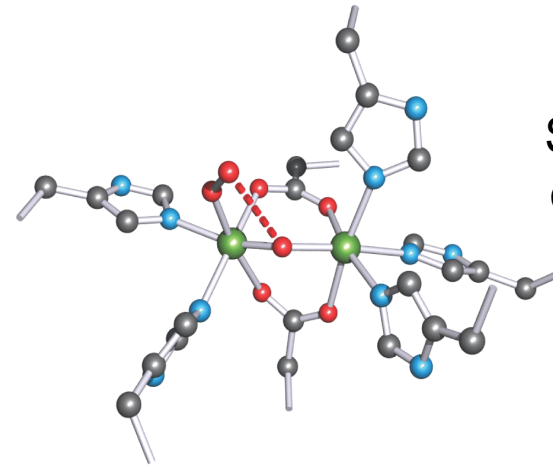
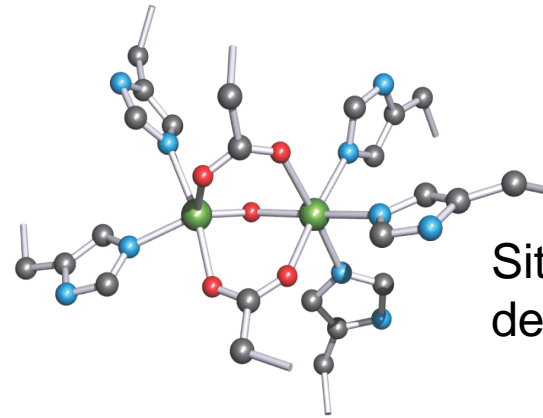
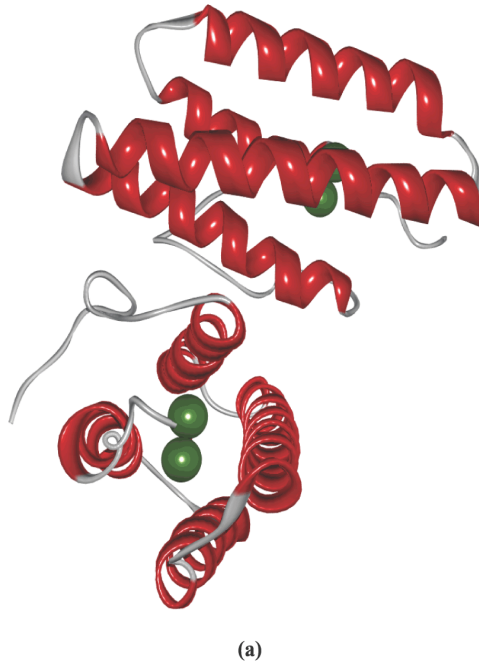


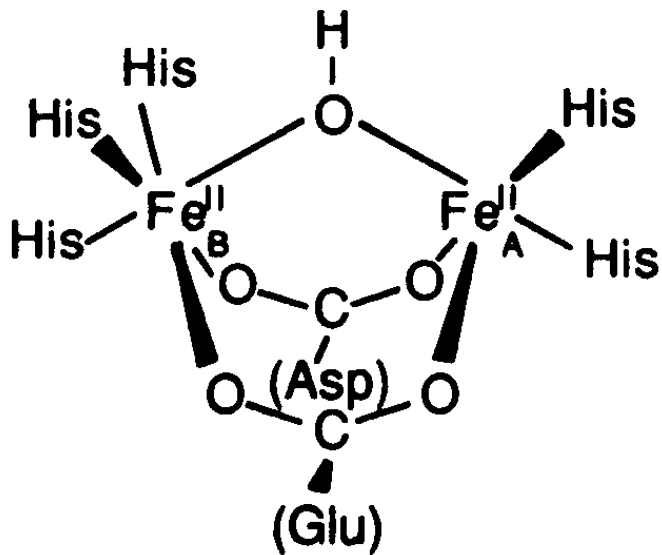
Desossi-emeritrina

(2 di 8 sub-unità)

13,5 kDa
113 a.a.



Trasporto O₂ in invertebrati marini, molluschi e ragni

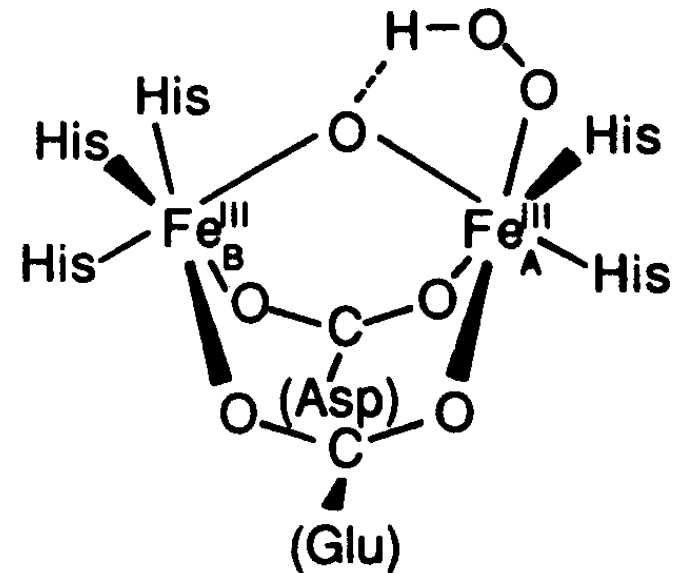
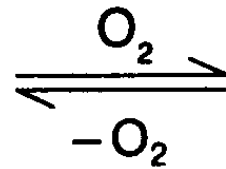


deoxyhemerythrin

Incolore

Fe(II) h.s. ($S = 2$, debole acc. antiferro)

Mossbauer: 2 Fe(II) indistinguibili



oxyhemerythrin

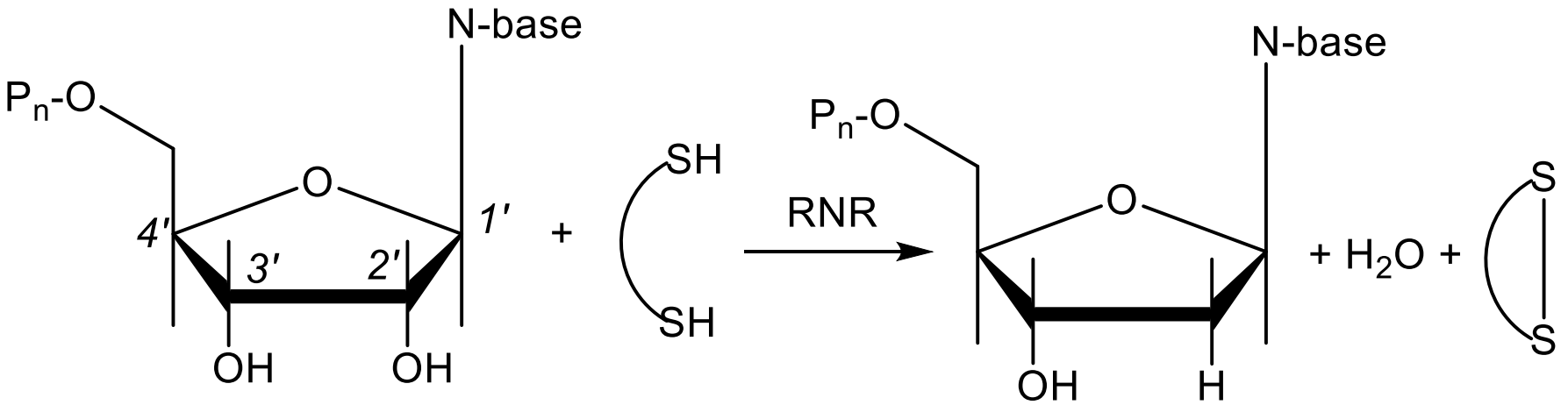
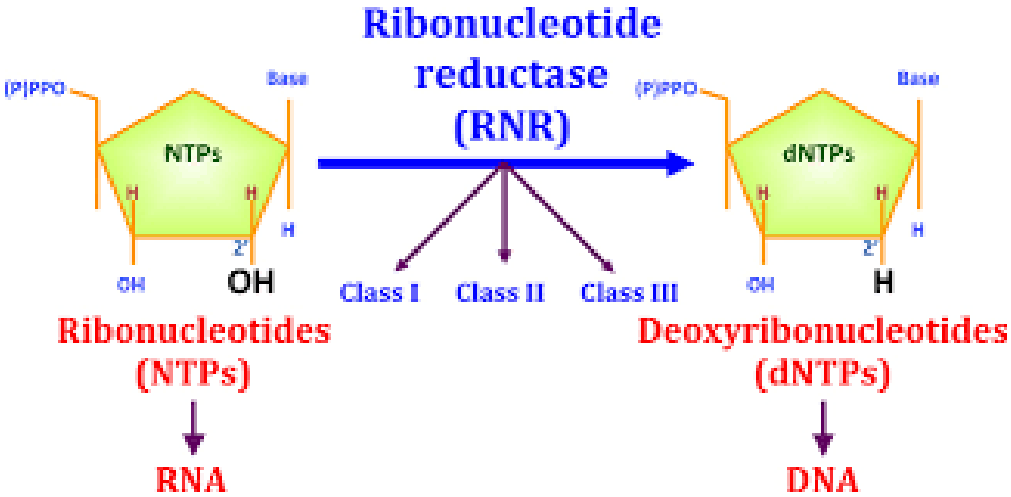
Viola (LMCT)

