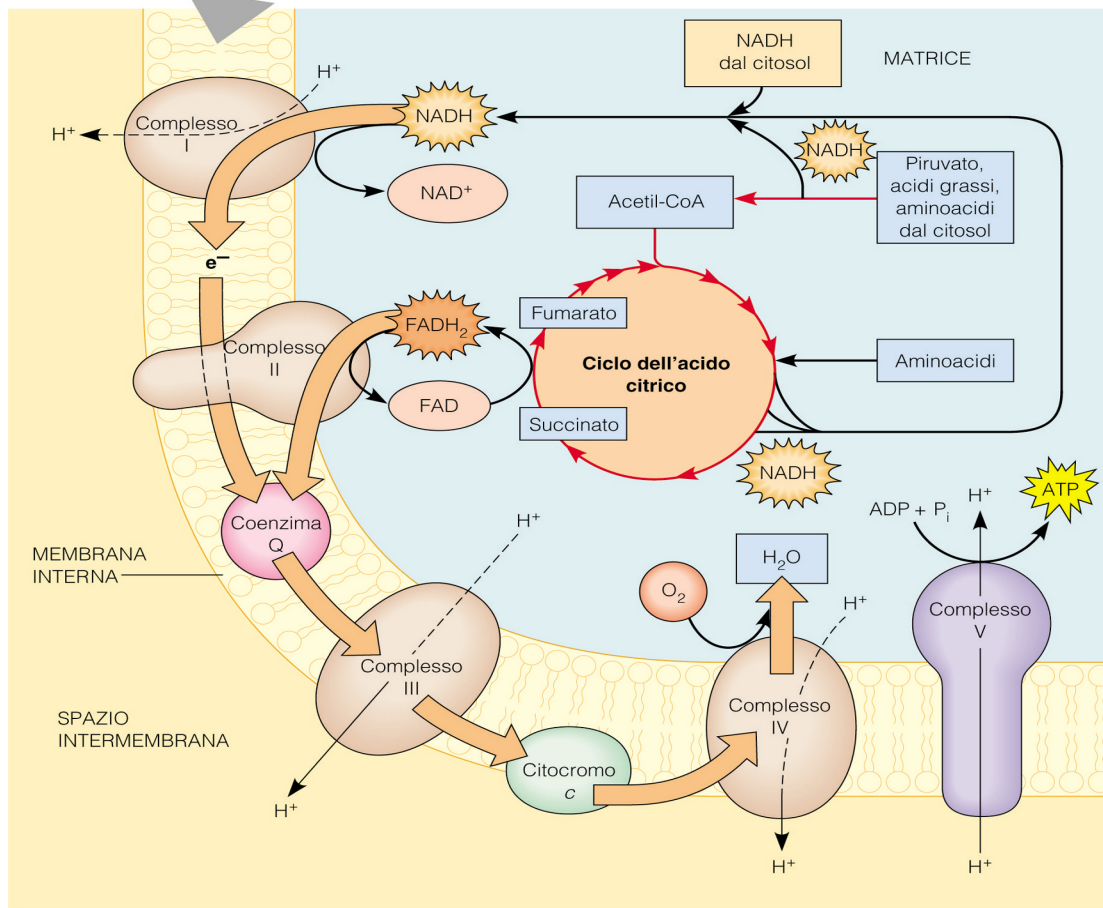
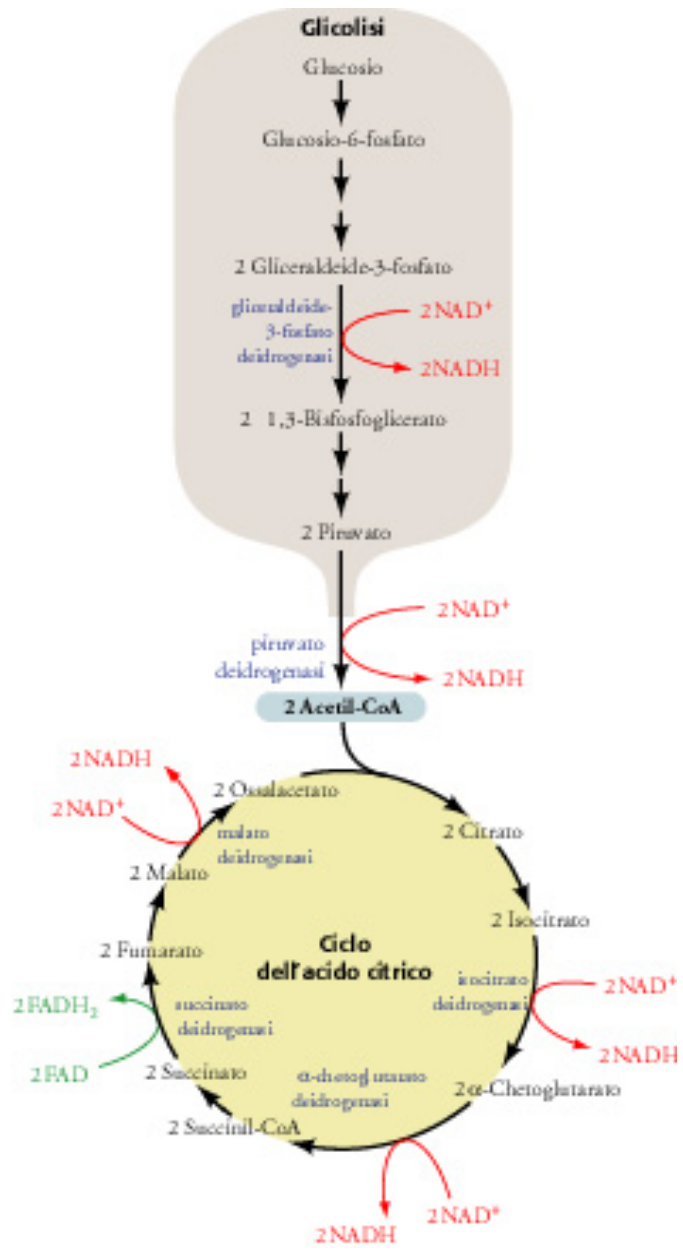


(a)



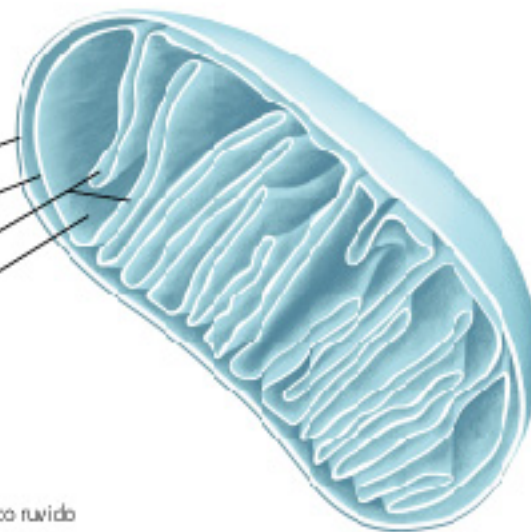
(b)



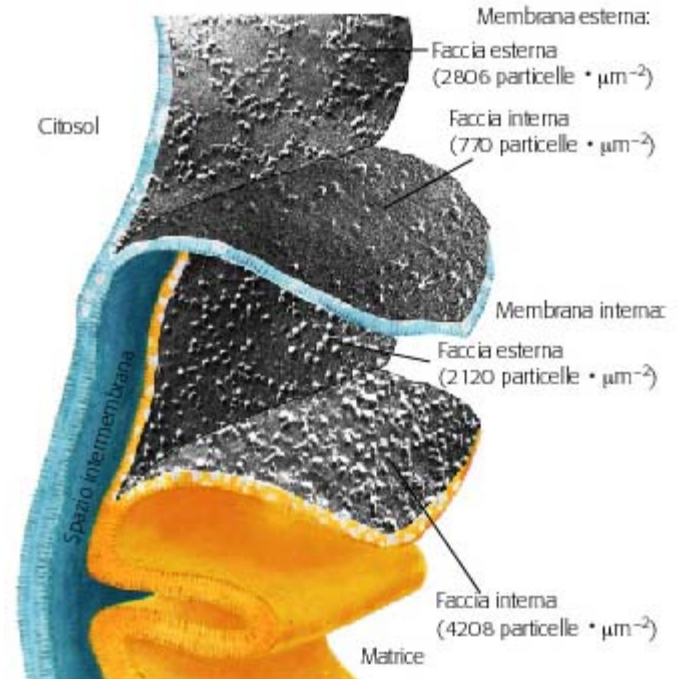


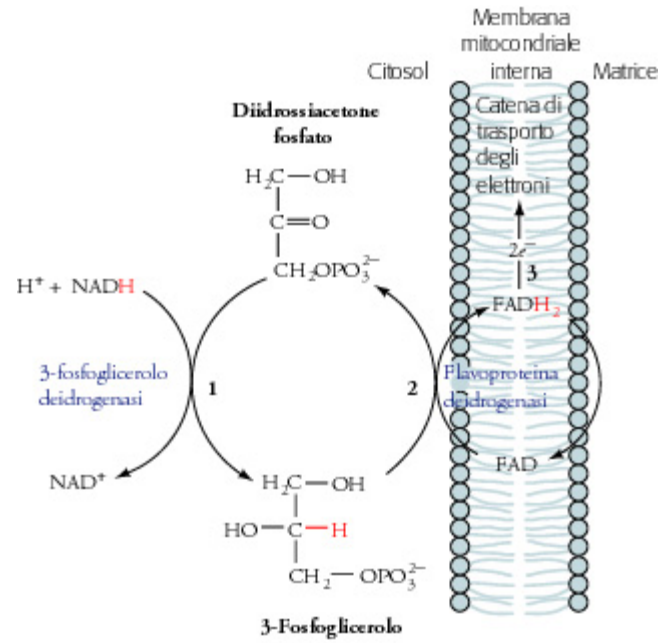
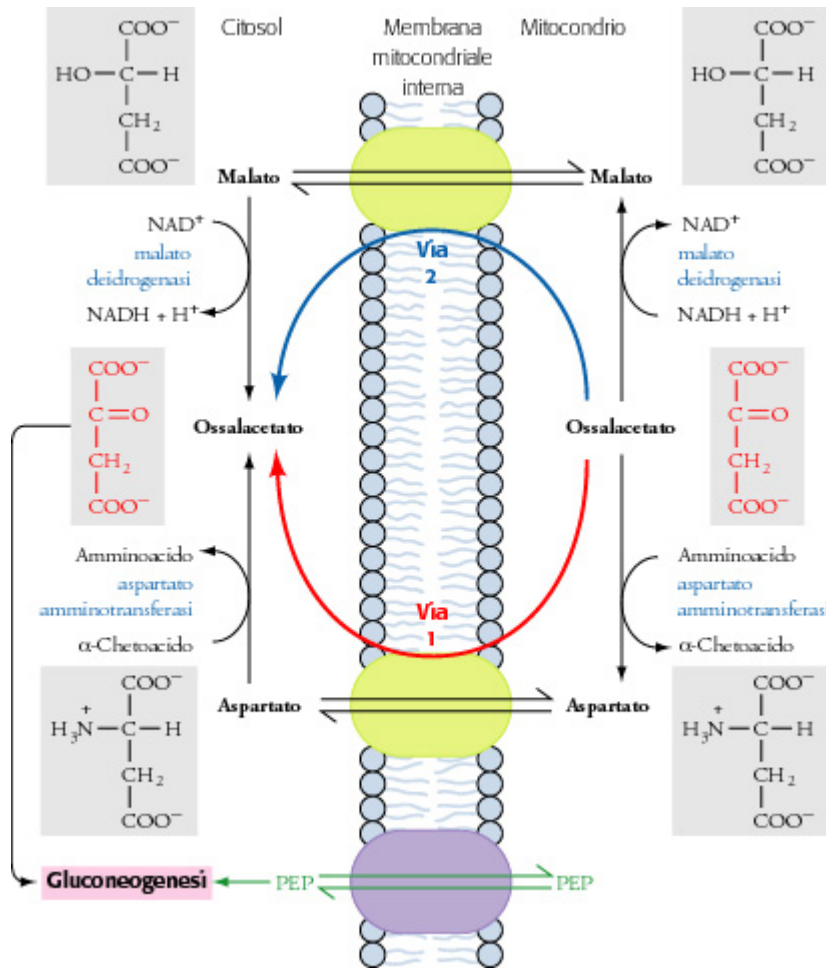
(a)

Membrana esterna  
 Membrana interna  
 Creste  
 Matrice  
 Reticolo endoplasmatico ruvido

