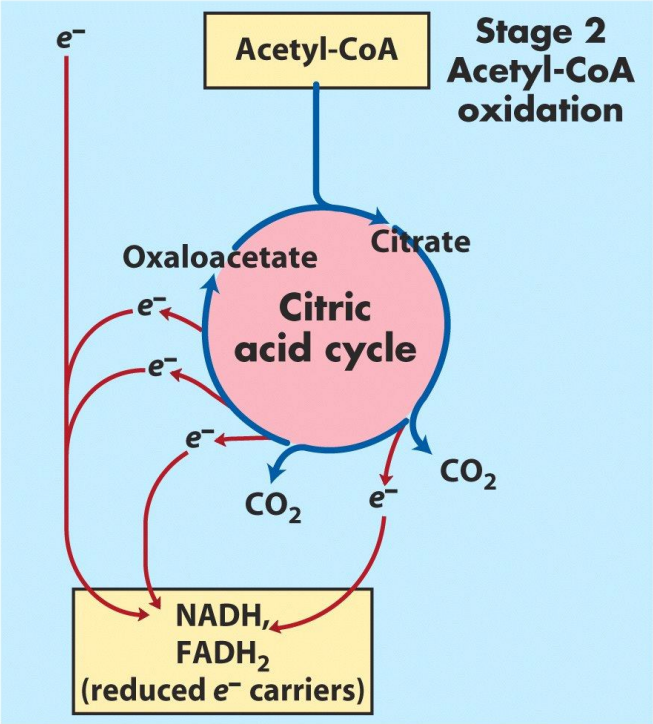

(a)
Preparatory phase
Phosphorylation of glucose and its conversion to glyceraldehyde 3-phosphate
Glucose
first priming reaction
ATP
ADP
Glucose 6-phosphate
Fructose 6-phosphate
second priming reaction
ATP
ADP
Fructose 1,6-bisphosphate
cleavage of 6-carbon sugar phosphate to the 3-carbon sugar phosphates
Glyceraldehyde 3-phosphate
+
Dihydroxyacetone phosphate
1 Hexokinase
2 Phosphohexose isomerase
3 Phospho-fructokinase-1
4 Aldolase
5 Triose phosphate isomerase
Glyceraldehyde 3-phosphate
+
Dihydroxyacetone phosphate
5 Triose phosphate isomerase
(b)
Payoff phase
Oxidative conversion of glyceraldehyde 3-phosphate to pyruvate and the coupled formation of ATP and NADH
Glyceraldehyde 3-phosphate (2)
oxidation and phosphorylation
2Pi
2NAD+
2 NADH + H+
1,3-Bisphosphoglycerate (2)
first ATP-forming reaction (substrate-level phosphorylation)
2 ADP
2 ATP
3-Phosphoglycerate (2)
2-Phosphoglycerate (2)
2H2O
Phosphoenolpyruvate (2)
second ATP-forming reaction (substrate-level phosphorylation)
2ADP
2 ATP
Pyruvate (2)
6 Glyceraldehyde 3-phosphate dehydrogenase
7 Phospho-glycerate kinase
8 Phospho-glycerate mutase
9 Enolase
10 Pyruvate kinase