Fe(III) l.s. ($S = \frac{1}{2}$, forte acc. antiferro)

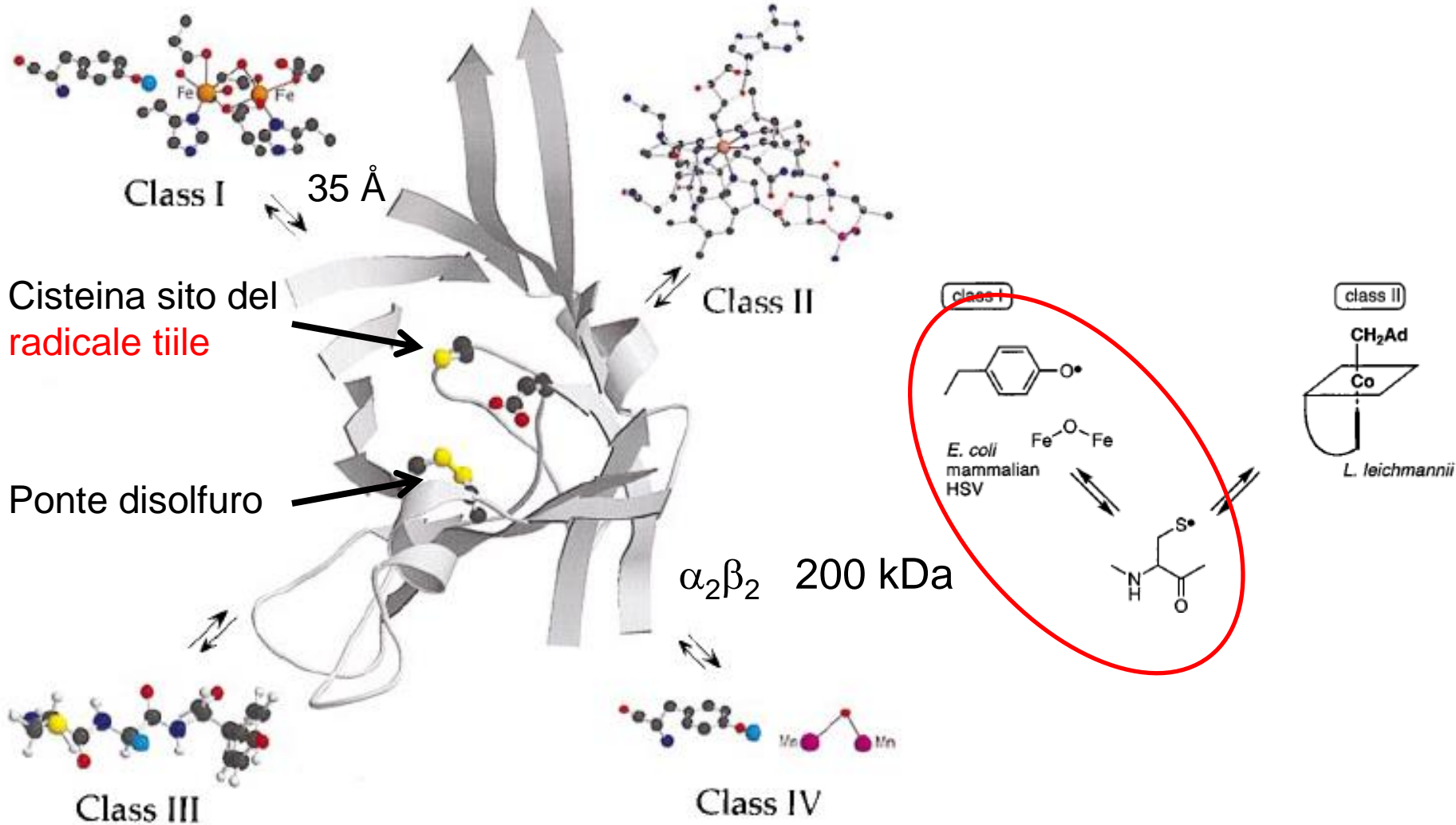
Raman risonante: 848 cm^{-1}

Mossbauer: 2 Fe(III) diversi

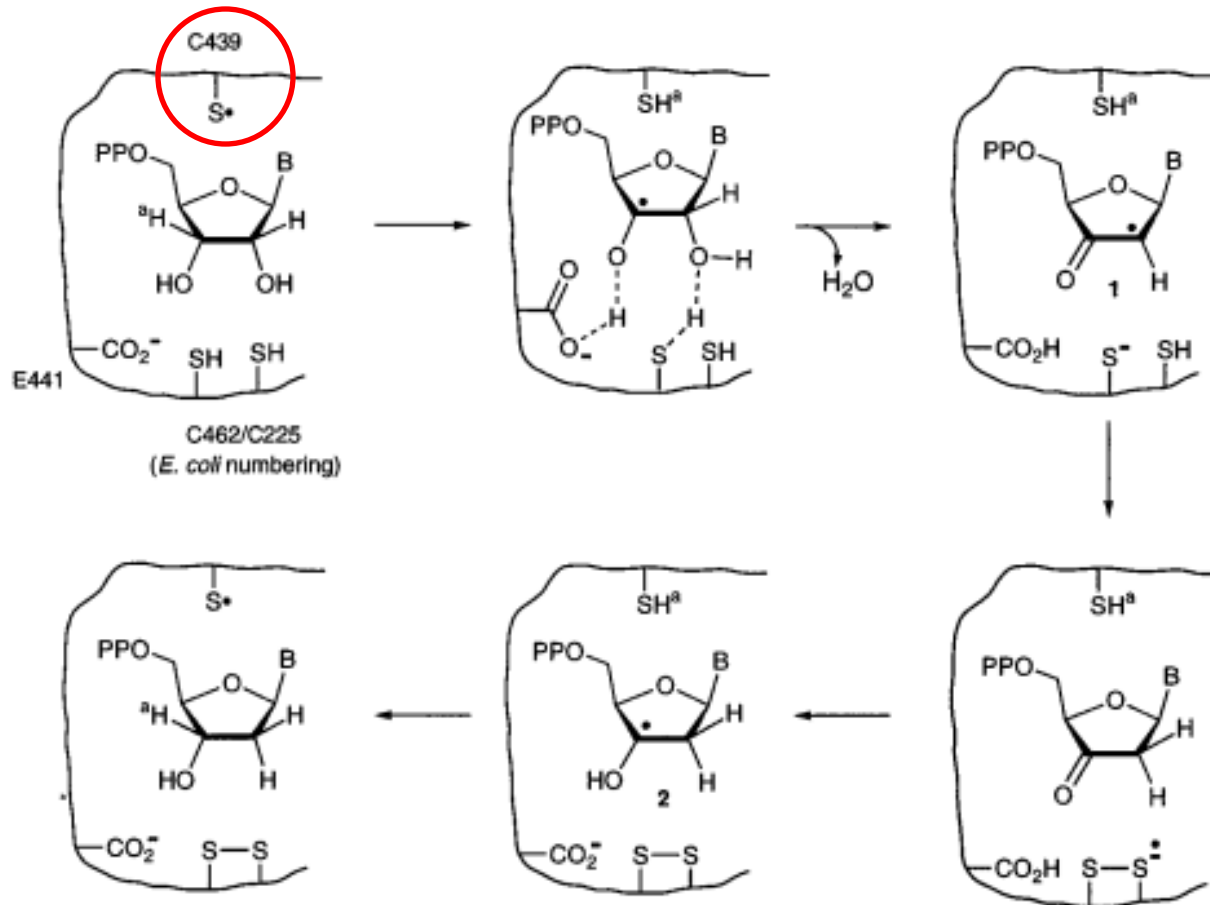
Ribonucleotide Riduttasi (RNR)