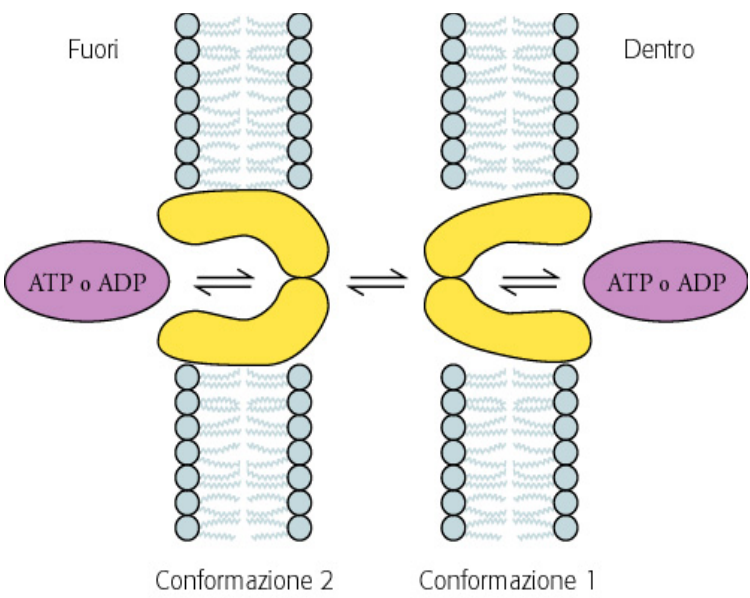


(b)





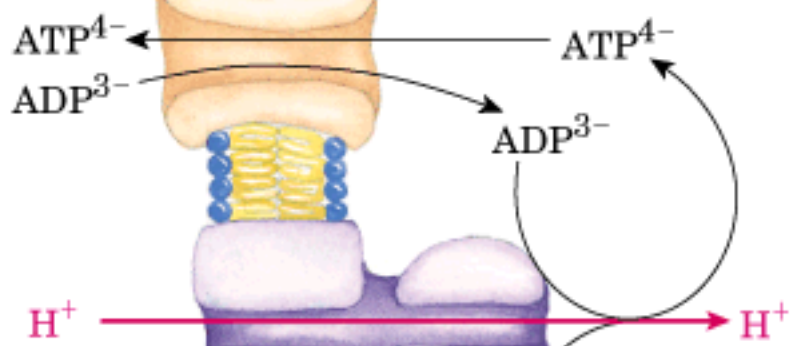




**Intermembrane space**

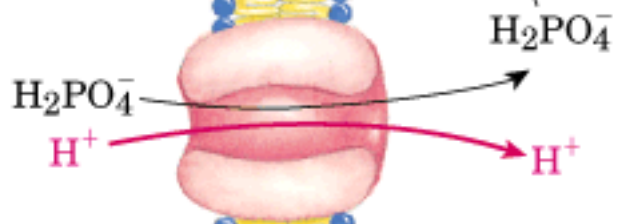
**Matrix**

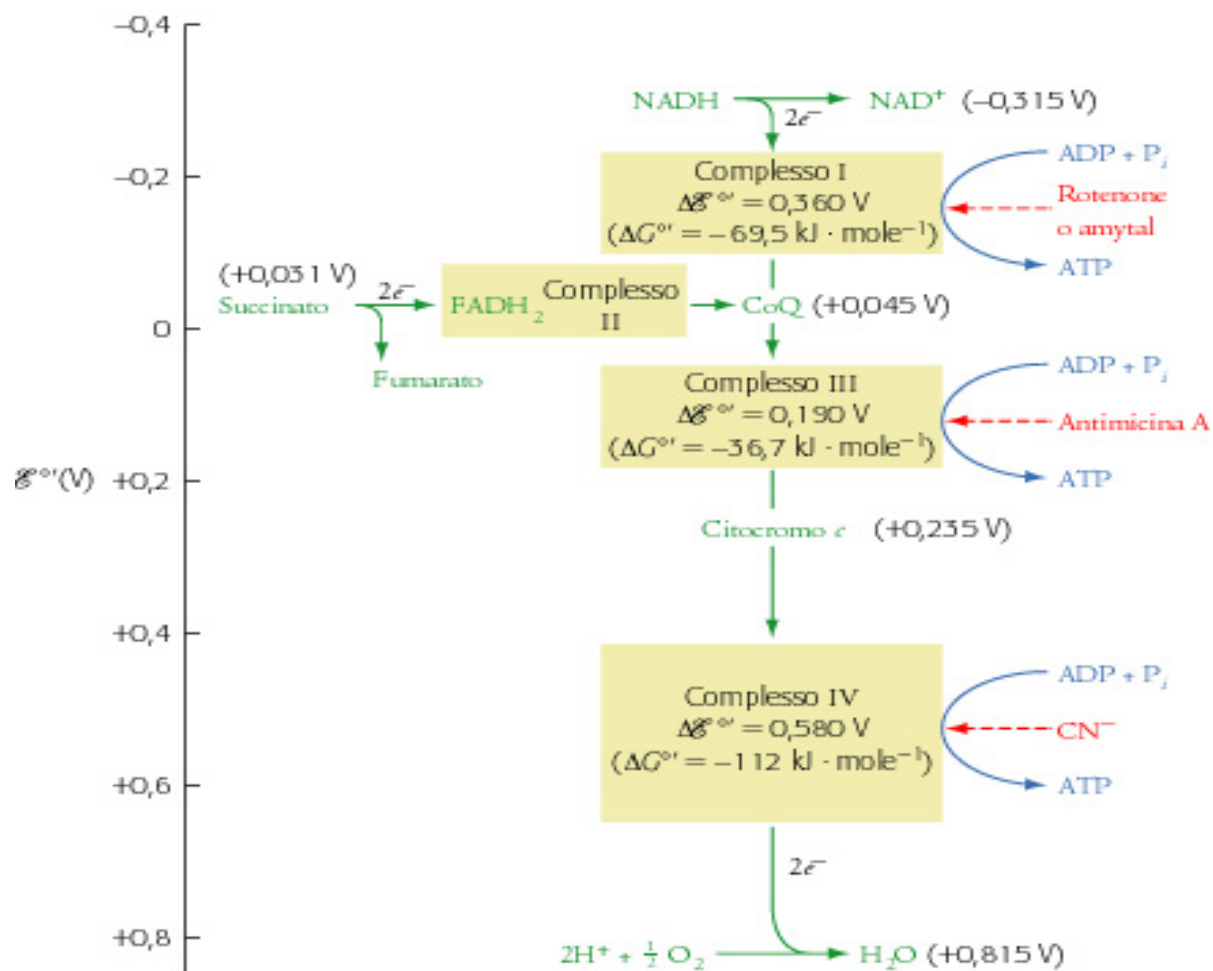
Adenine nucleotide translocase (antiporter)



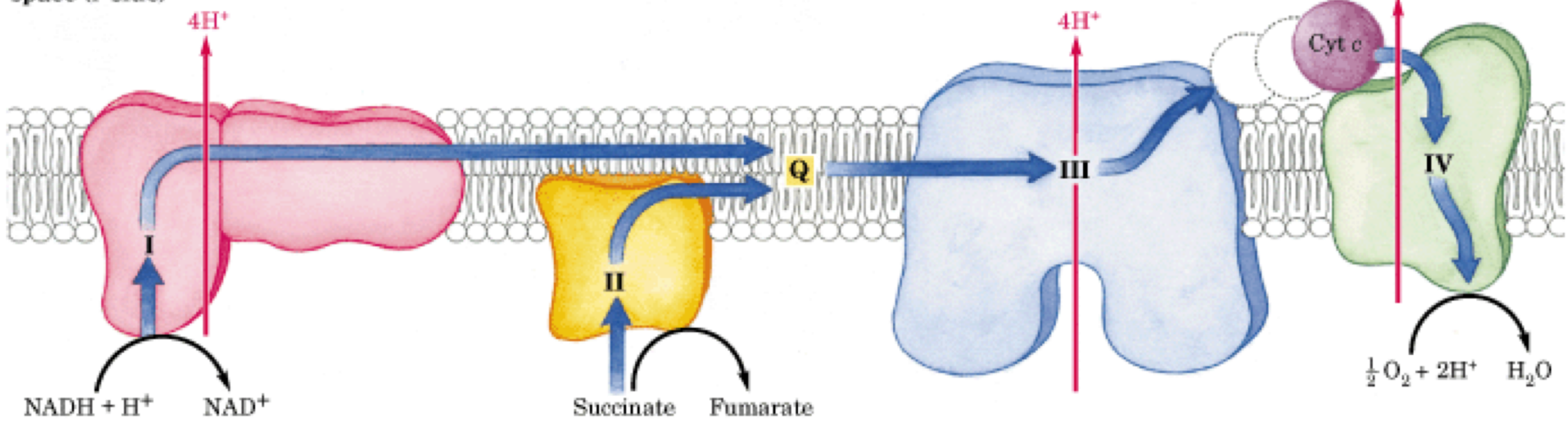
ATP synthase

Phosphate translocase (symporter)

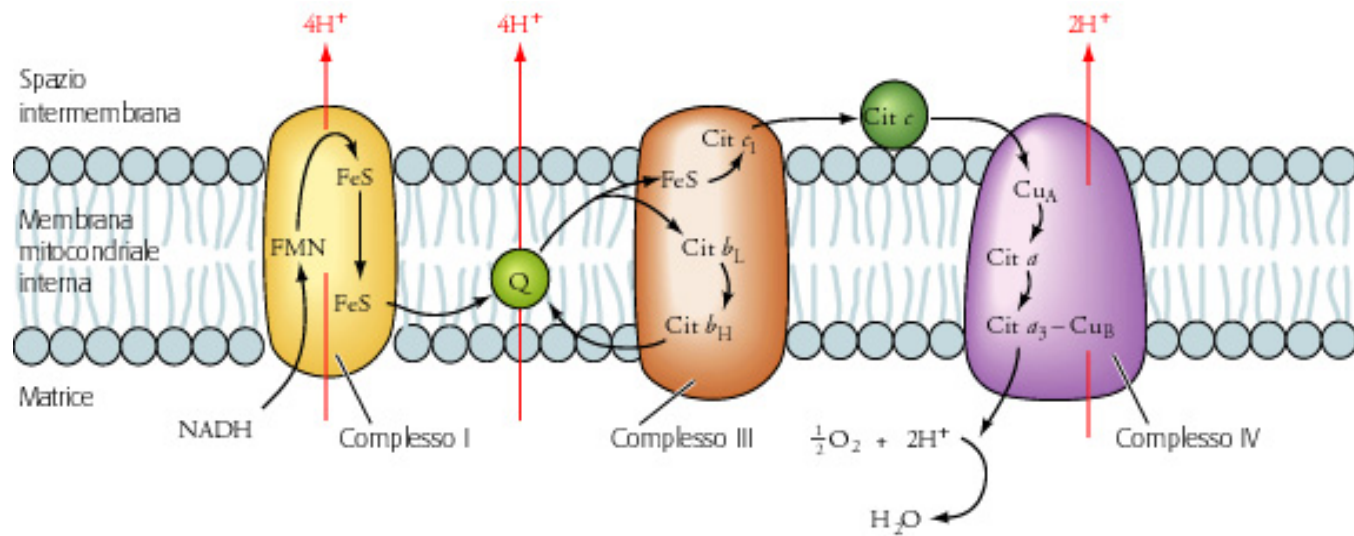




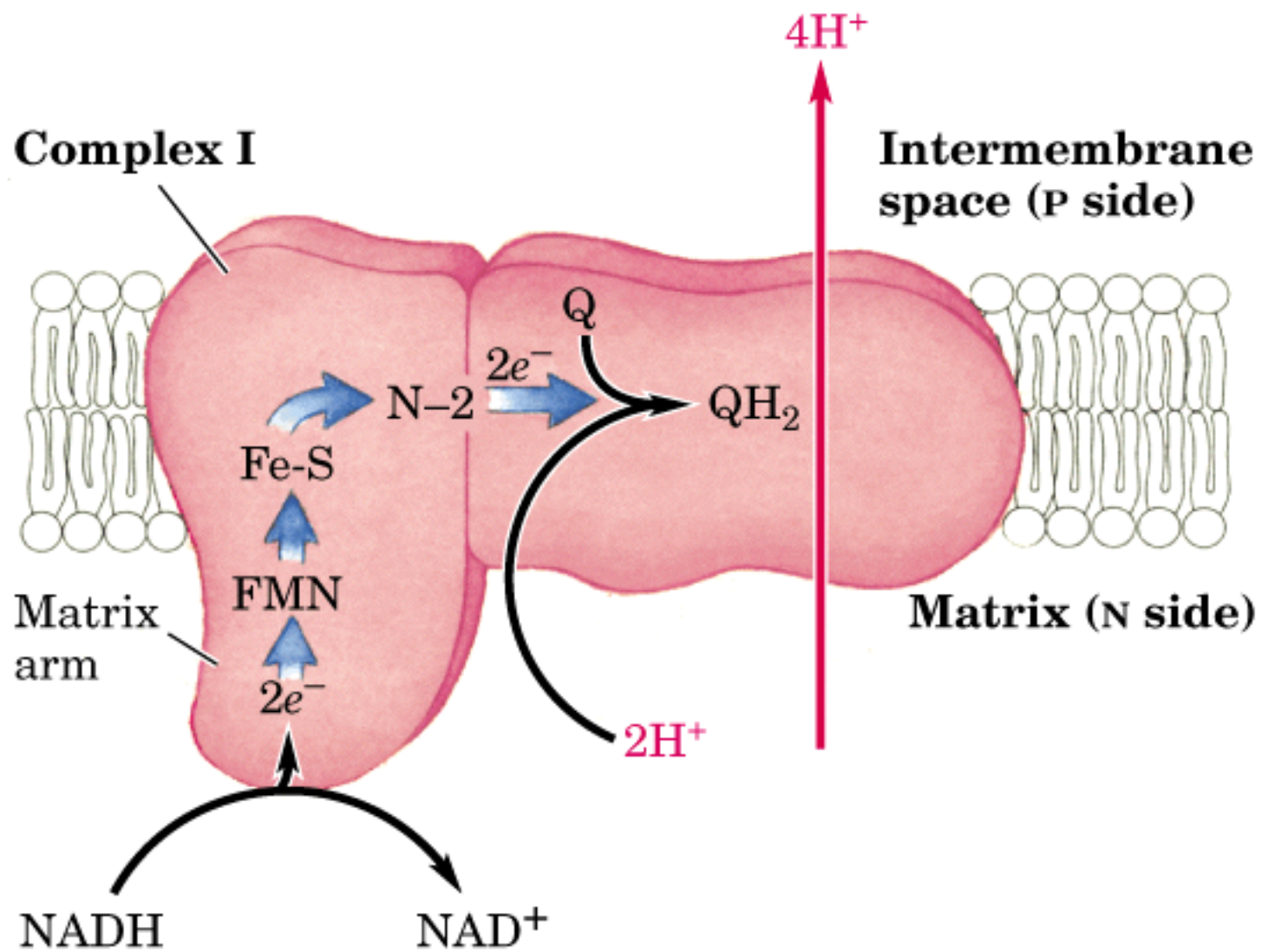
Intermembrane space (P side)