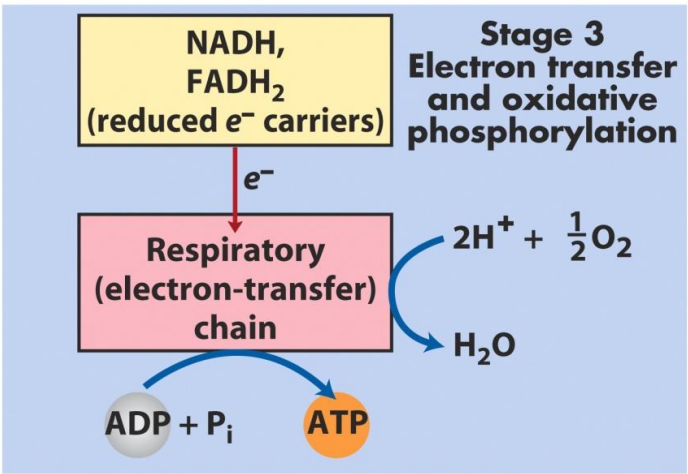
Gluconeogenese



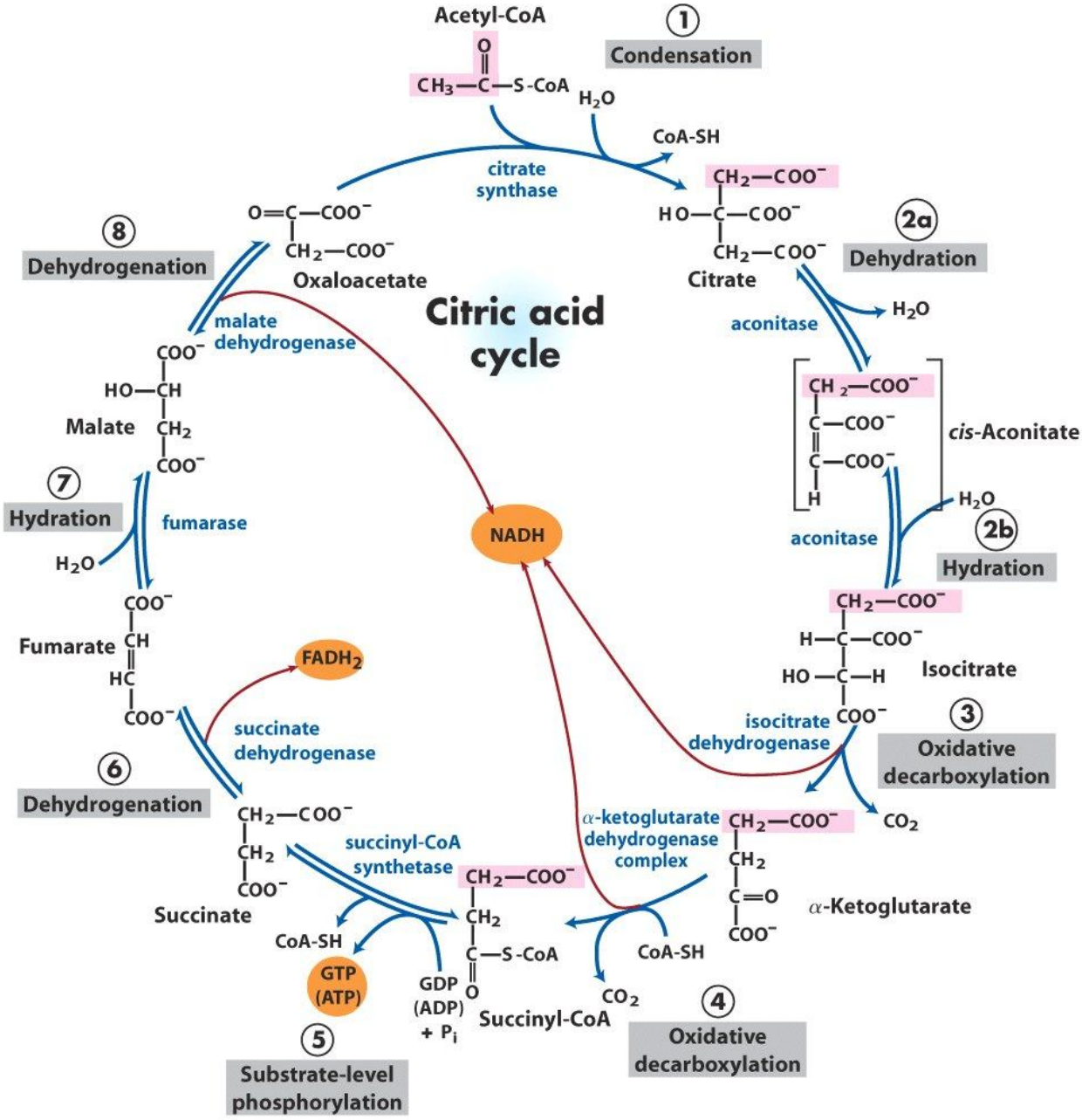
Cellulaire respiratie



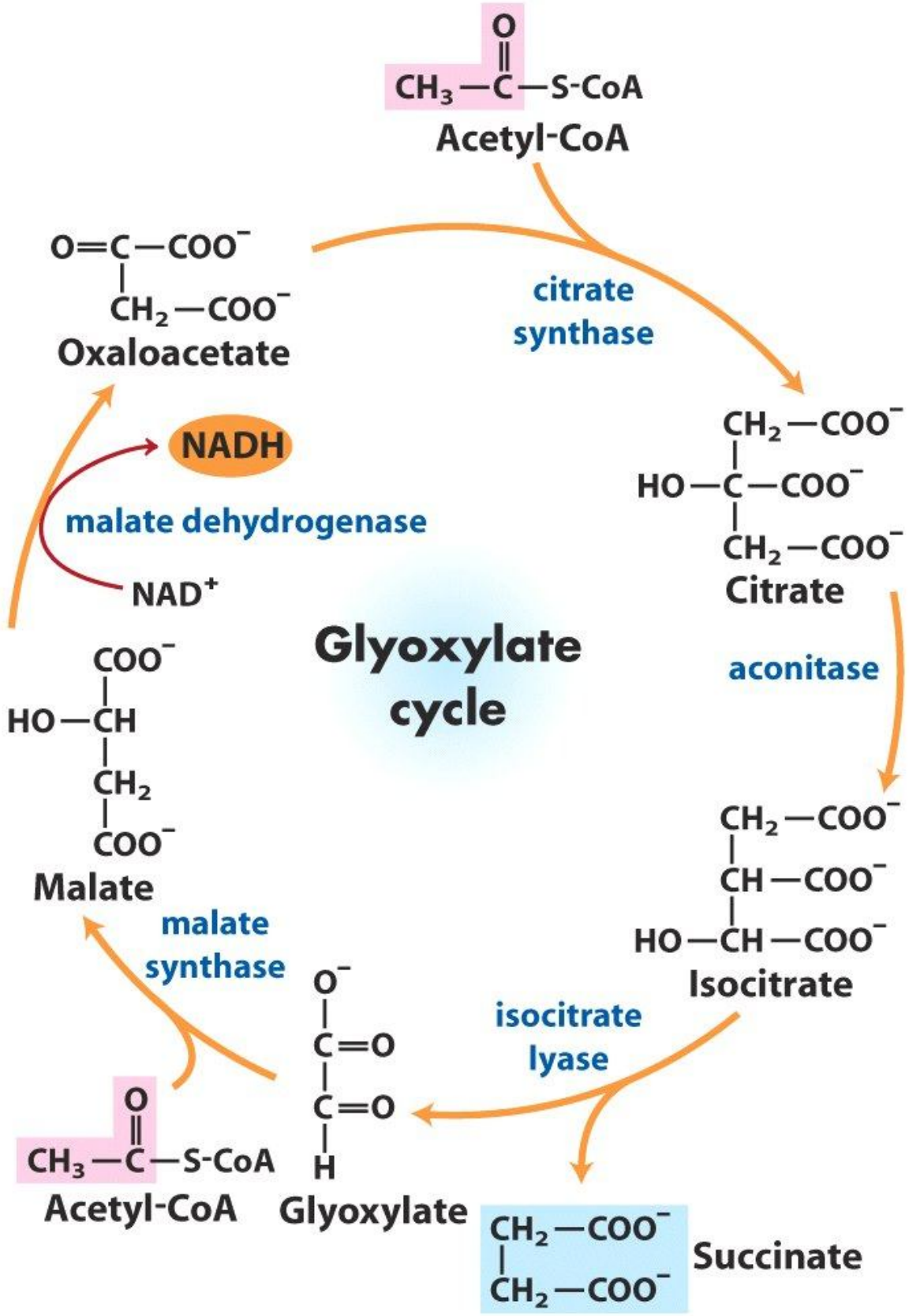




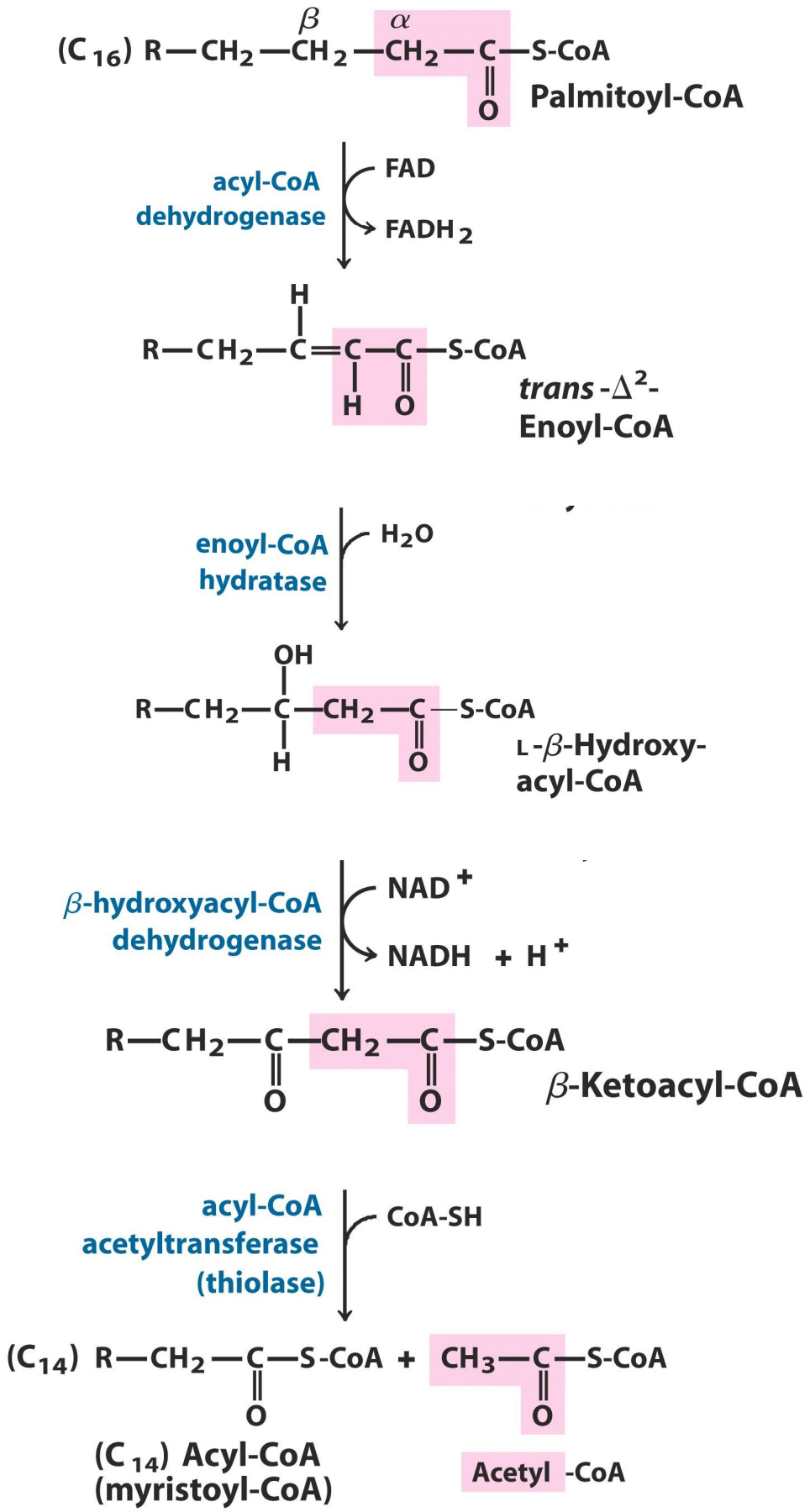
Citroenzuurcyclus



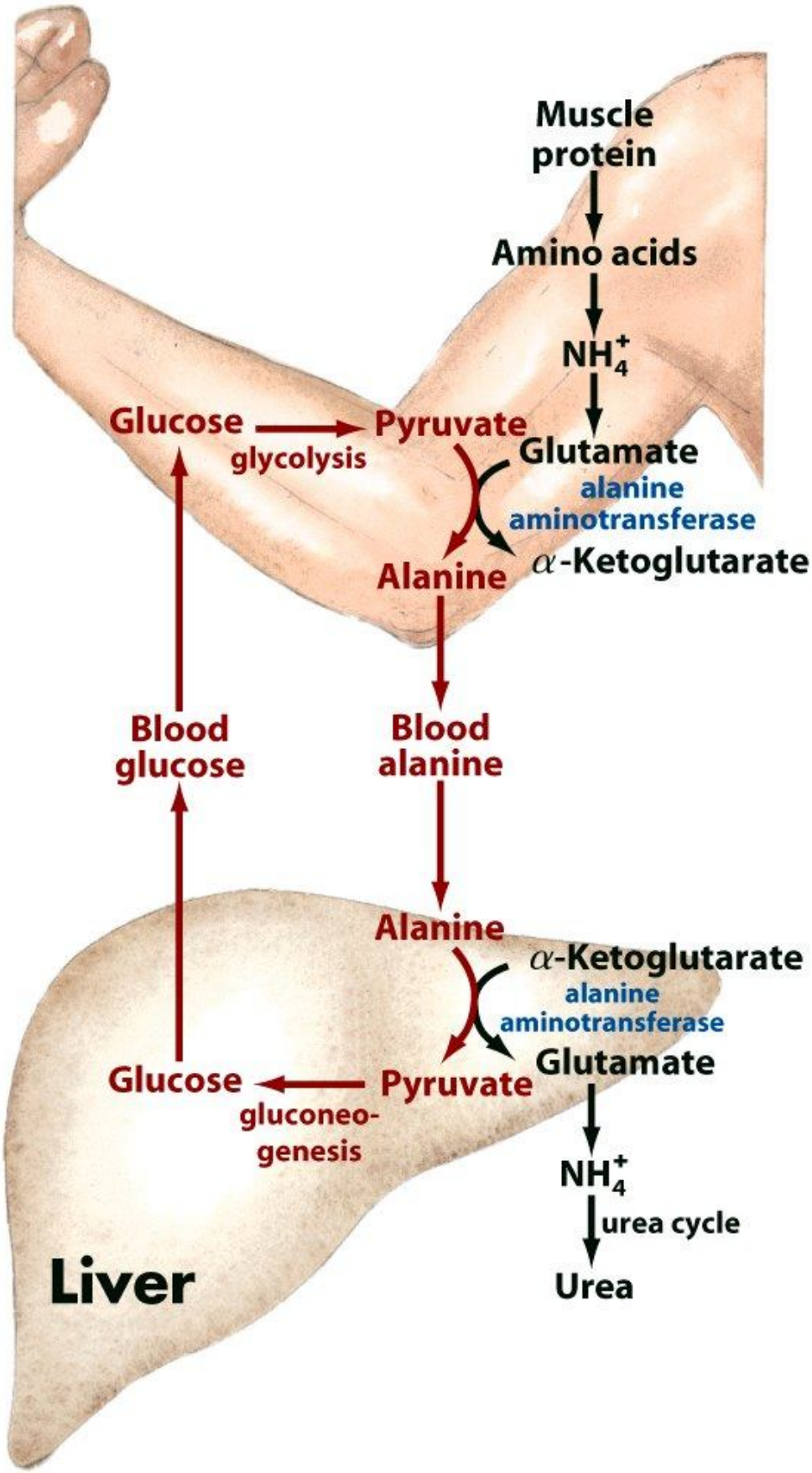