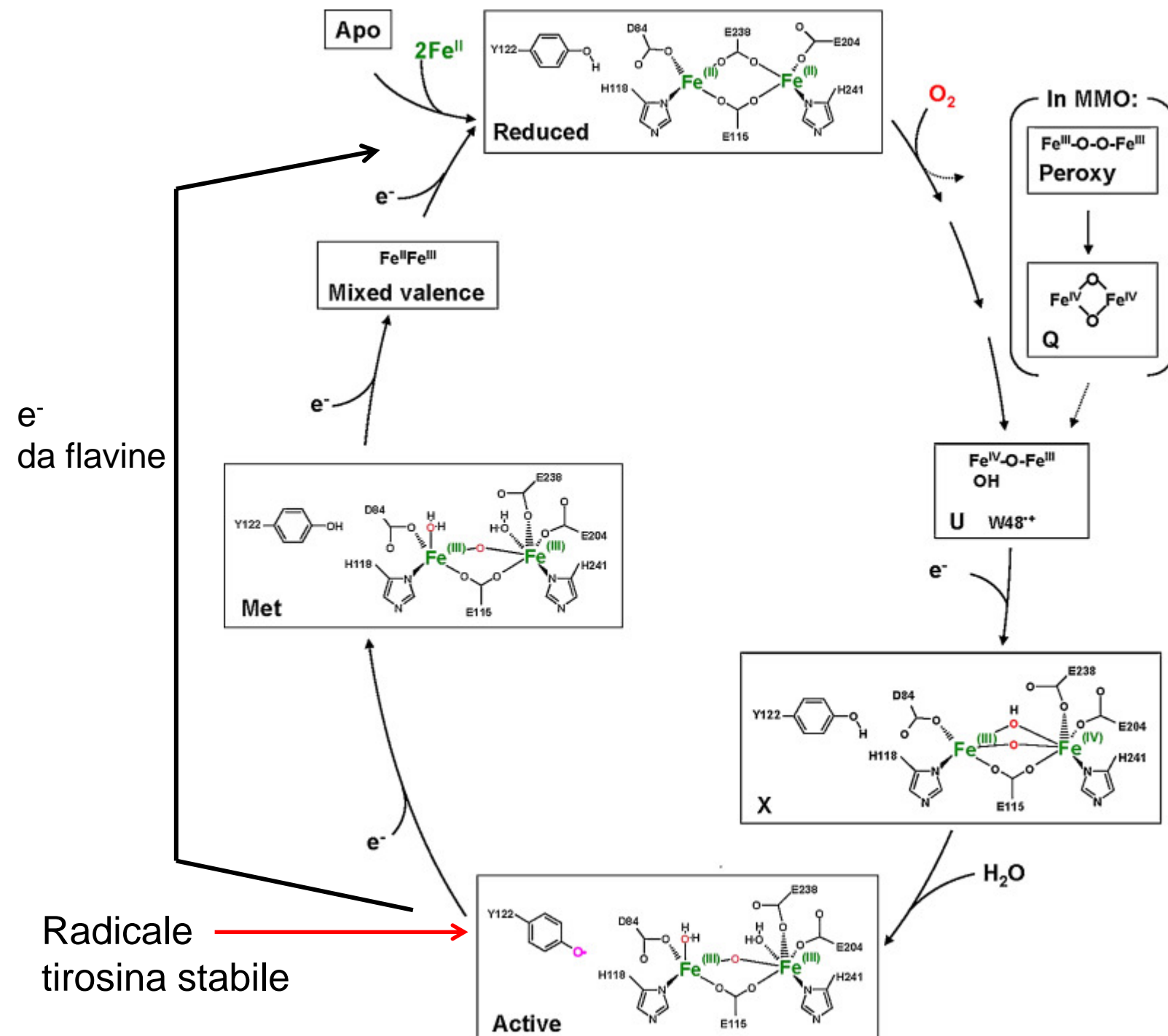


Sito attivo e coenzimi metallici delle varie classi di Ribonucleotide Riduttasi



Meccanismo radicalico della *RR*

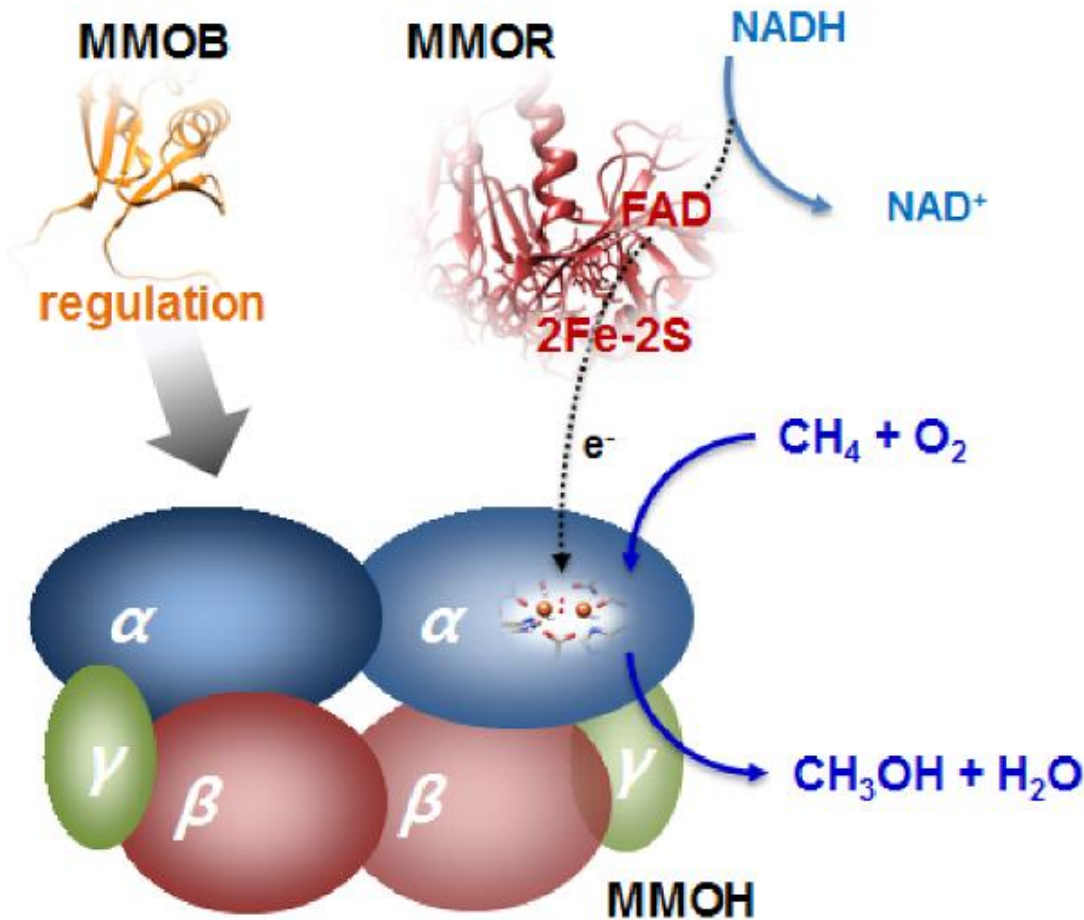




Metano monoossigenasi solubile (sMMO)

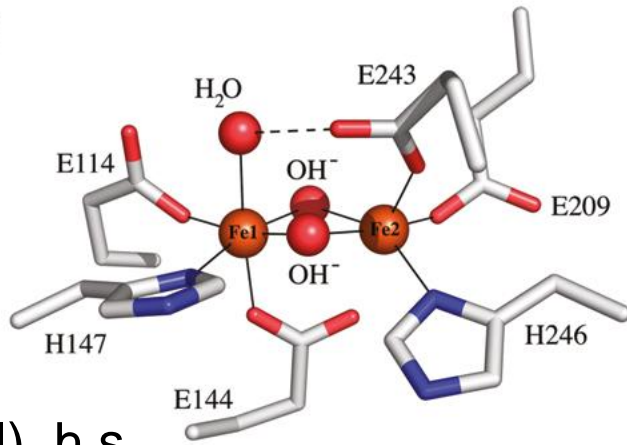


Batteri metanotropici



300 kDa

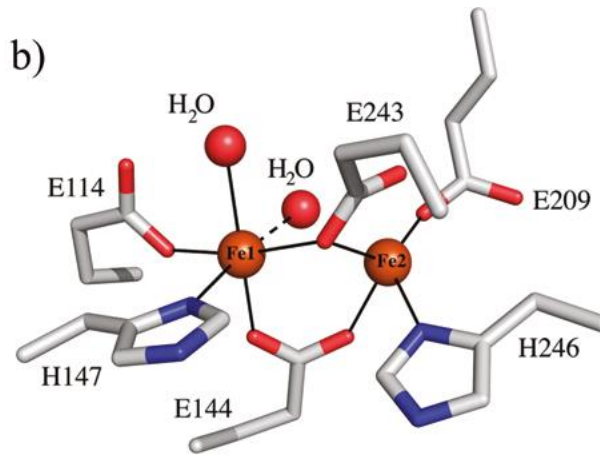
a)