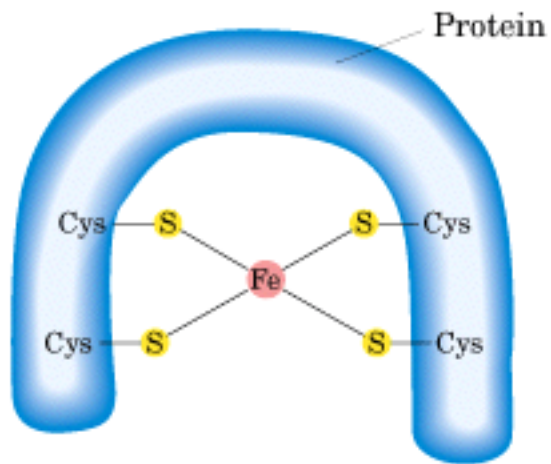
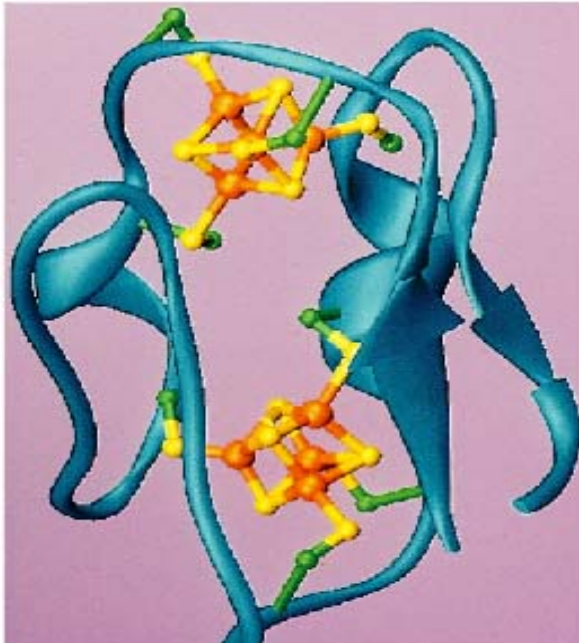


Matrix (N side)

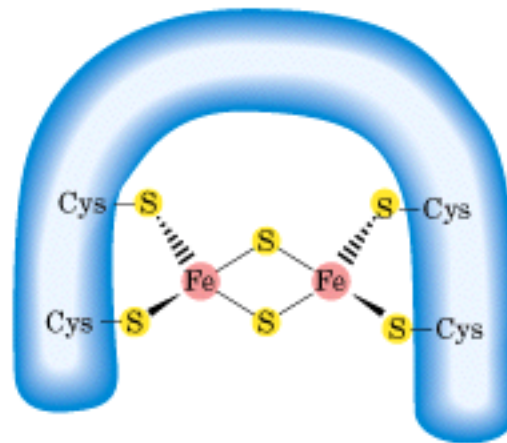




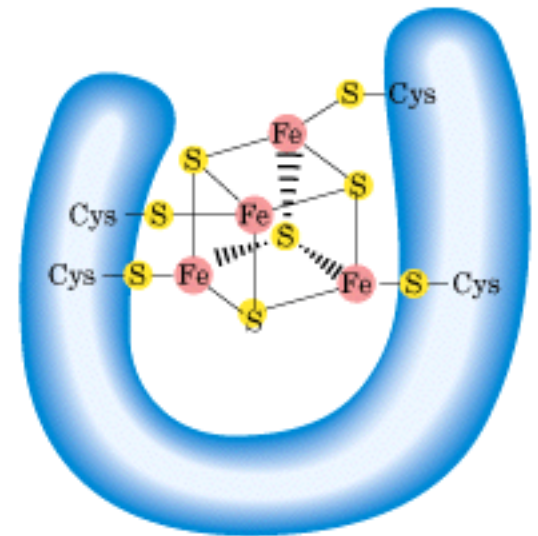




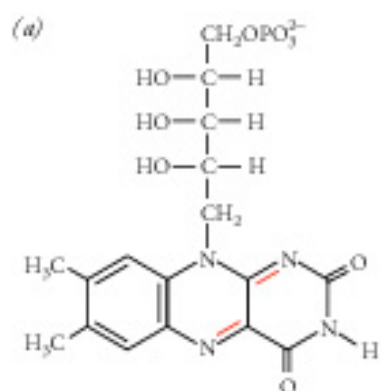
(a)



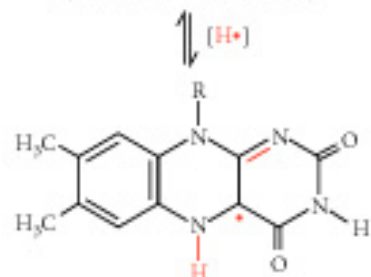
(b)



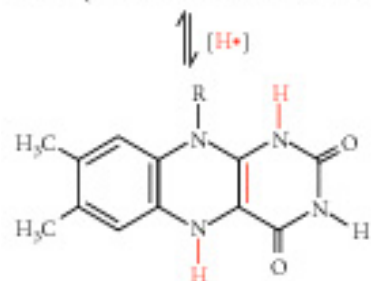
(c)



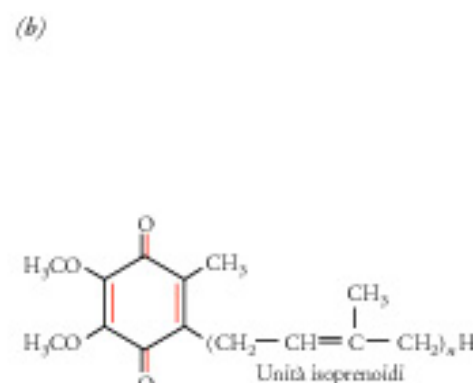
**Flavin mononucleotide (FMN)**  
(forma ossidata o chinonica)



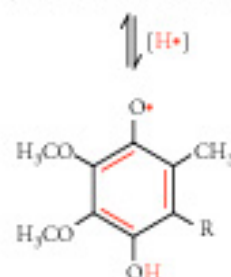
**FMNH• (forma radicalica o semichinonica)**



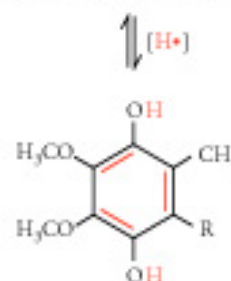
**FMNH<sub>2</sub> (forma ridotta o idrochinonica)**



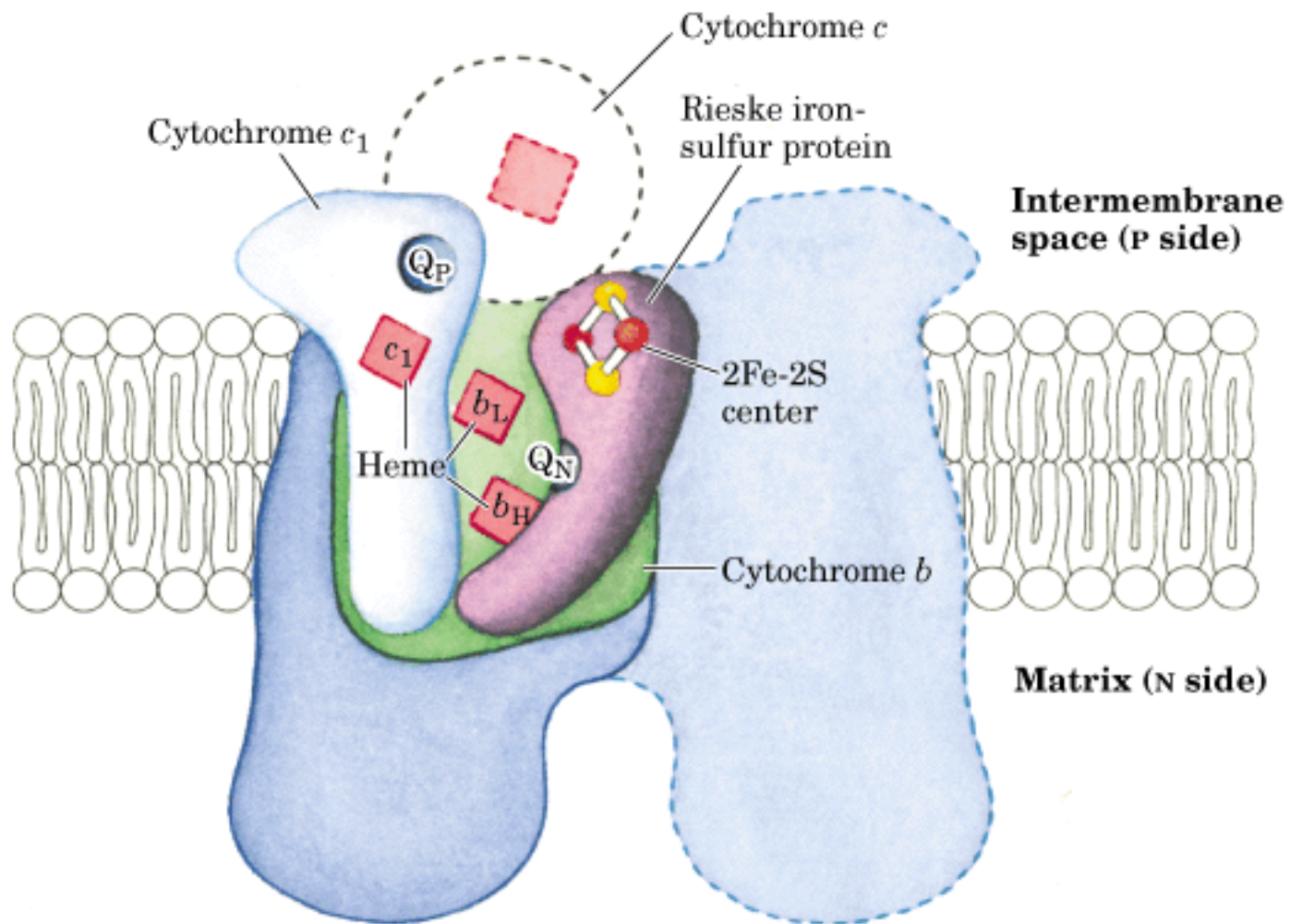
**Coenzima Q (CoQ) o ubichinone**  
(forma ossidata o chinonica)



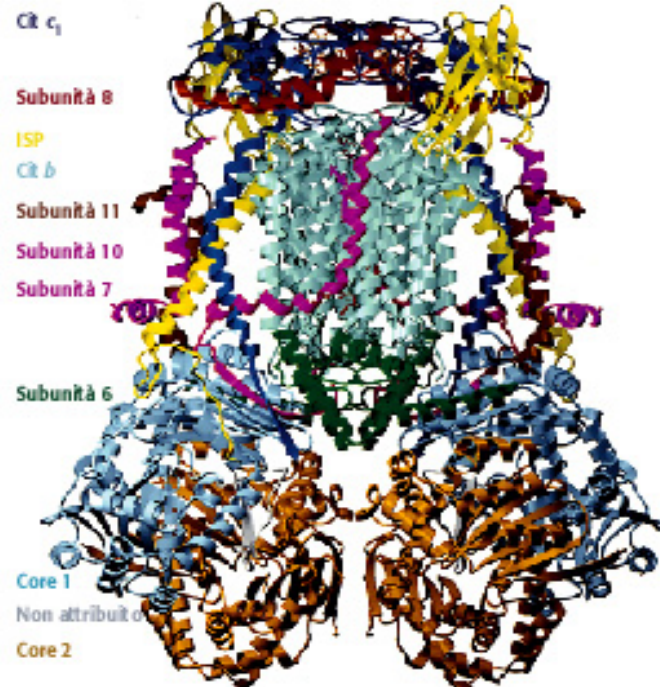
**Coenzima QH• o ubichinone**  
(forma radicalica o semichinonica)