Glyoxylaat cyclus



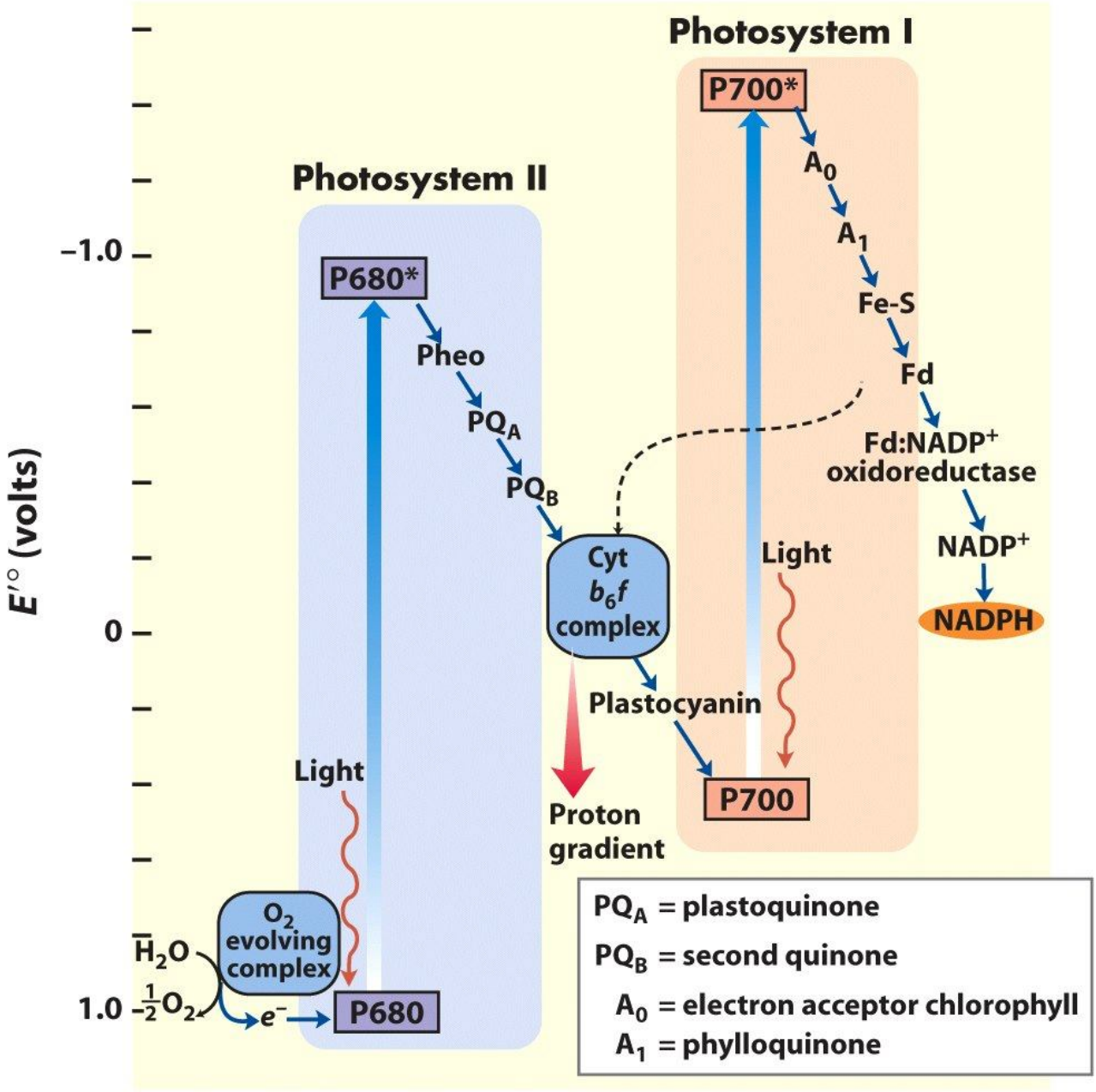
β-oxidatie van vetzuren



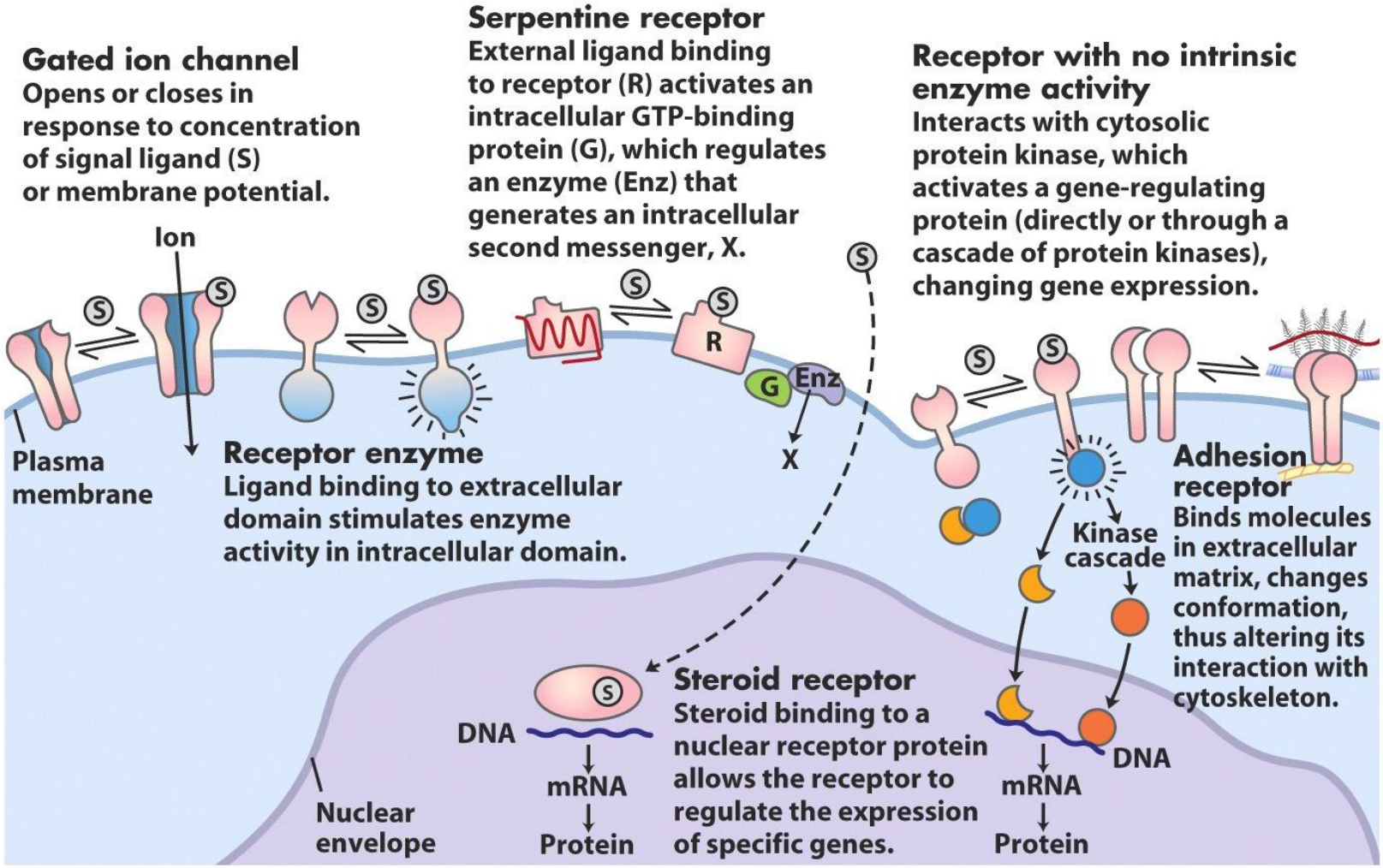
Glucose – alanine cyclus



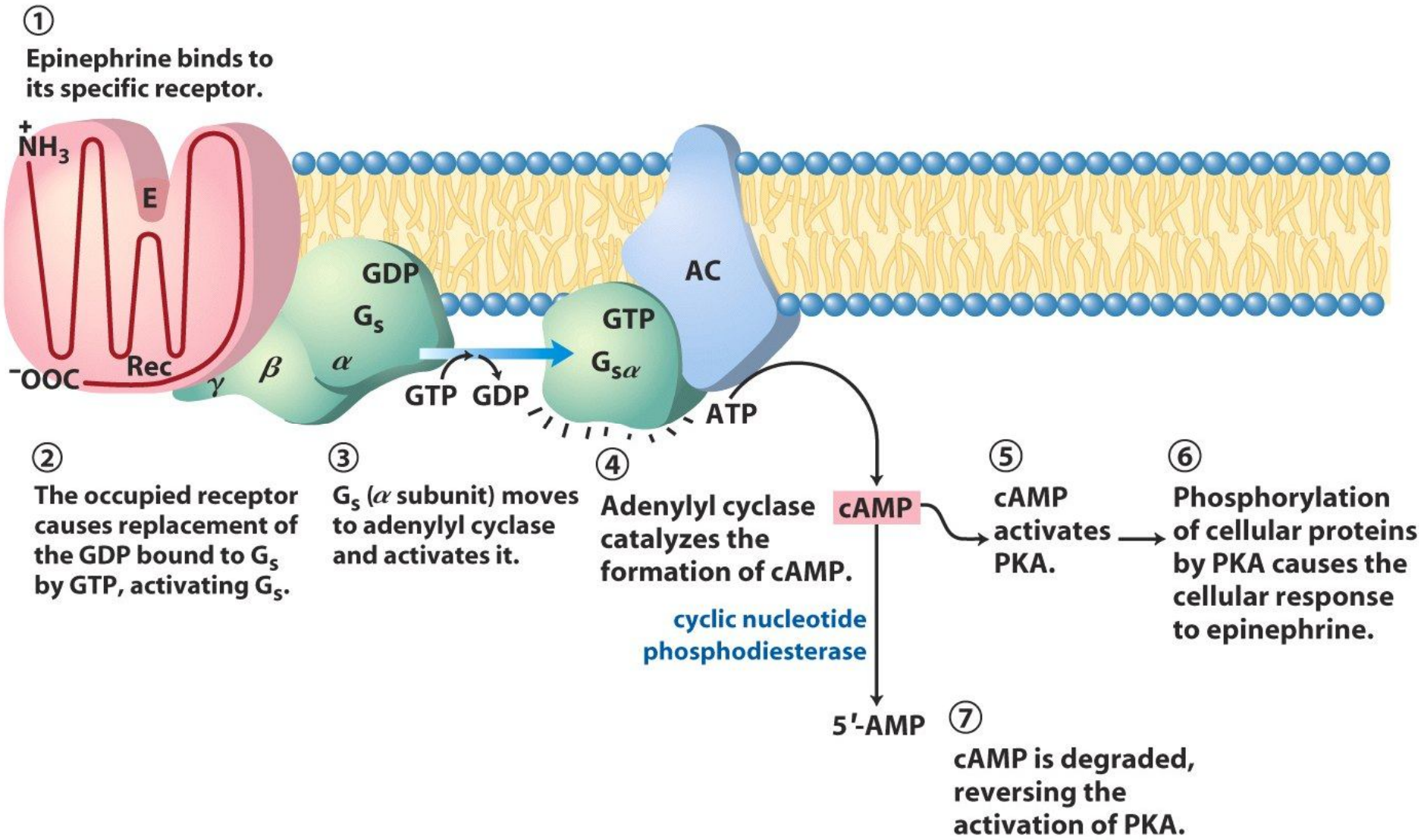
Z-schema


Photosystem I
P700*
A_0
A_1
Fe-S
Fd
Fd:NADP+ oxidoreductase
NADP+
NADPH
Photosystem II
P680*
Pheo
PQ_A
PQ_B
Cyt b_6f complex
Light
Plastocyanin
P700
Proton gradient
Light
O_2 evolving complex
H_2O
$\frac{1}{2}O_2$
e^-
P680
E'° (volts)
–1.0
0
1.0
PQ_A = plastoquinone
PQ_B = second quinone
A_0 = electron acceptor chlorophyll
A_1 = phylloquinone