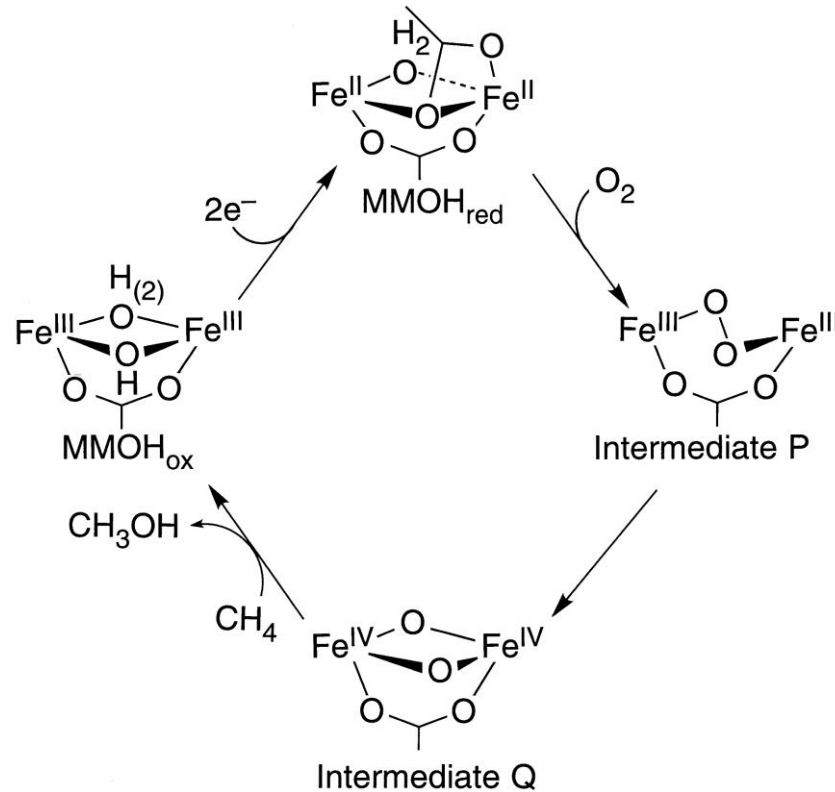
Fe(III), h.s.
diamagnético
incolore

MMOH_{ox}

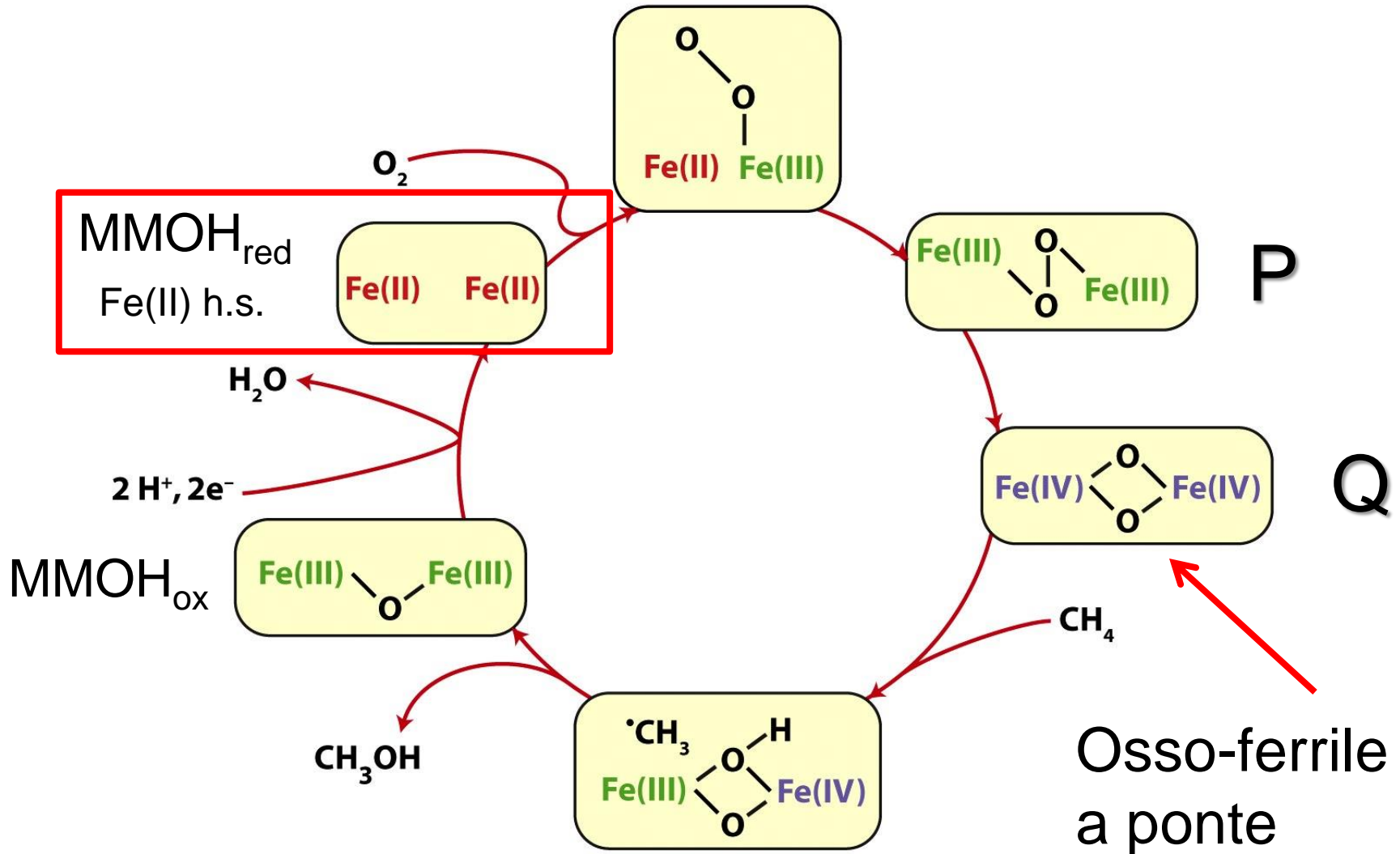
b)



Fe(II), h.s.