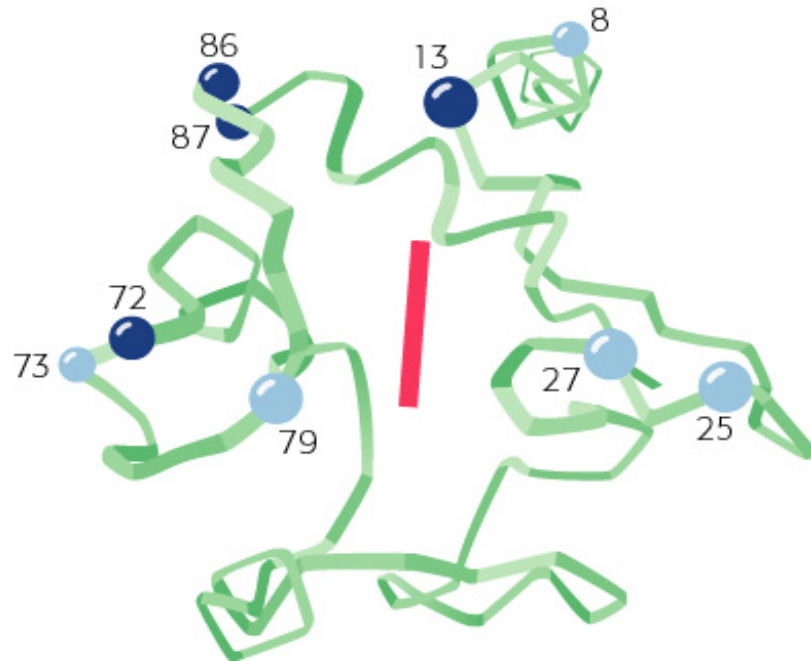
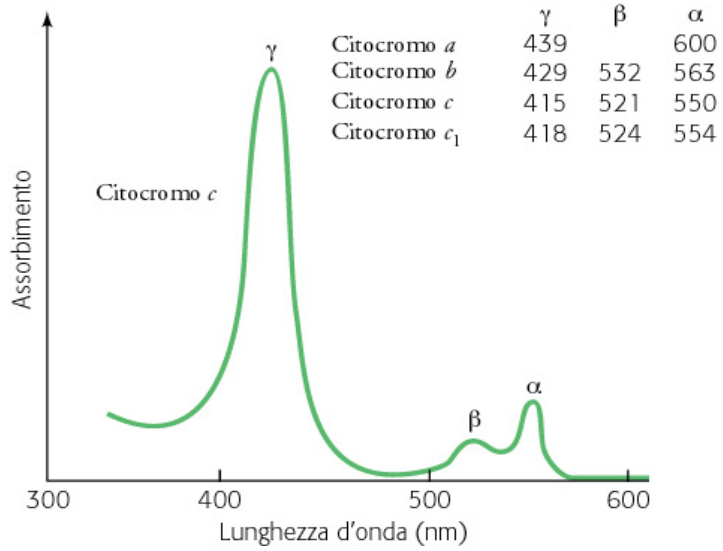
**Coenzima QH<sub>2</sub> o ubichinolo**  
(forma ridotta o idrochinonica)

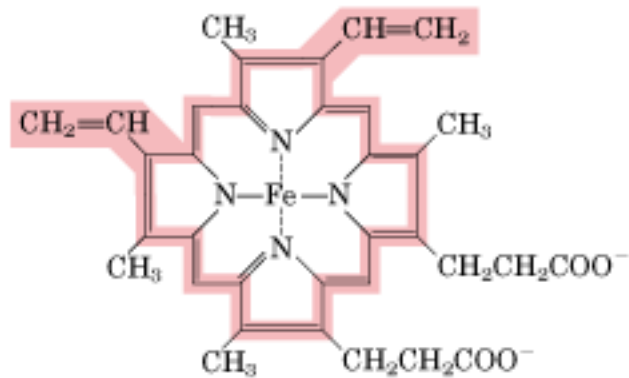


(b)

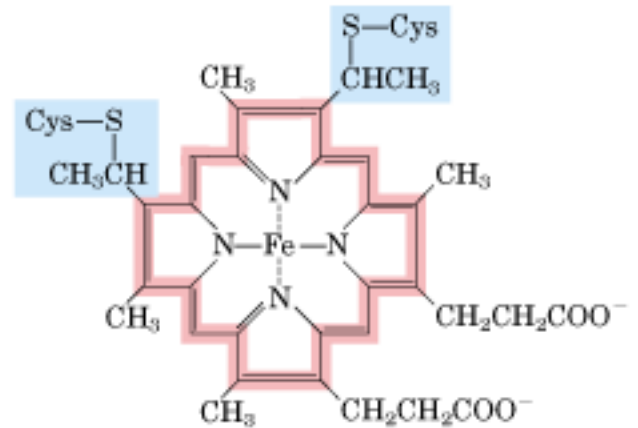




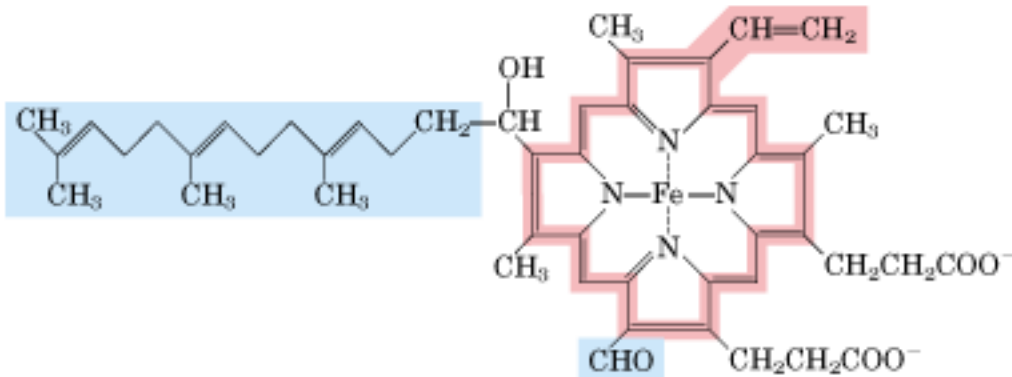




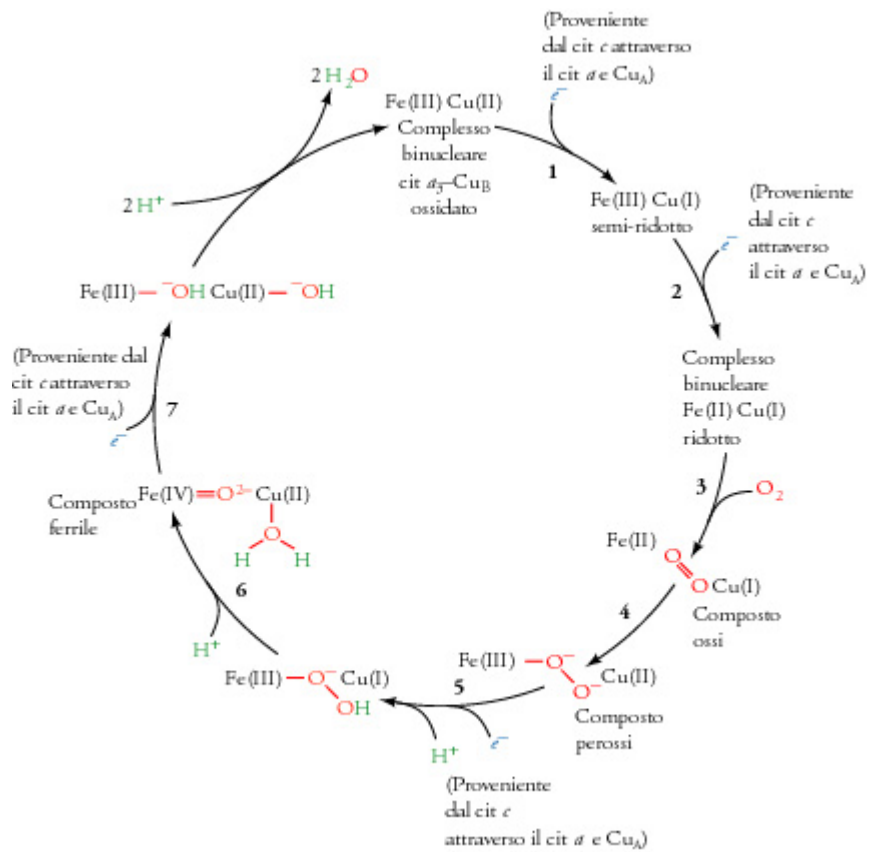
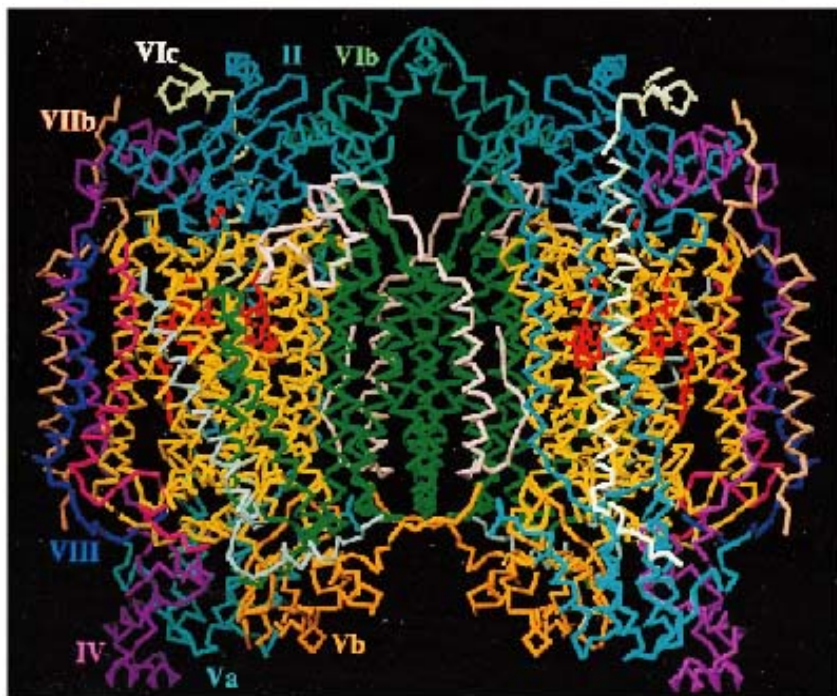
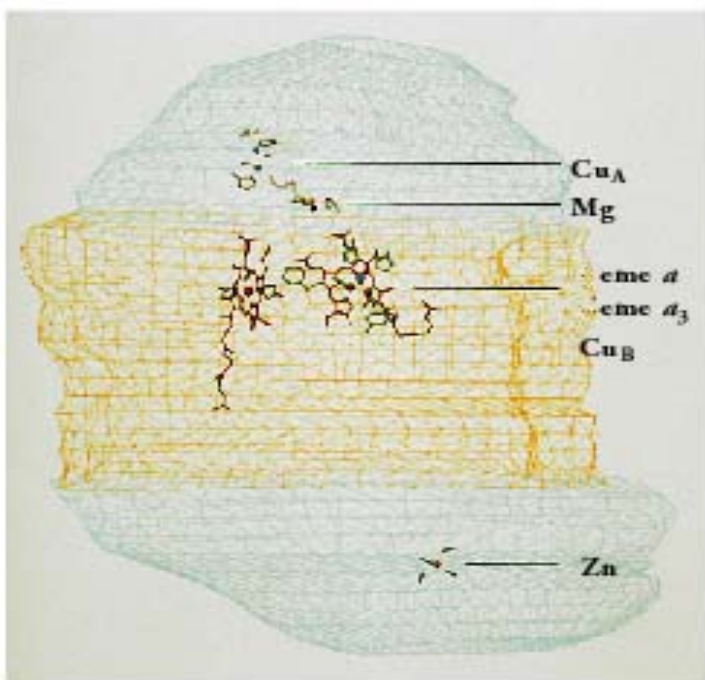
Iron protoporphyrin IX  
(in *b*-type cytochromes)