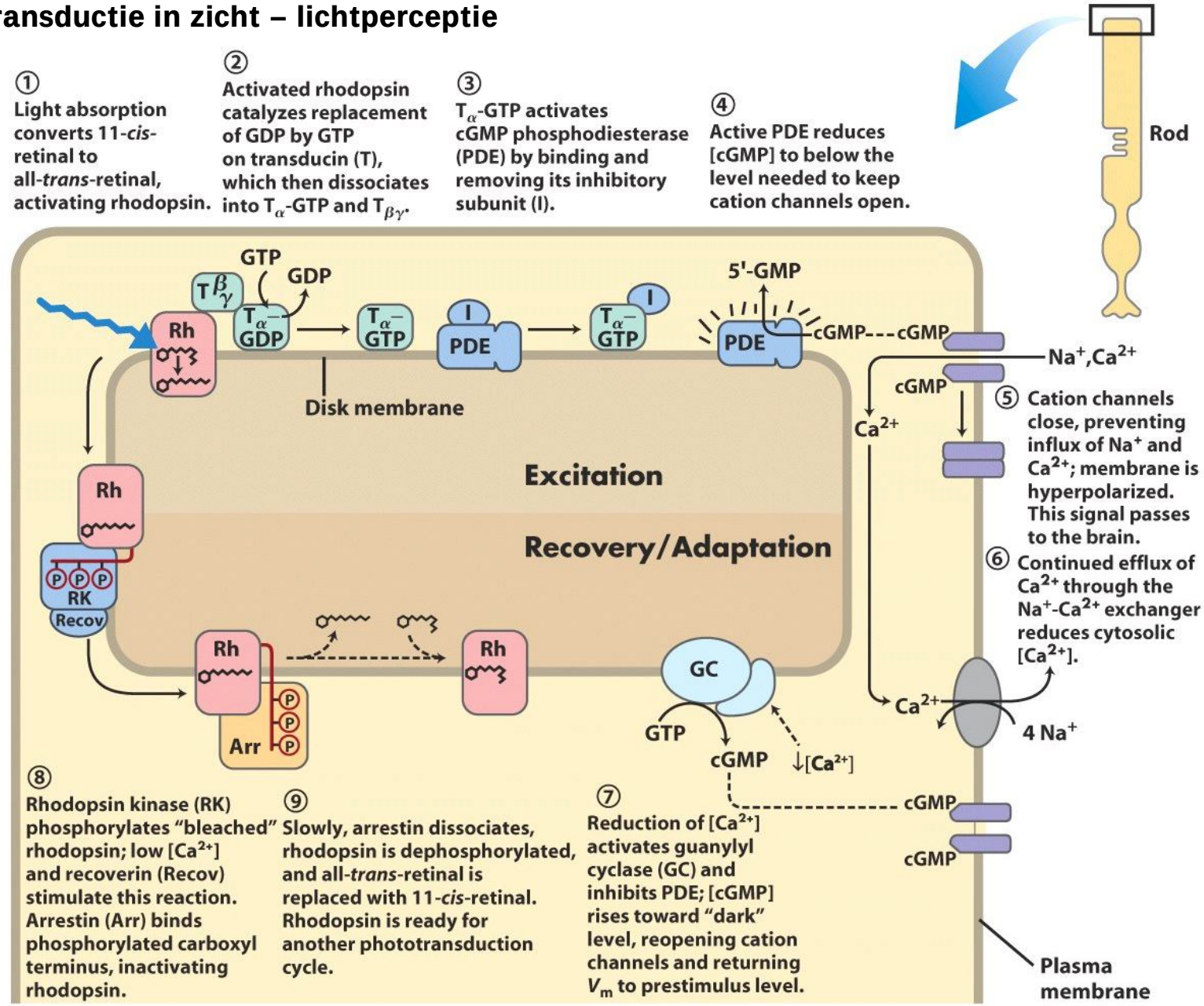
6 basale signaaltransductiemechanismen



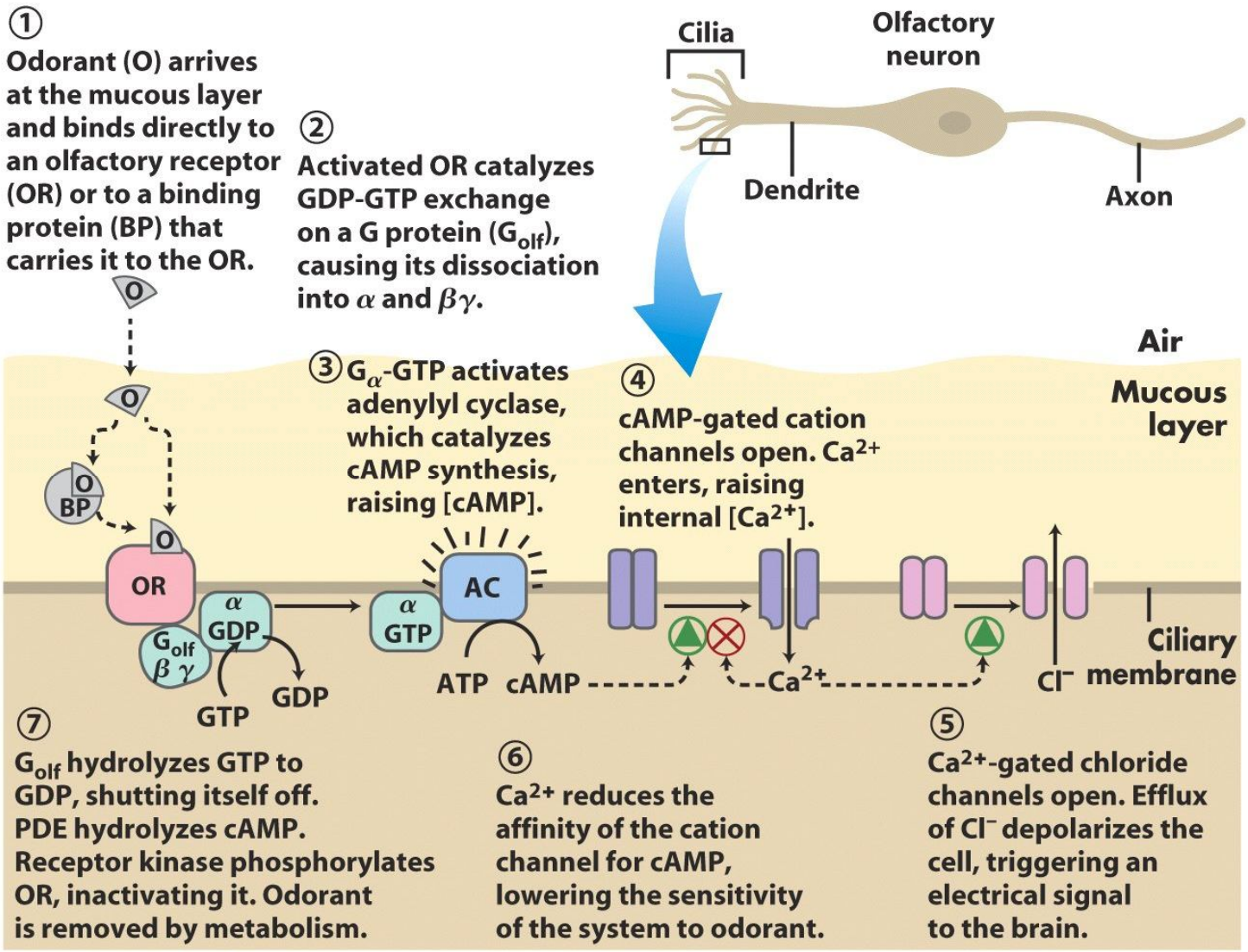
Het β-adrenerge receptor systeem gebruikt cAMP als 2e boodschapper



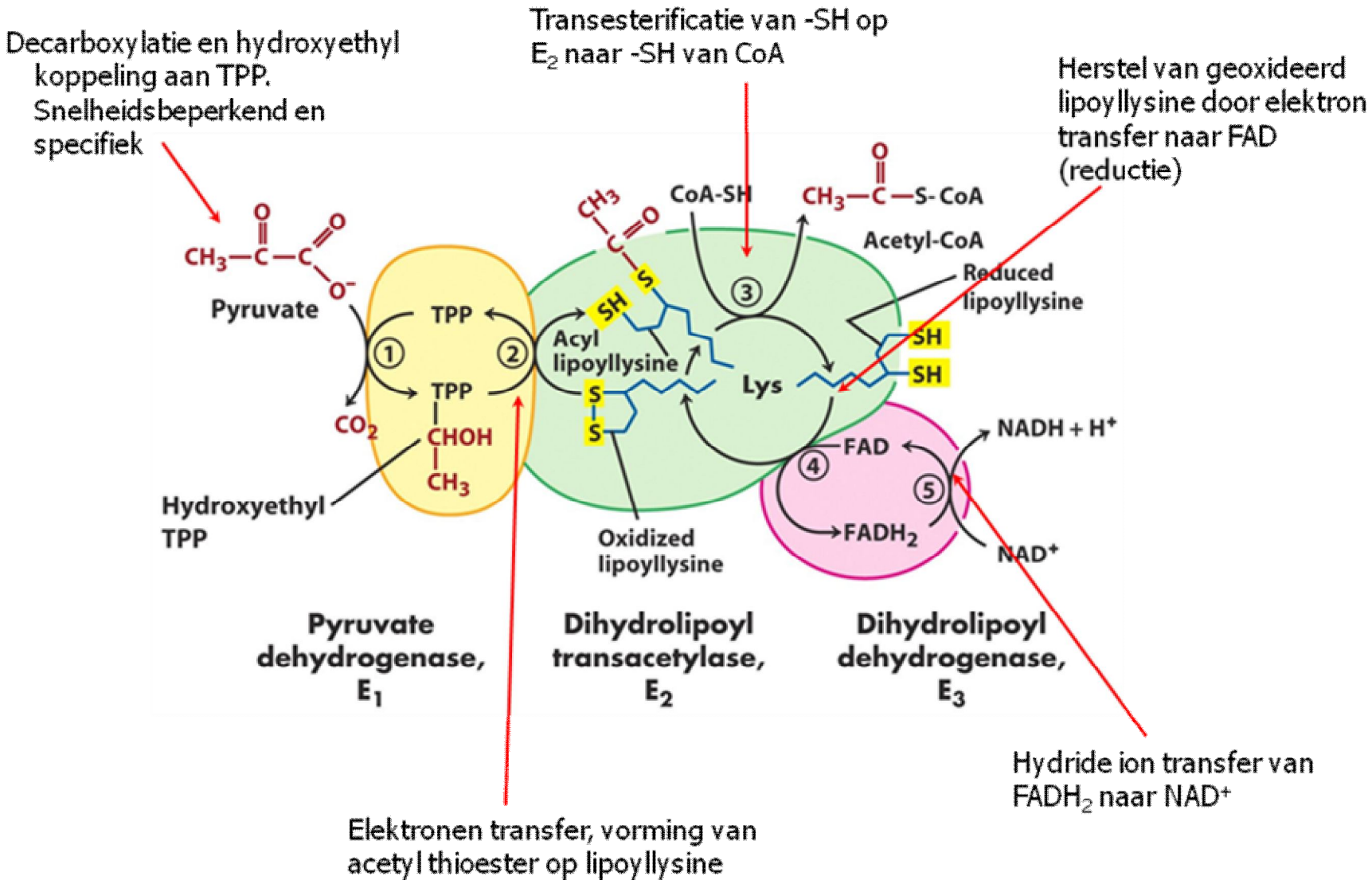
Signaaltransductie in zicht – lichtperceptie