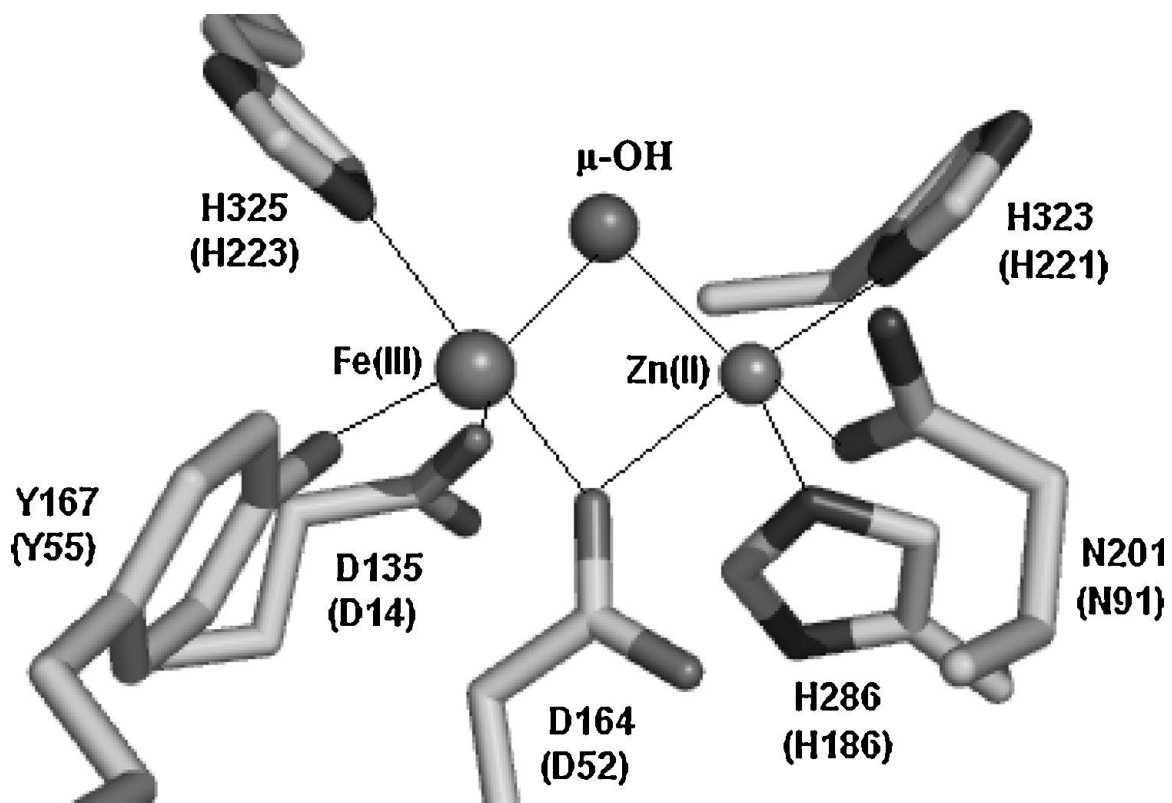
MMOH_{red}

Ipotesi di ciclo catalitico della MMO



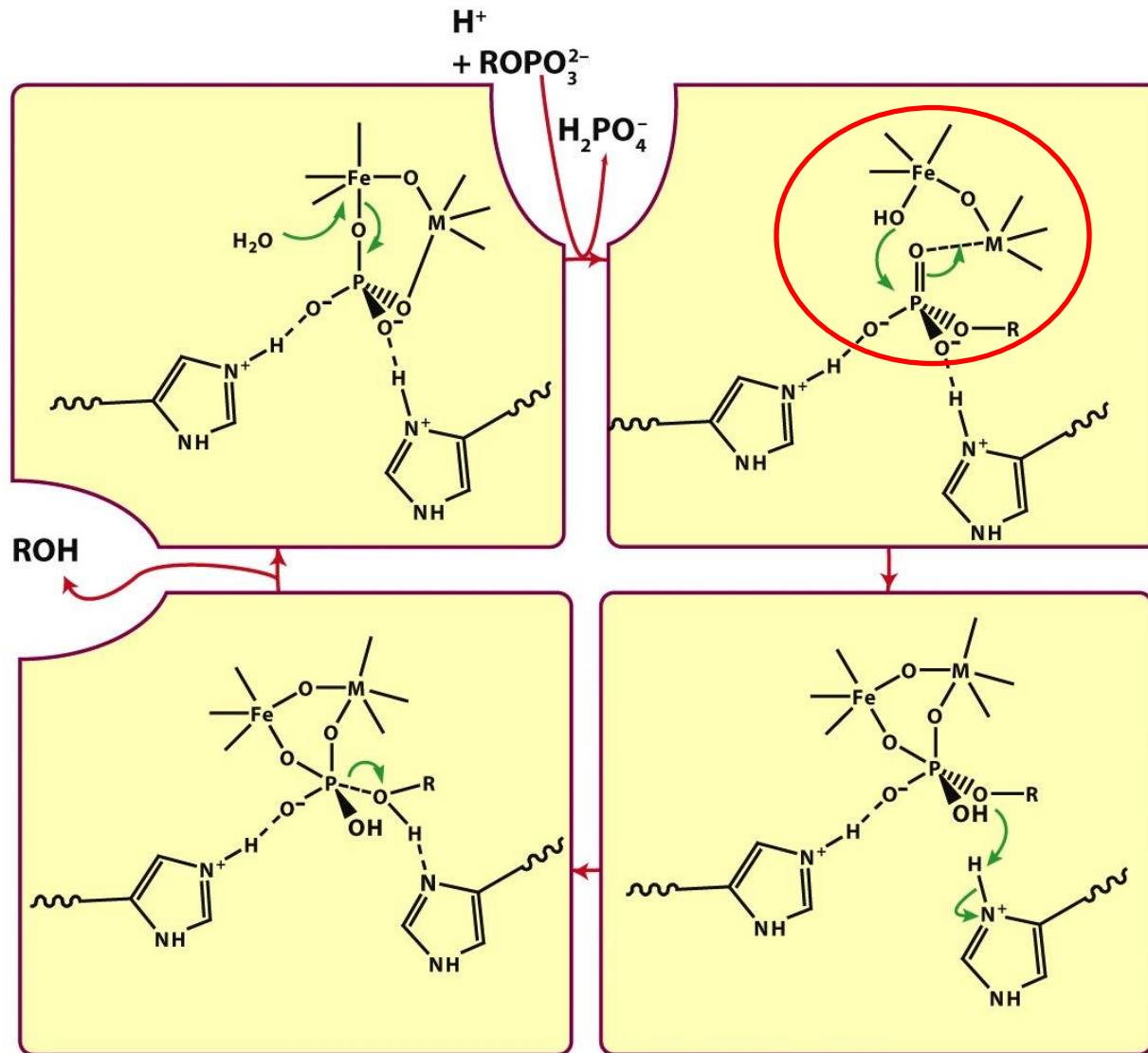
P e Q sono intermedi caratterizzati spettroscopicamente

Sito attivo di una fosfatasi acida



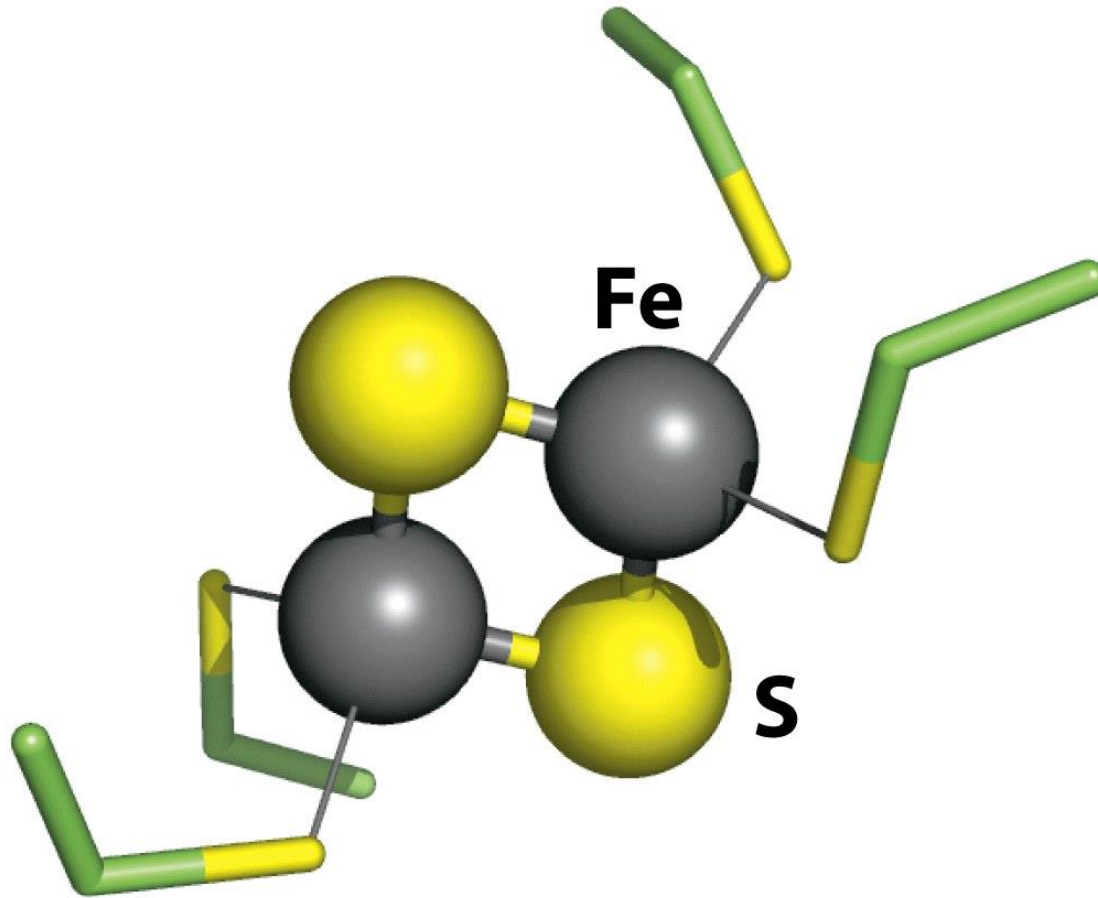
Tyr (LMCT, λ_{\max} fra 510 e 550 nm)