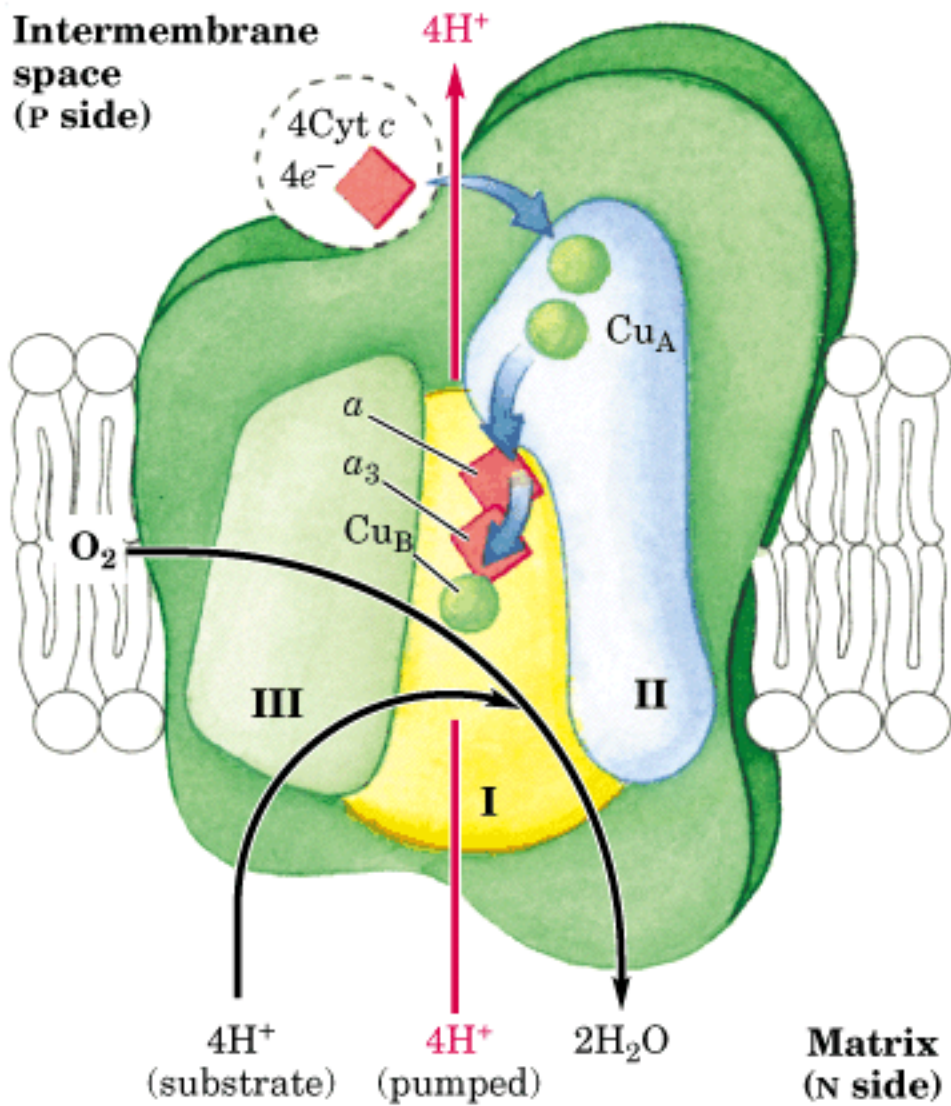


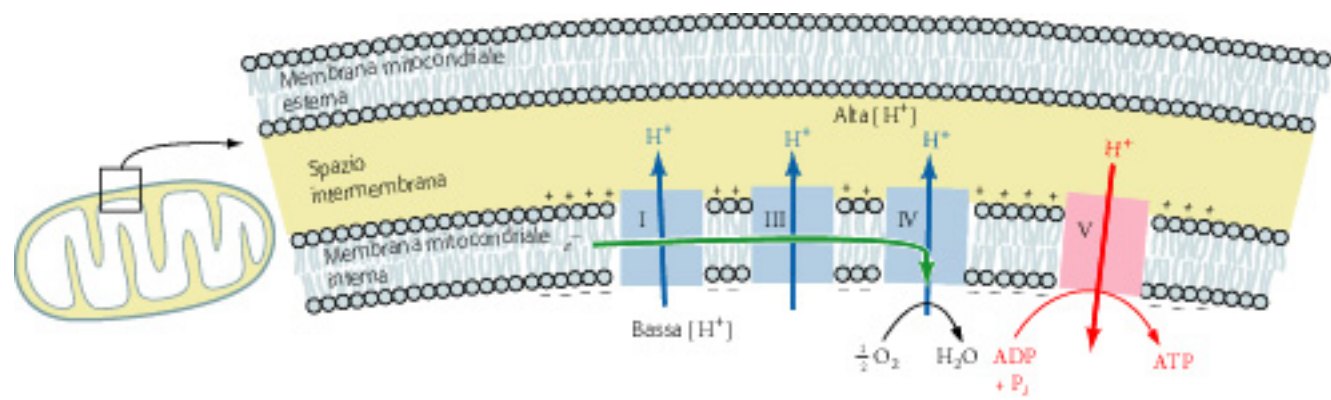
Heme C  
(in *c*-type cytochromes)



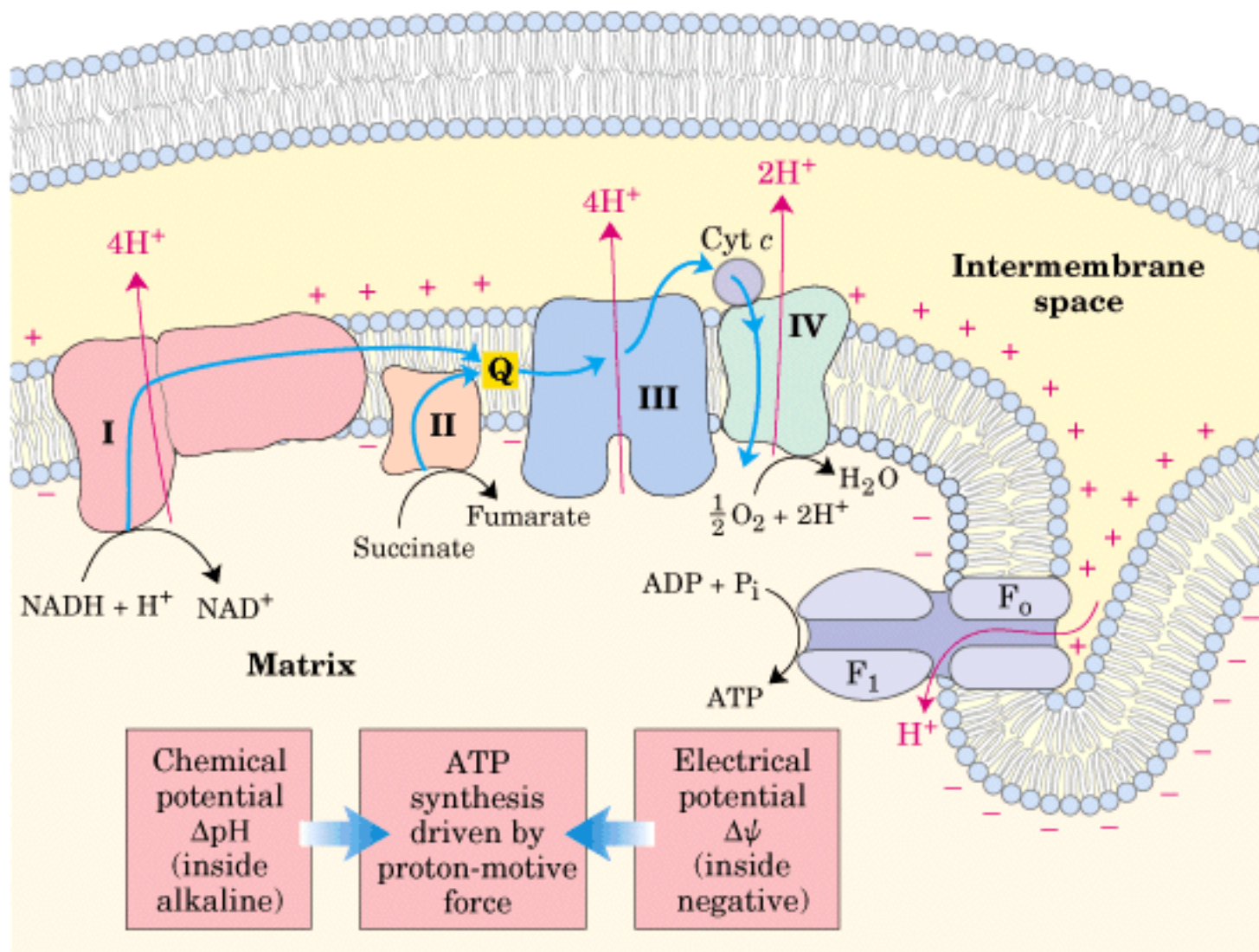
Heme A  
(in *a*-type cytochromes)

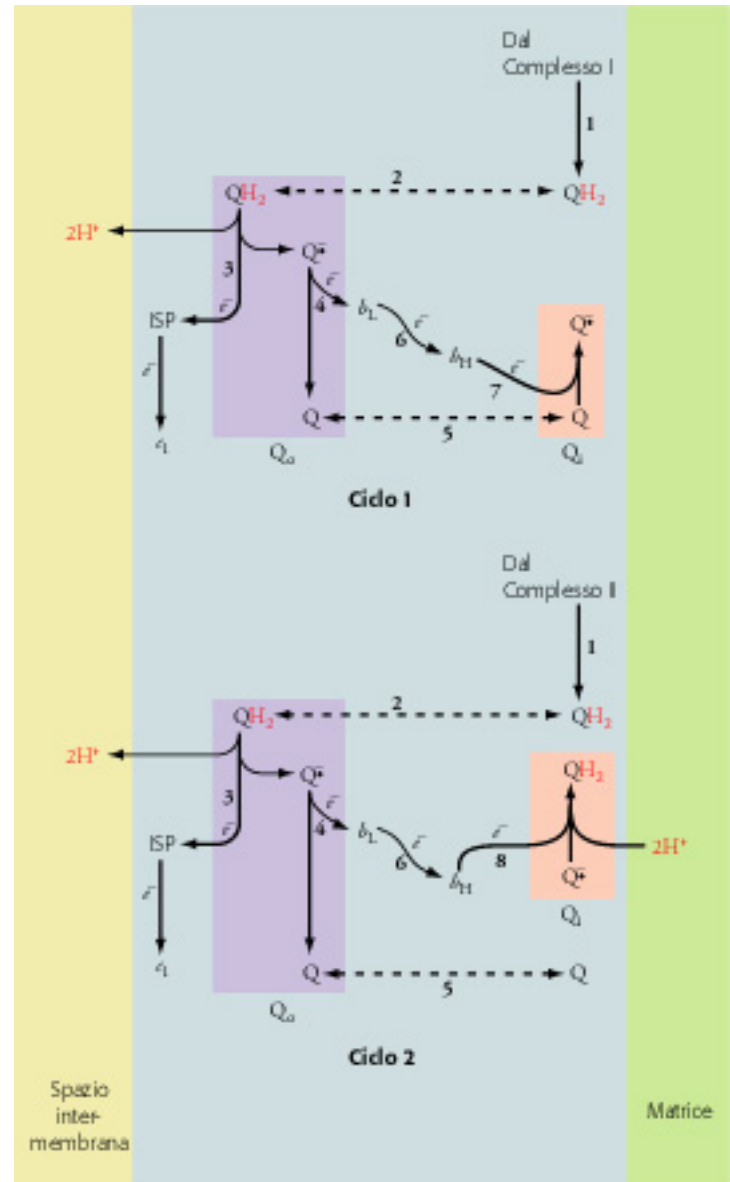
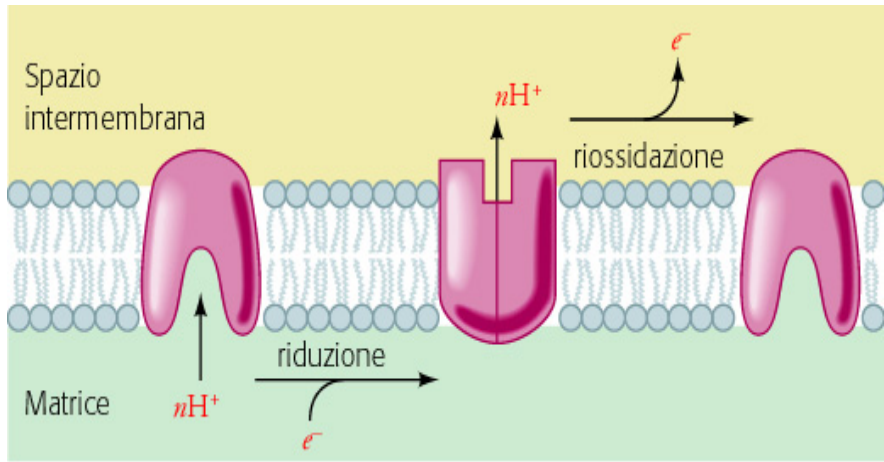