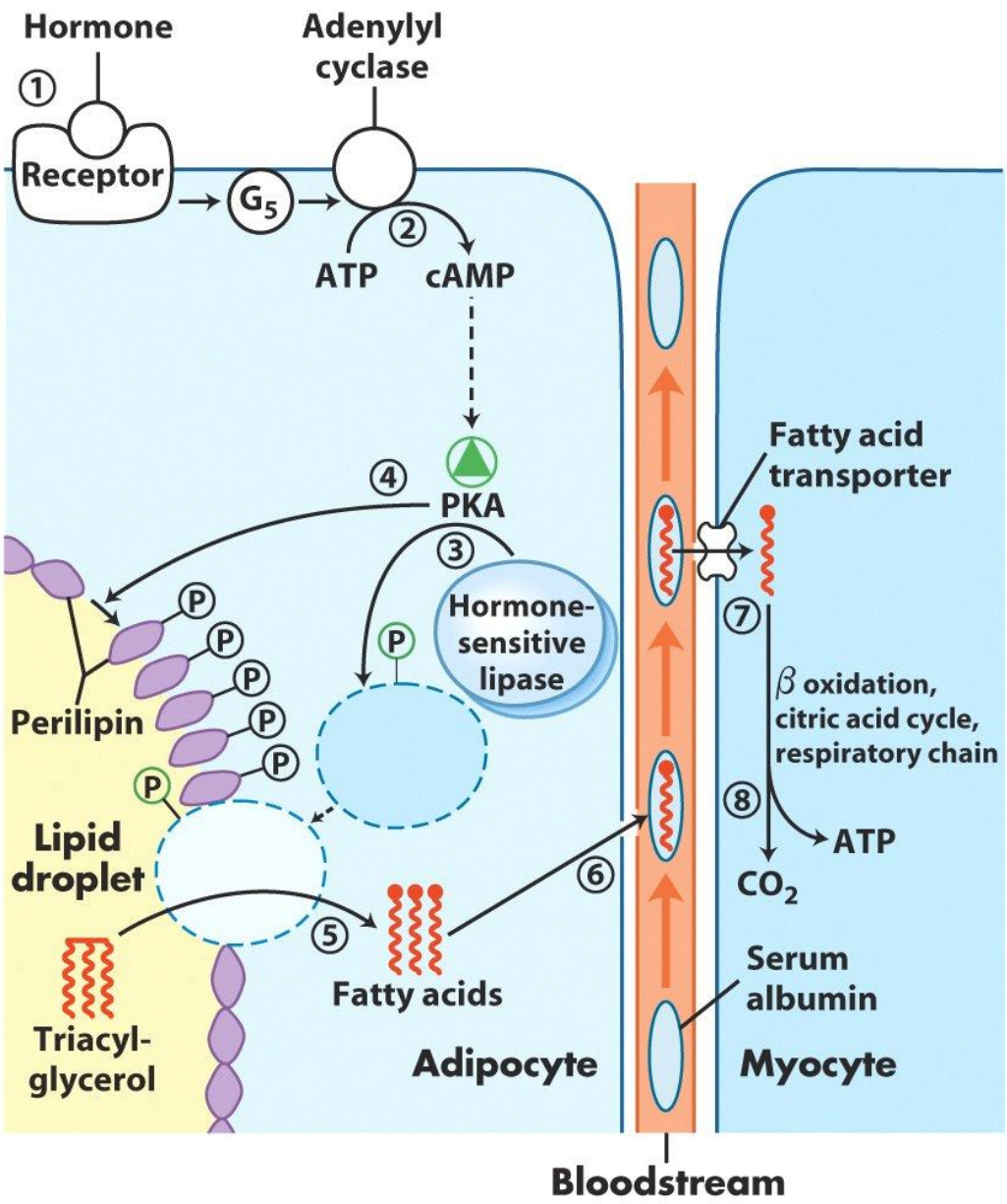
Geur en smaak in vertebraten gebruikt mechanismen vergelijkbaar met die van zicht