Ciclo catalitico di una fosfatasi acida

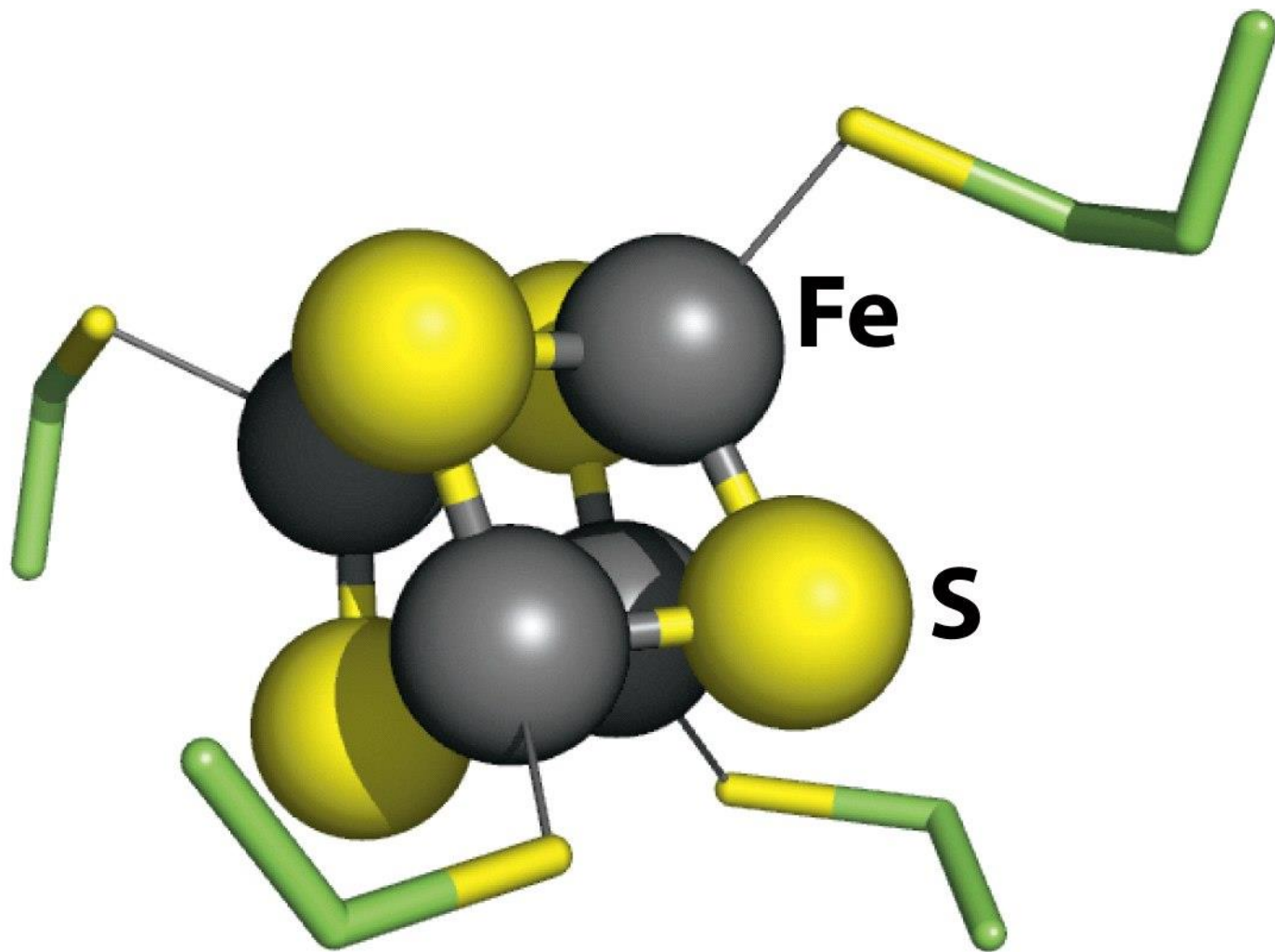


Sito attivo: Fe(III)-Fe(II)
Entrambi alto-spin

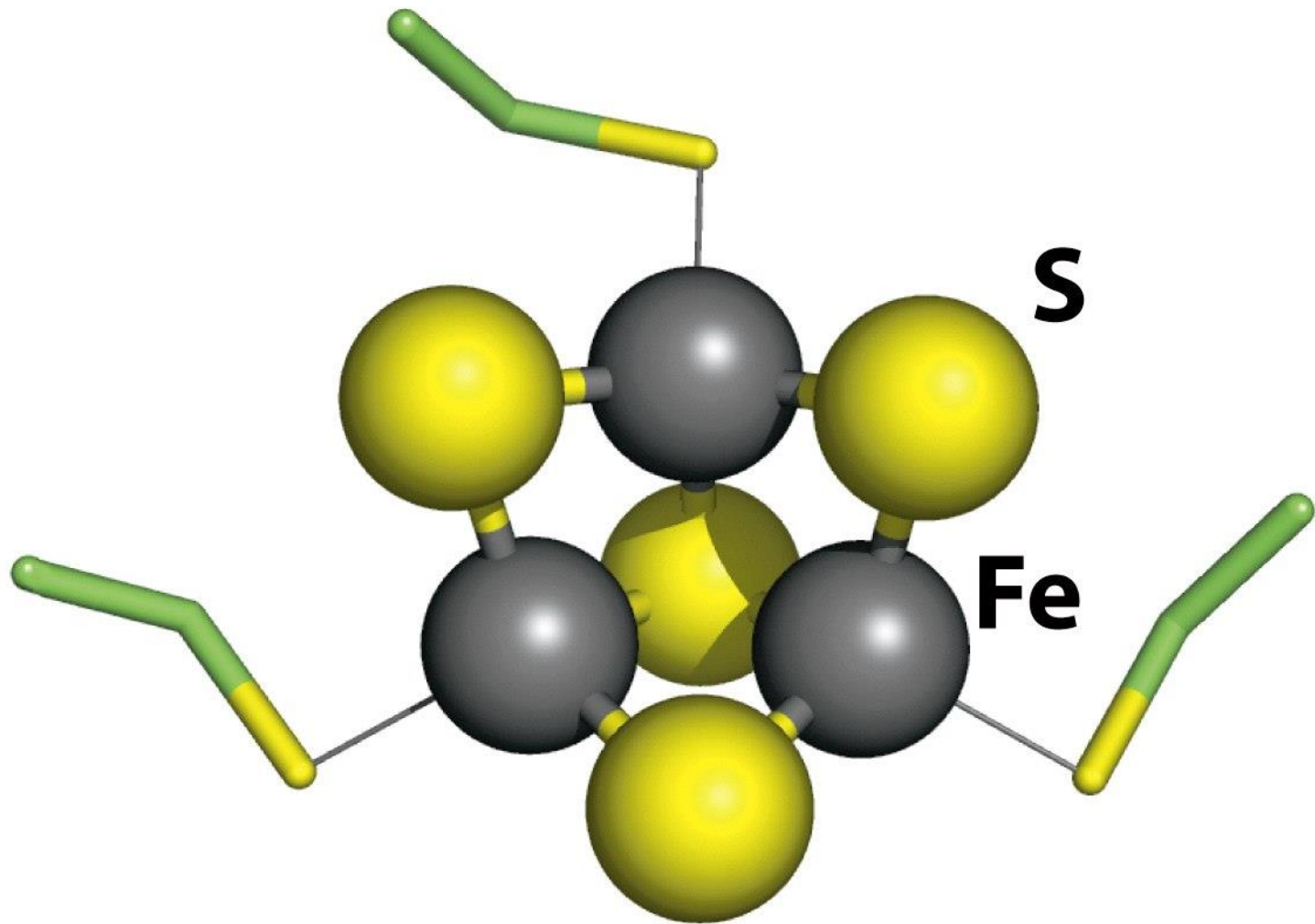
Proteine Fe-S



2Fe-2S]

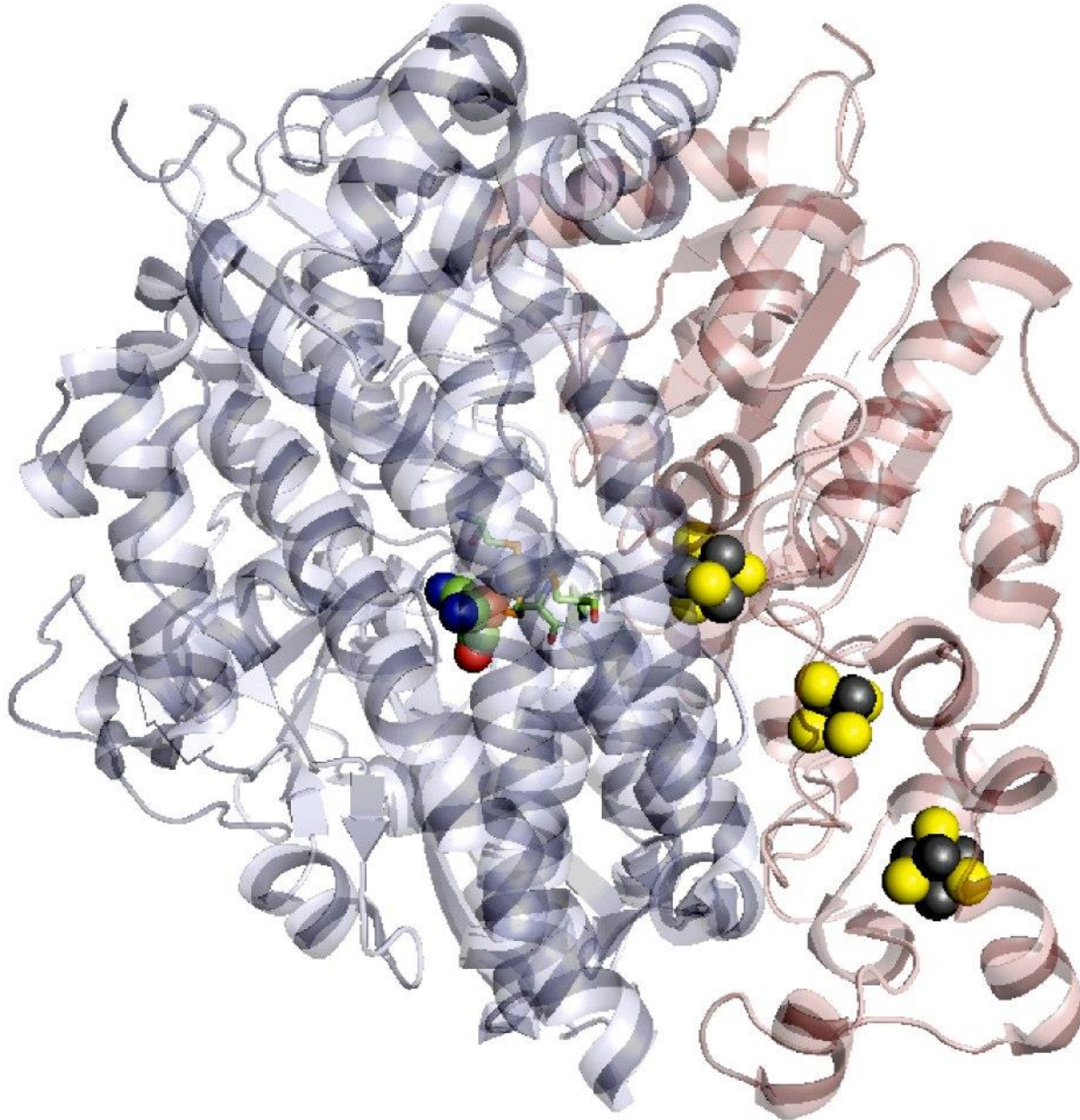


[4Fe-4S]