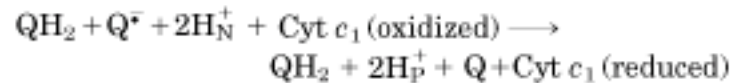
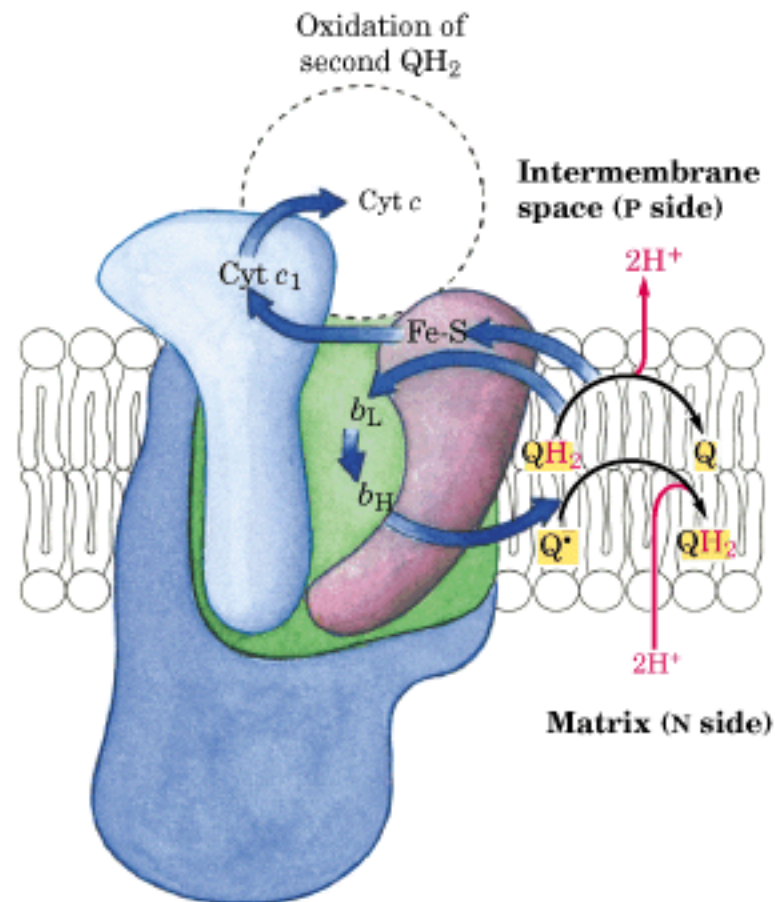
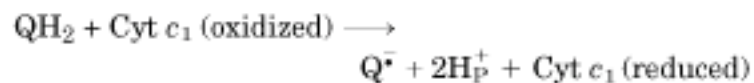
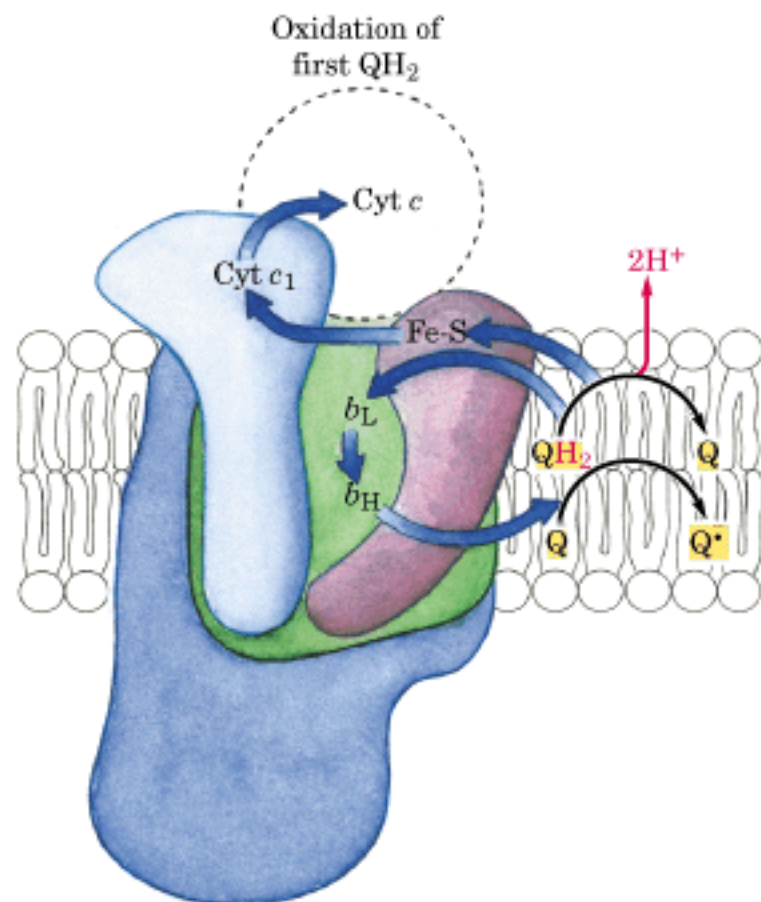




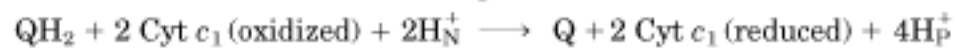








Net equation:

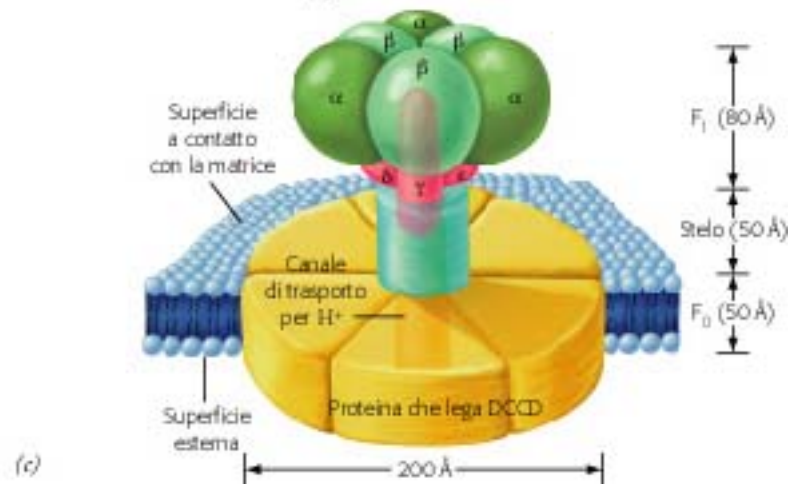




(a)



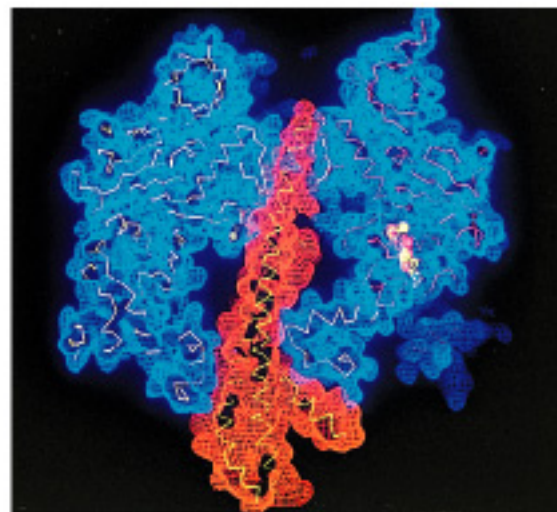
(b)



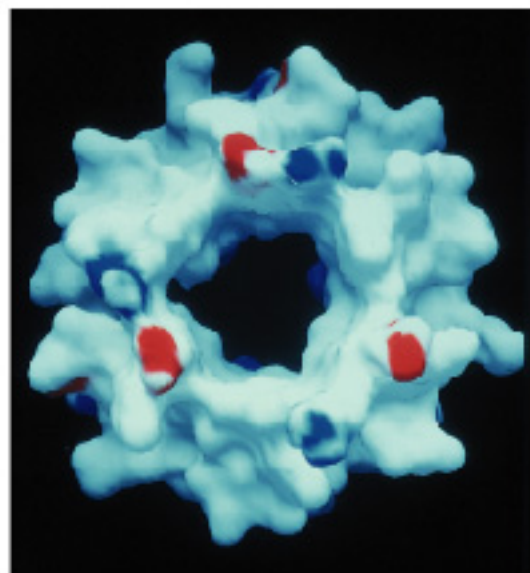




(a)

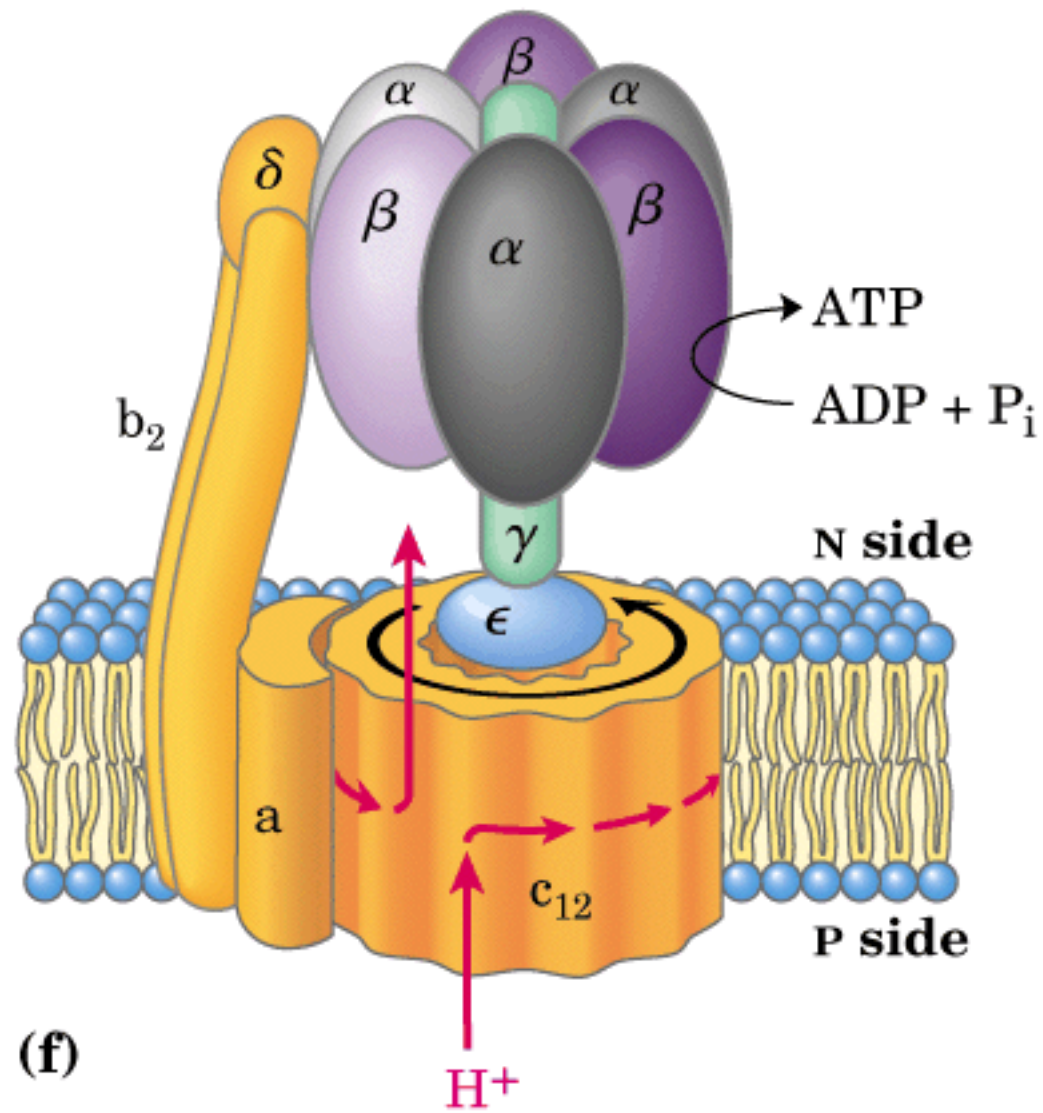


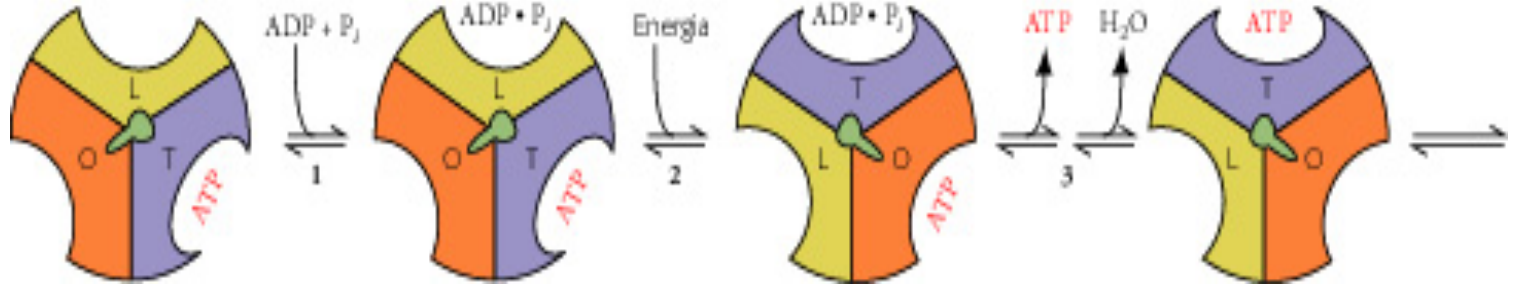
(b)