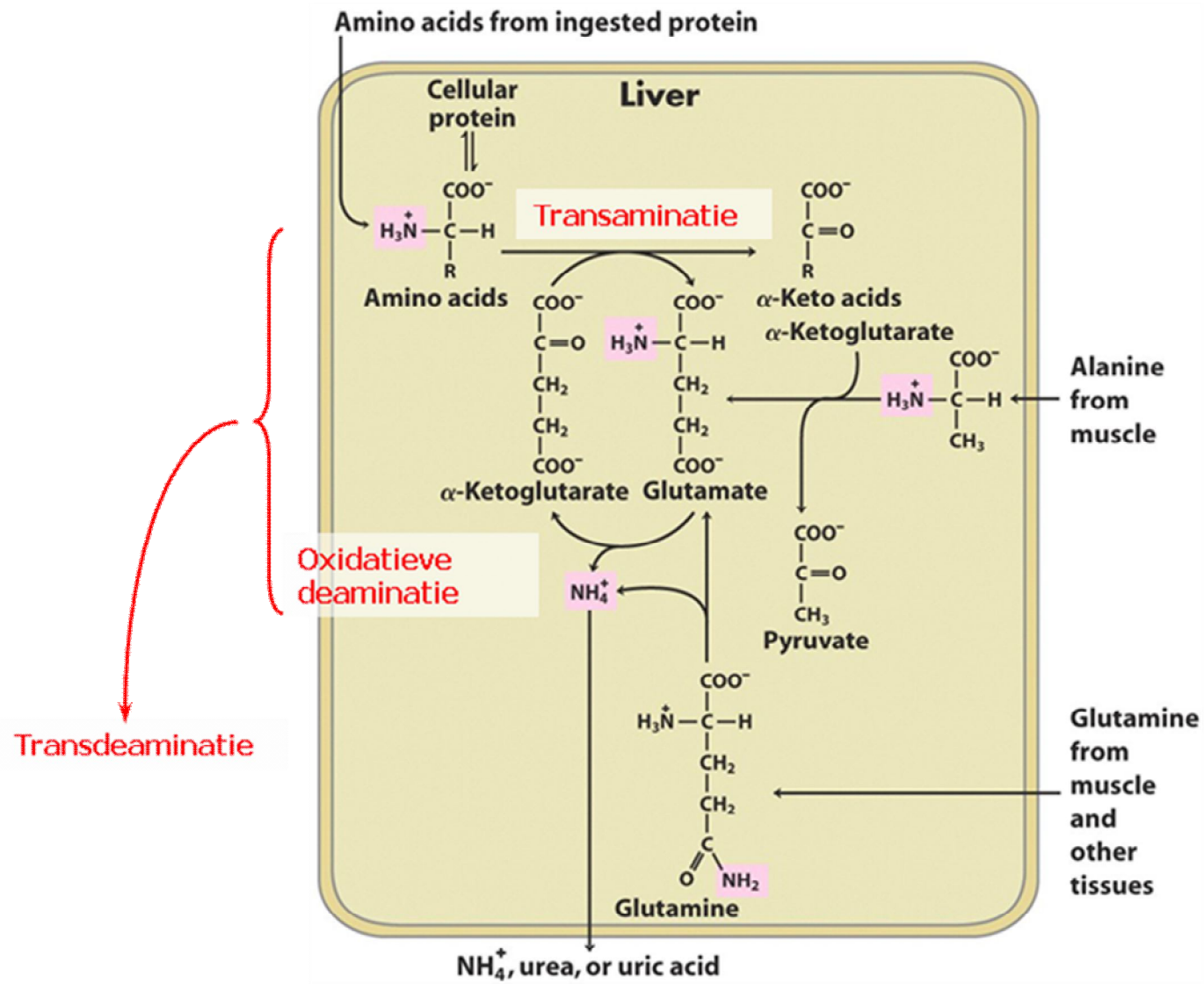
Pyruvaat dehydrogenase



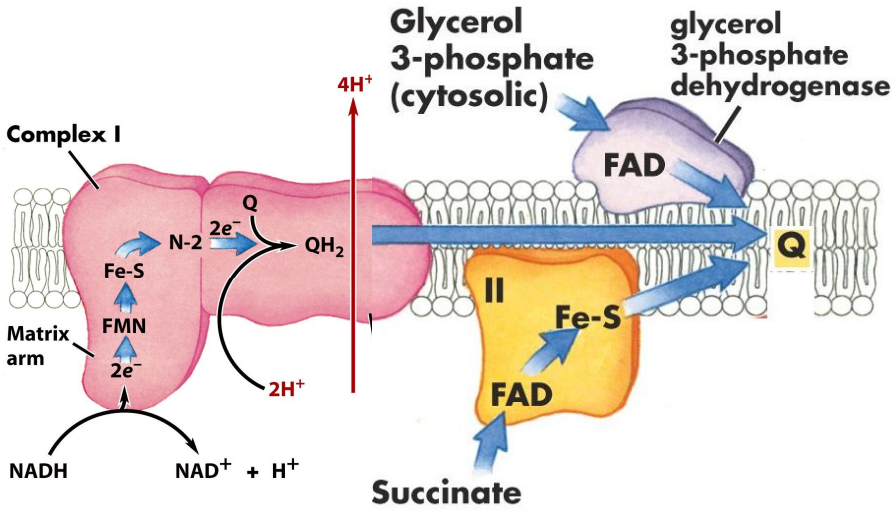
Hormonen initiëren de mobilisatie van opgeslagen triglyceriden

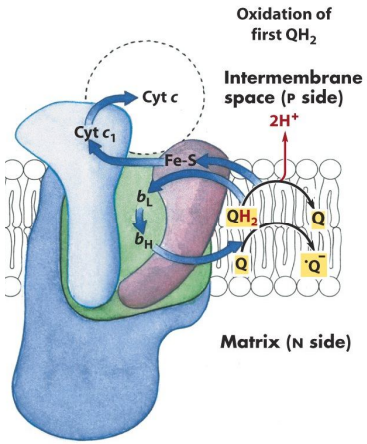


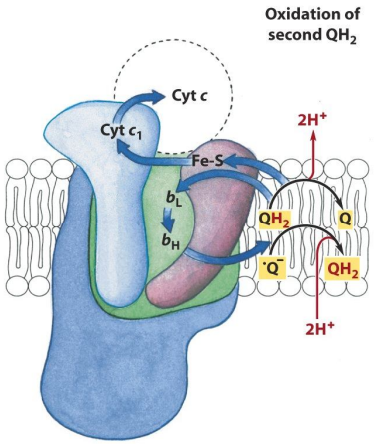
Aminozuur oxidatie en productie van urea

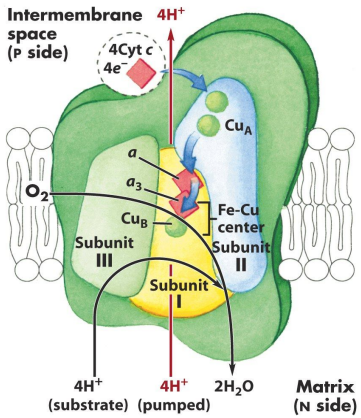


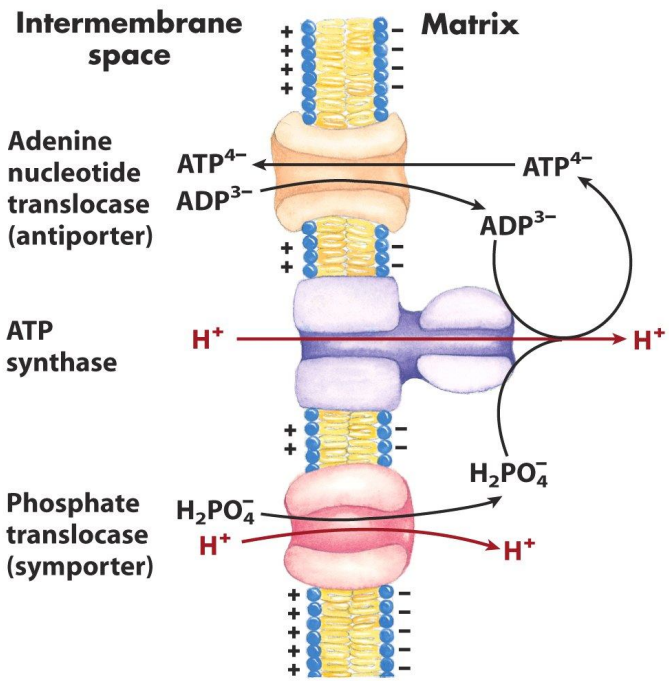
Elektronentransferreacties in mitochondriën