[3Fe-4S]

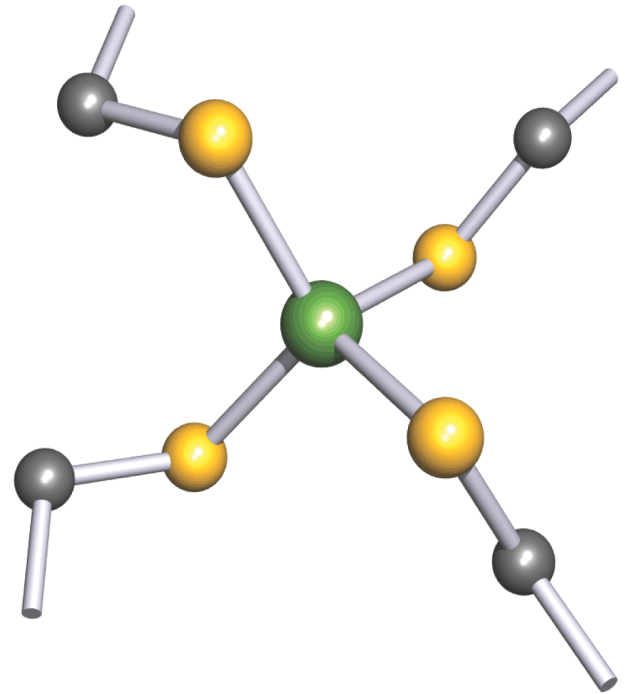
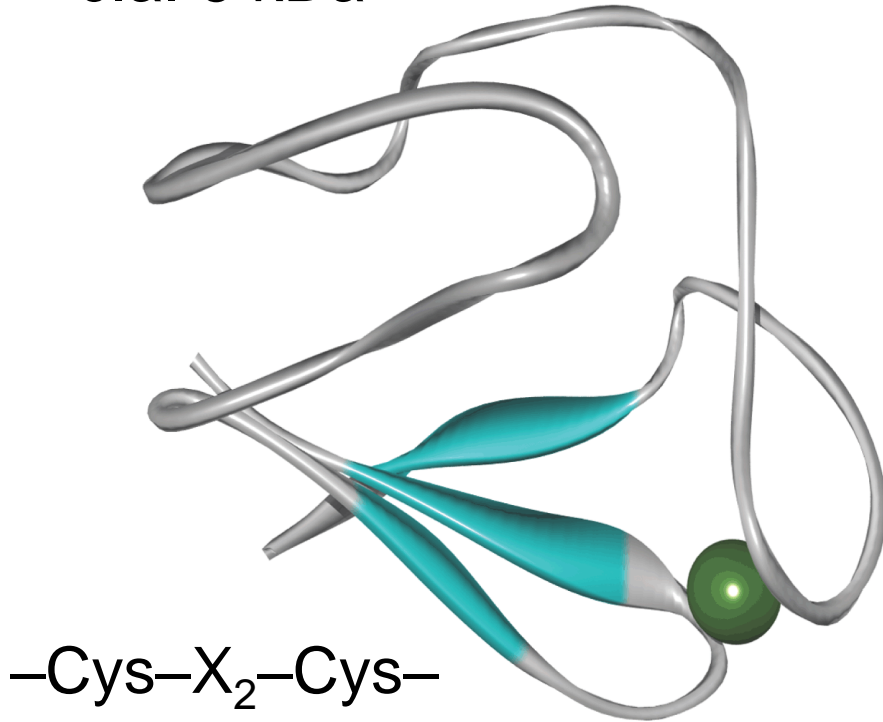
[Ni–Fe]-idrogenasi: percorso redox



Rubredossina da *clostridium pasteurianum*

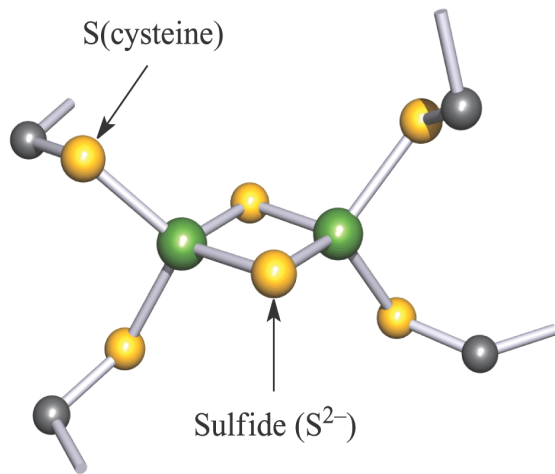
c.a. 6 kDa

$E^\circ \approx 0 \text{ V}$



Unità ferro-zolfo da ferridossine

E° fra -250 e -450 mV

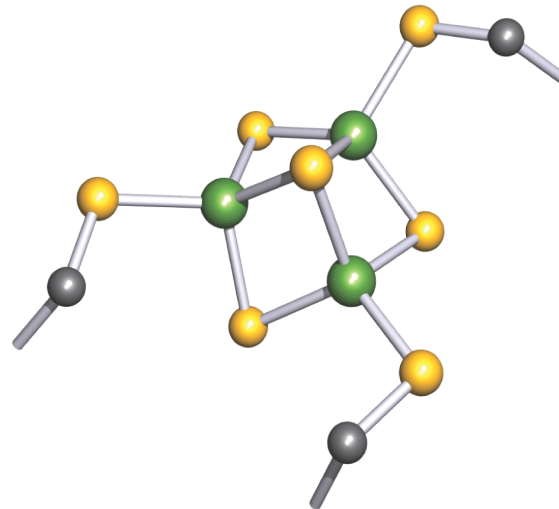


[2Fe-2S]

da spinaci

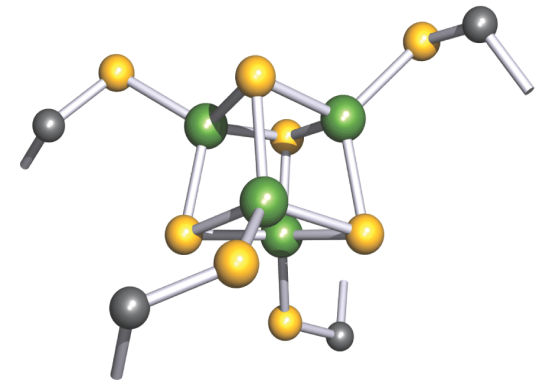
$E^\circ = -420$ mV

Fe(III)/Fe(III) – Fe(II)/Fe(III)



[3Fe-4S]

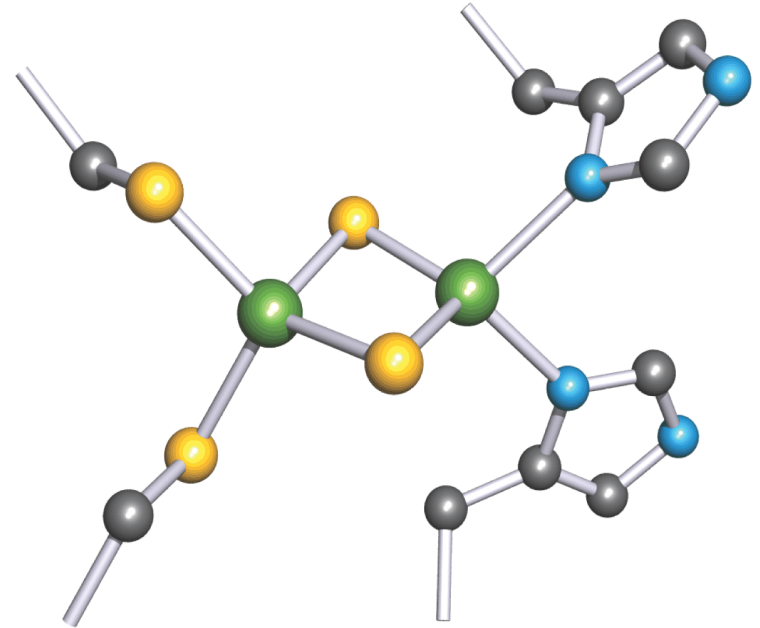
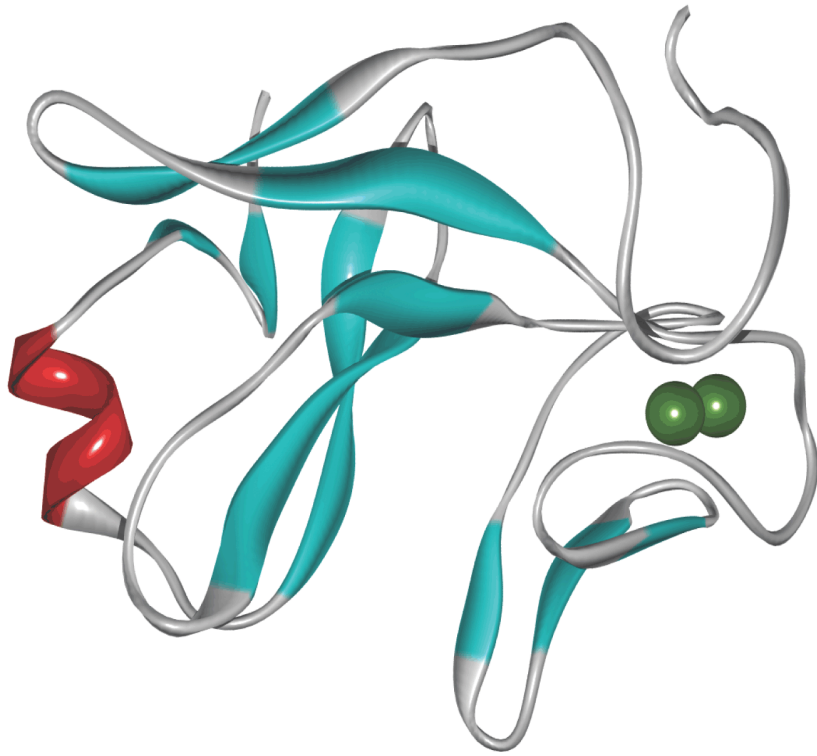
azotobacter vinelandii