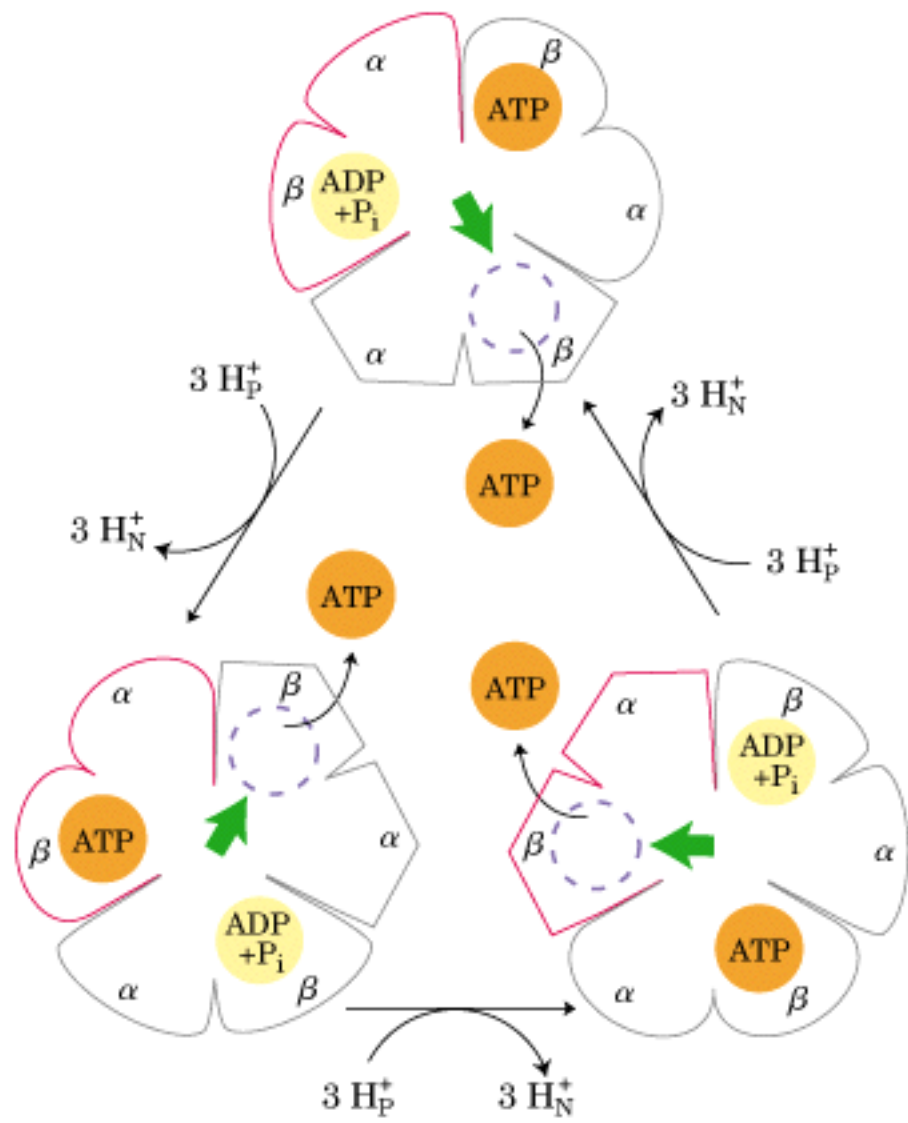


(c)









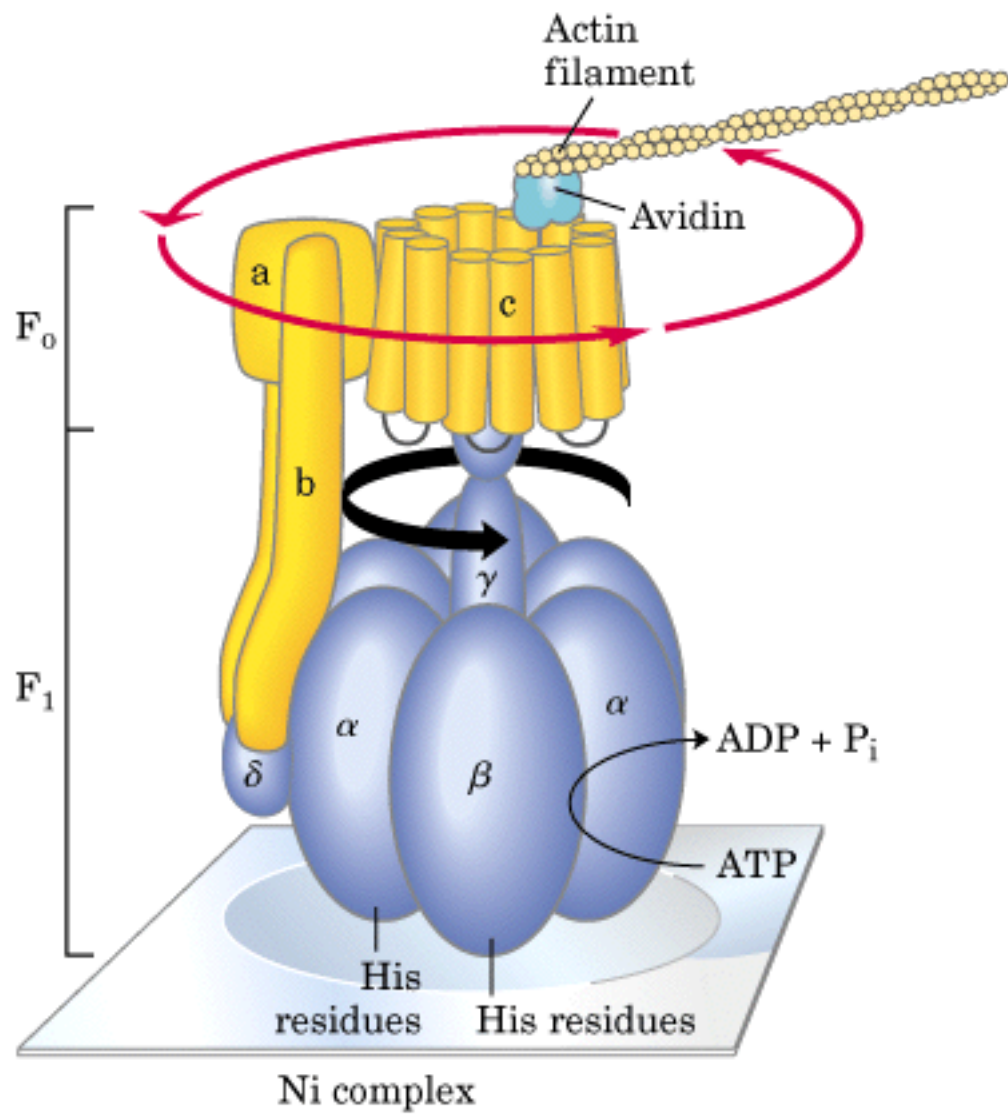
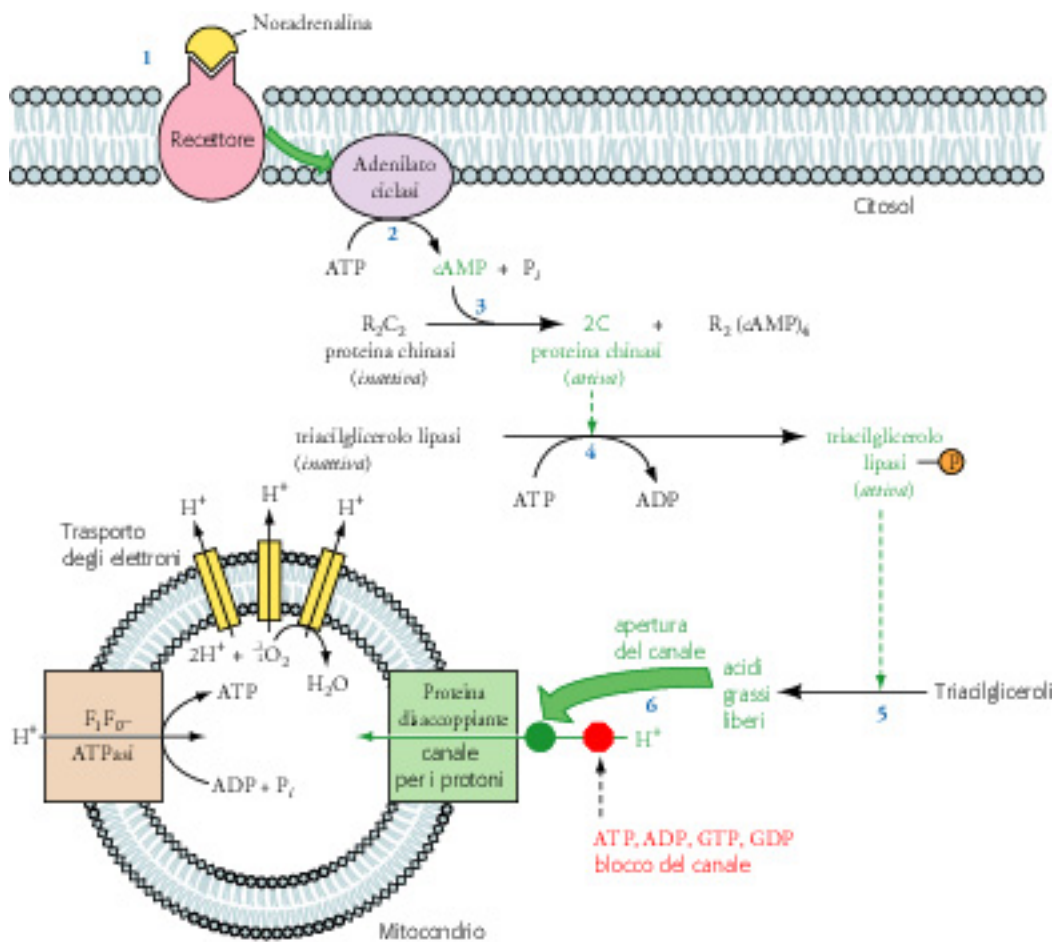
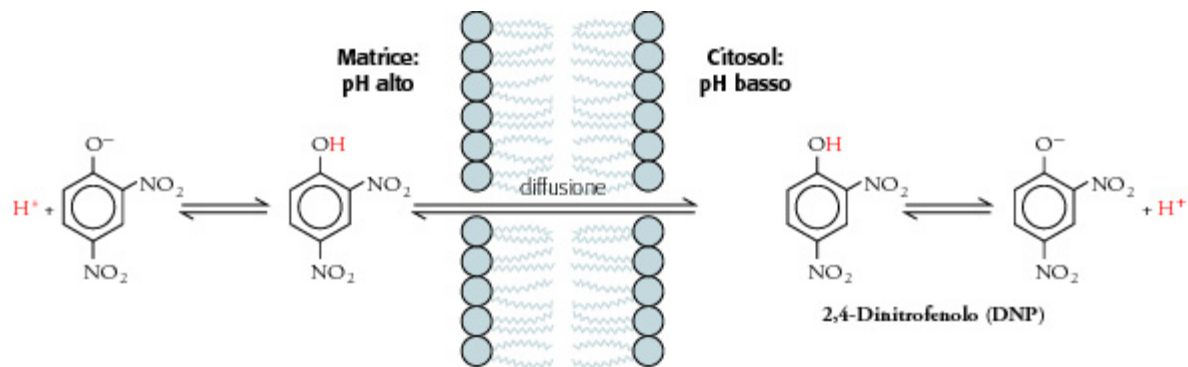


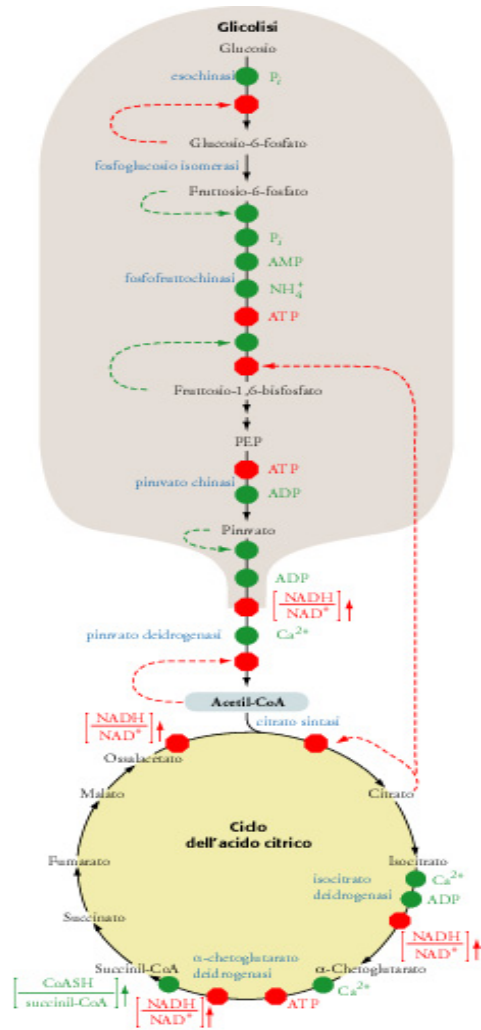
table 19-6

**Respiratory Proteins Encoded by the Human Mitochondrial Chromosome**

<b>Complex</b>	<b>Total number of subunits</b>	<b>Number of subunits encoded by mitochondrial DNA</b>
I NADH dehydrogenase	>25	7
II Succinate dehydrogenase	4	0
III Ubiquinone:cytochrome c oxidoreductase	9	1
IV Cytochrome oxidase	13	3
V ATP synthase	12	2