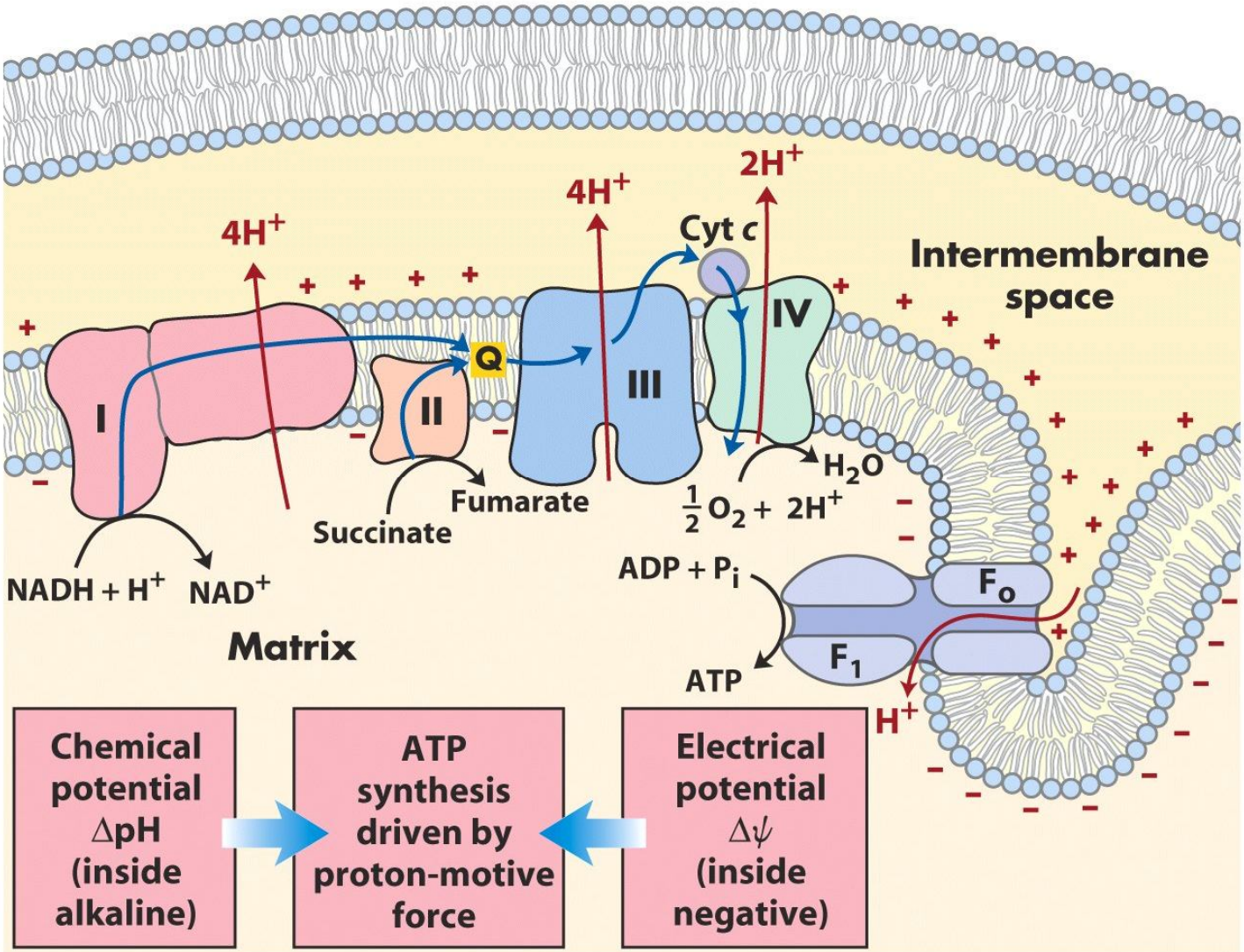




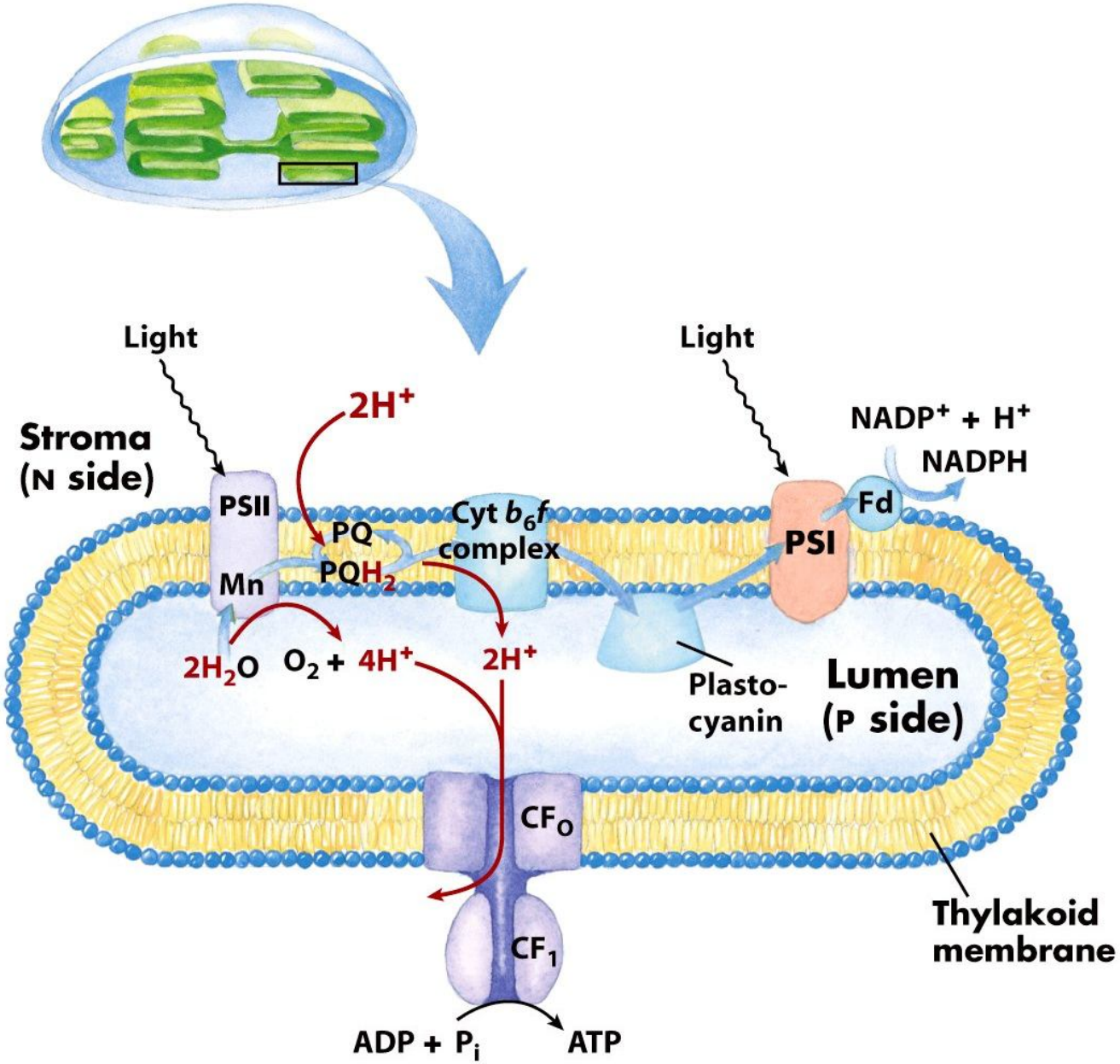
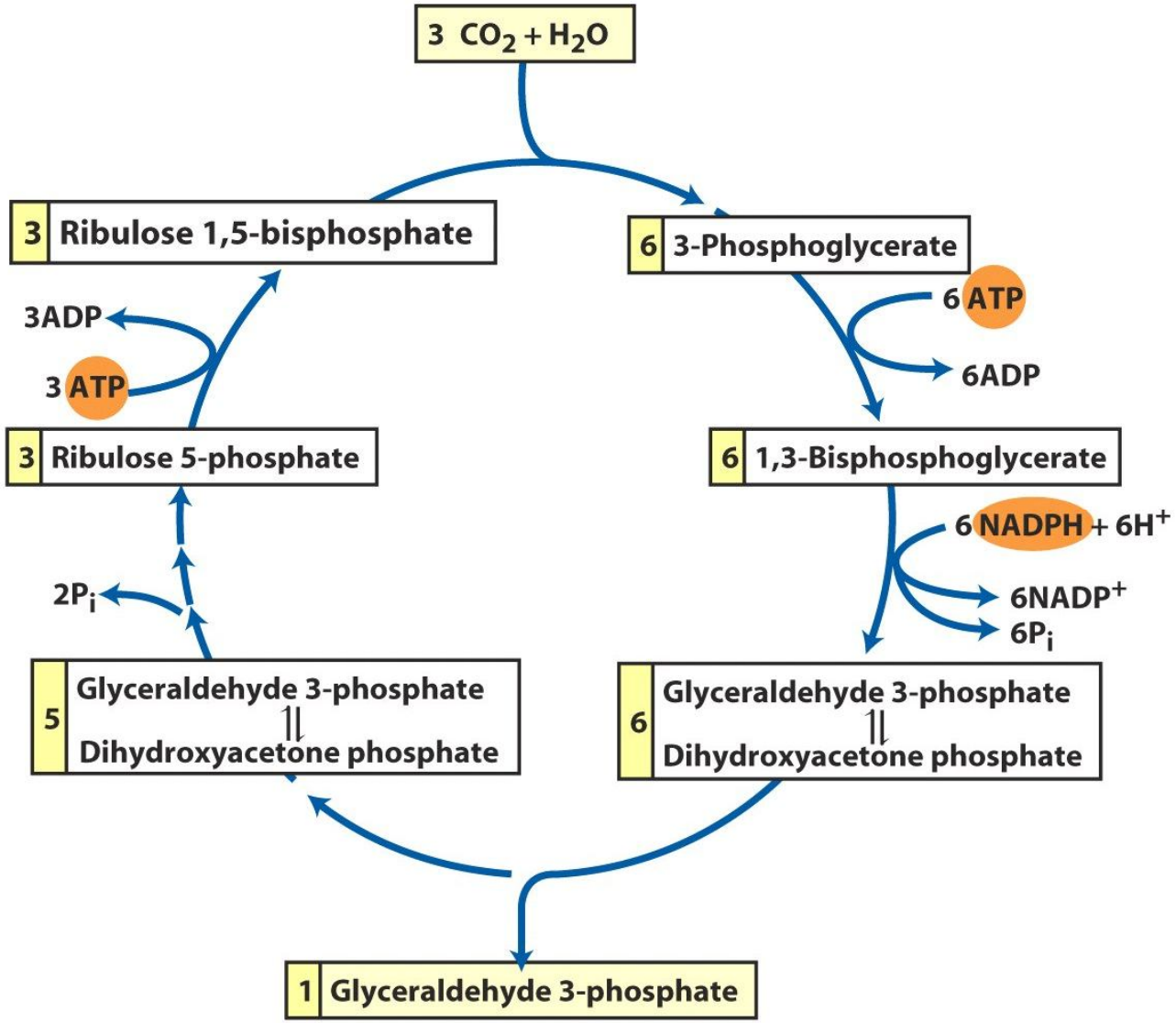




Oxidatieve fosforylering en ATP-synthese



Fotofosforylering en ATP-synthese



Calvin cyclus