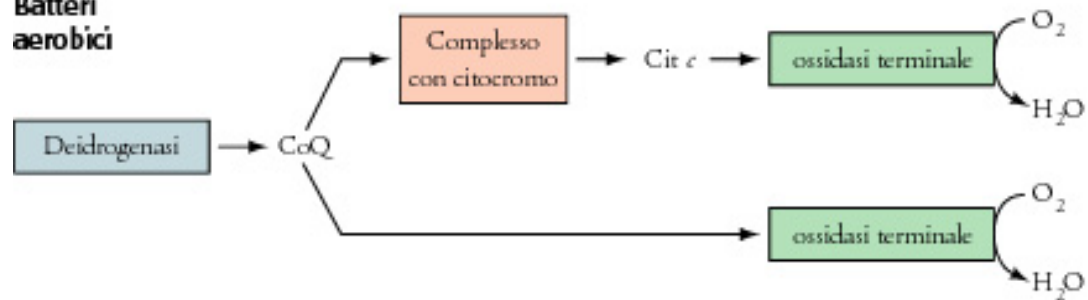


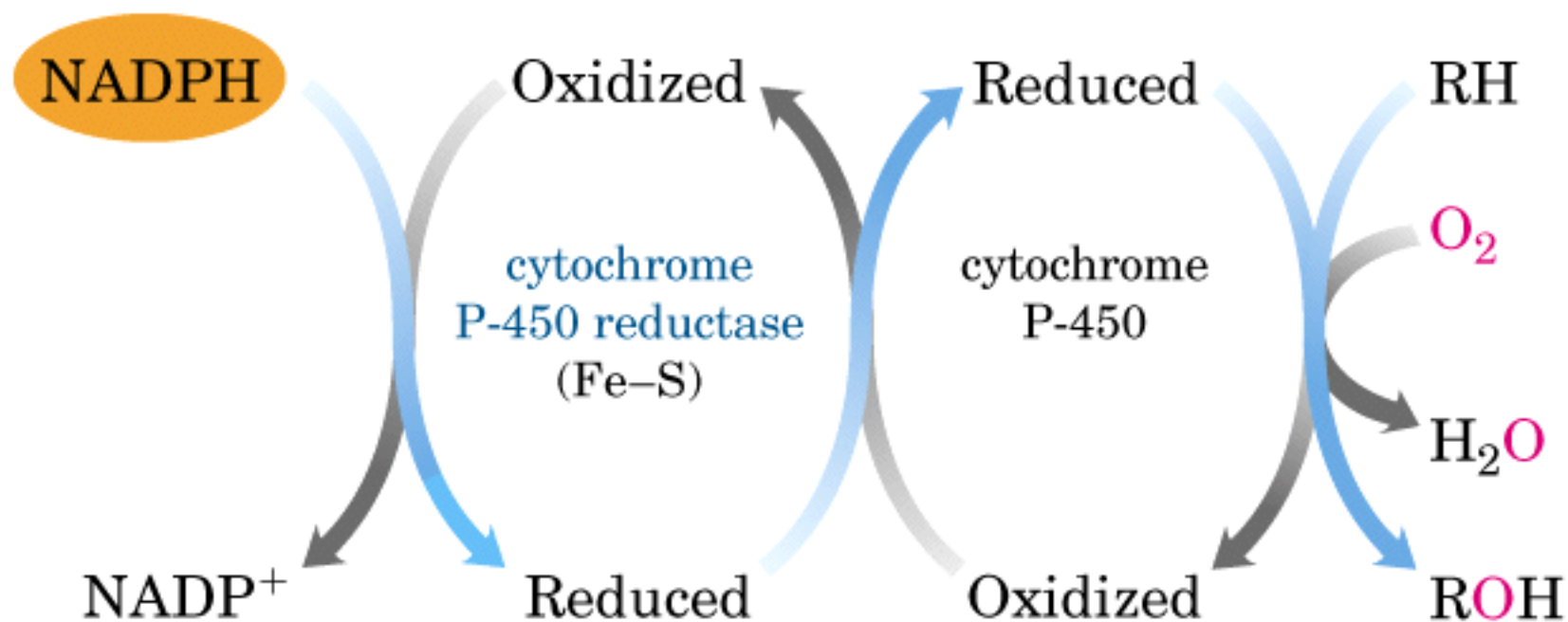
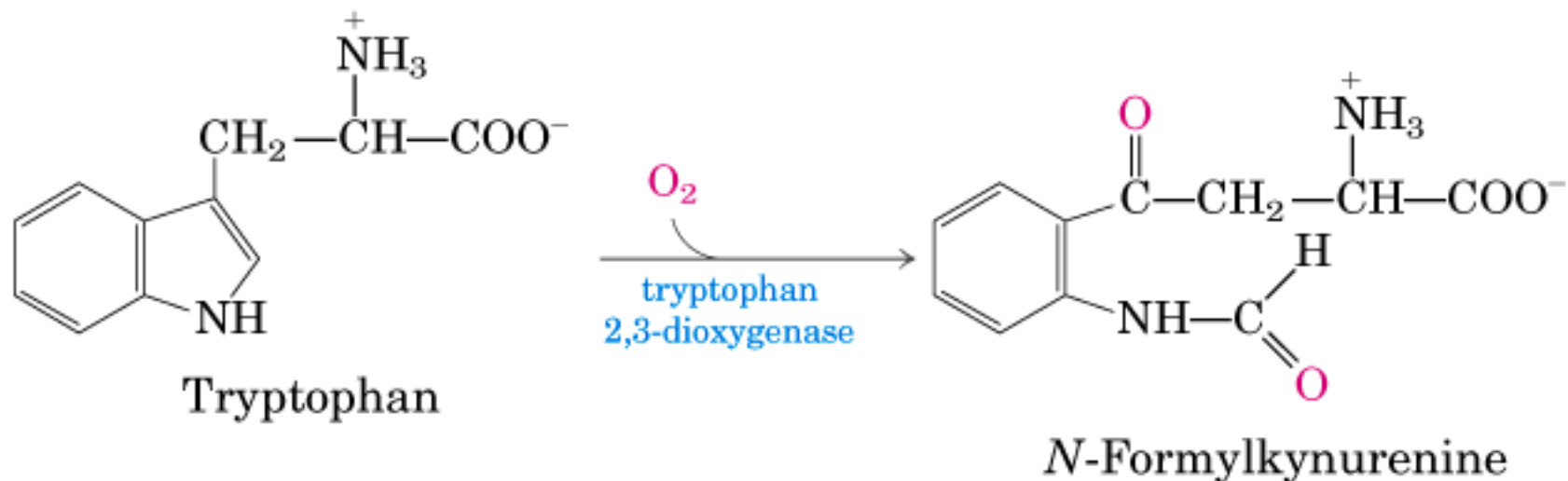


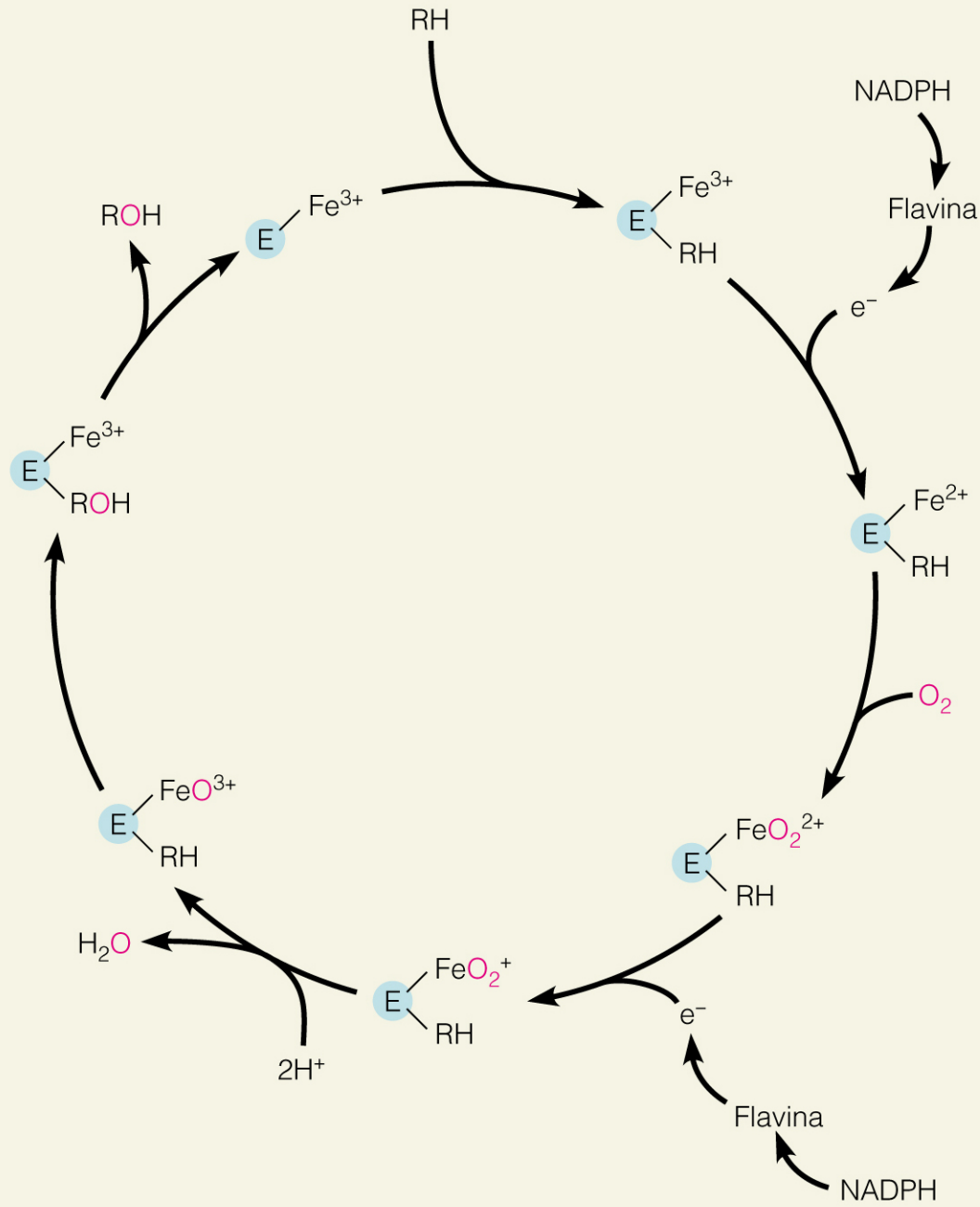
### Mitocondri



### Batteri aerobici





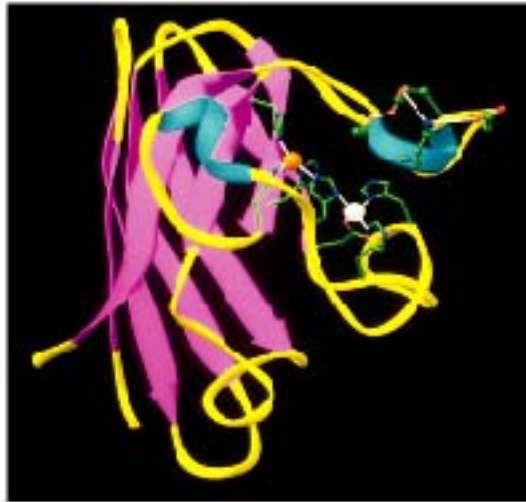




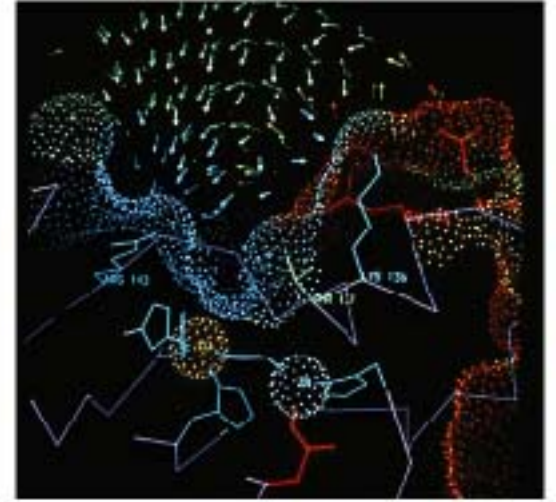


Citocromo P-450

Cu,Zn-SOD



(a)



(b)