[4Fe-4S]

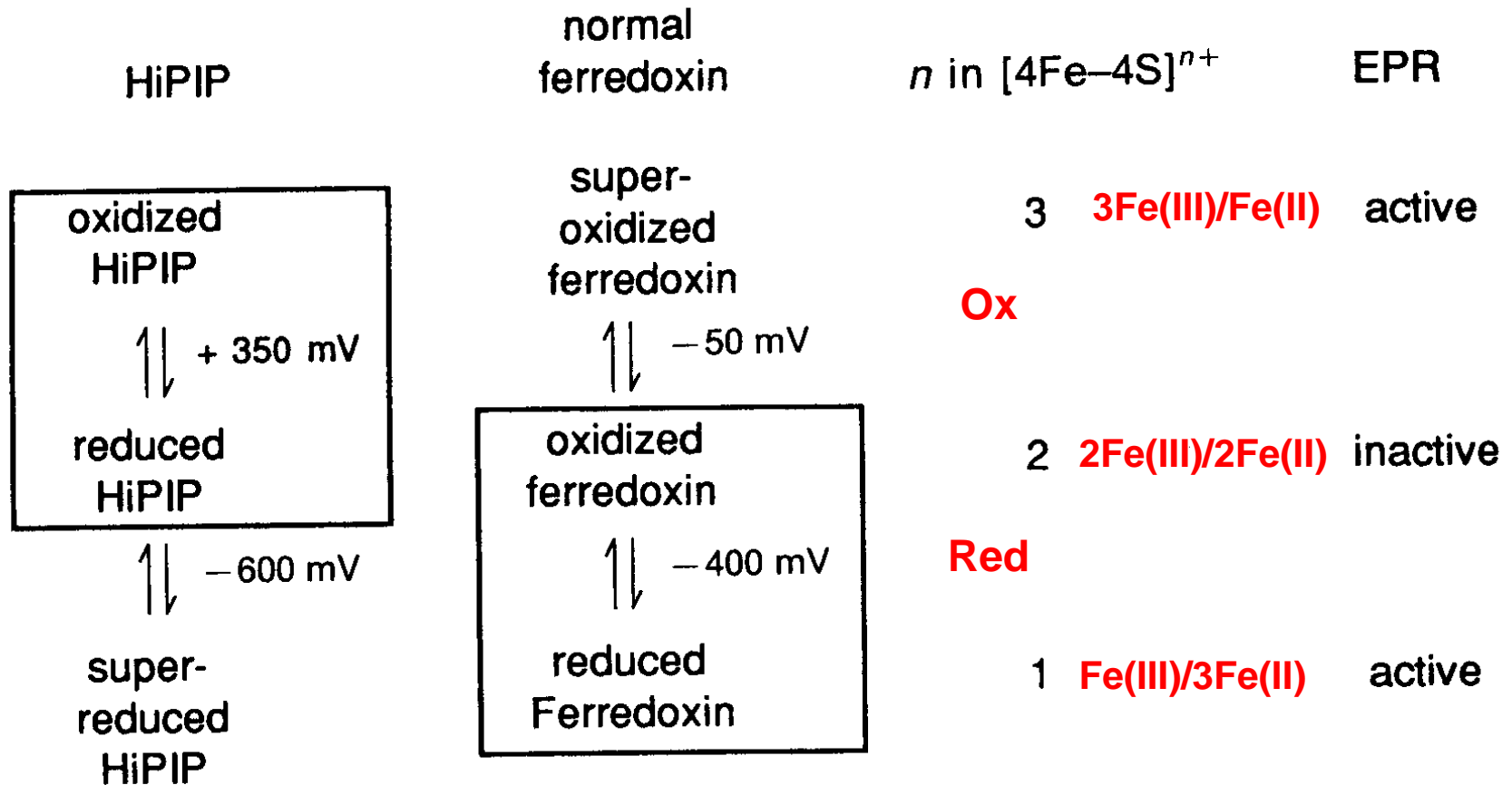
chromatium vinosum

Proteina Rieske da cloroplasti di spinaci



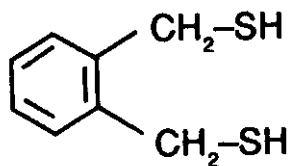
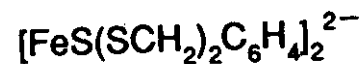
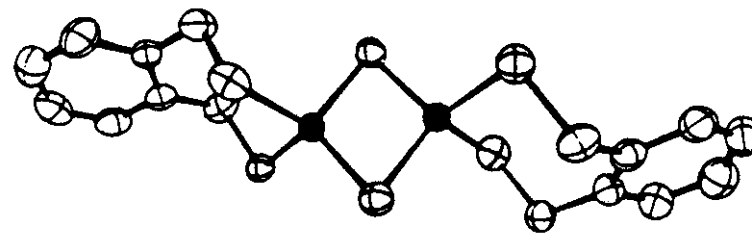
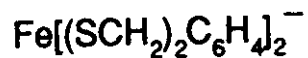
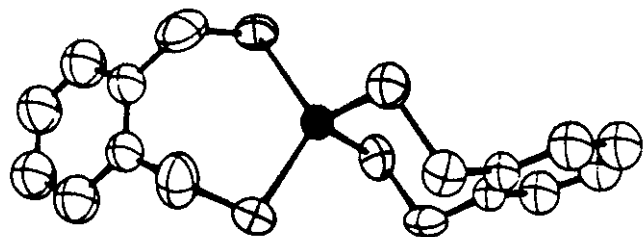
$$E^{\circ} = +290 \text{ mV}$$

High Potential Iron-sulfur Proteins (HiPIP)

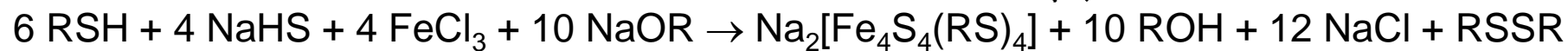
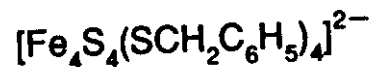
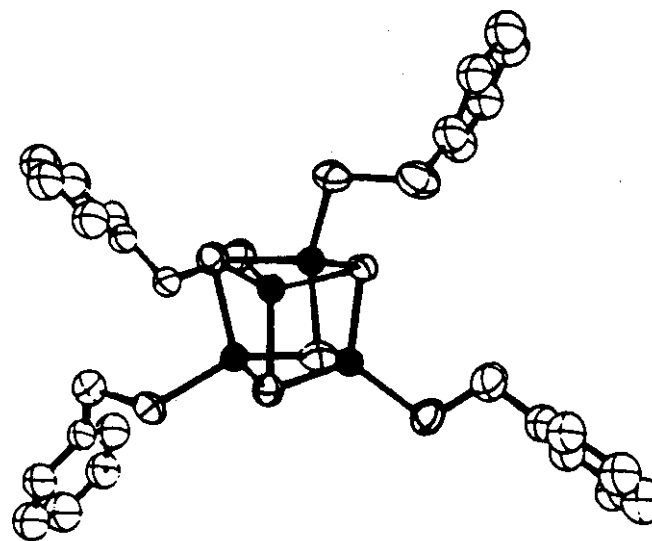


[Rd]:	-Cys-X ₂ -Cys-X _n -Cys-X ₂ -Cys-
[2Fe-2S]:	-Cys-X ₄ -Cys-X ₂ -Cys-X ₂₉ -Cys-
[4Fe-4S]:	-Cys-X ₂ -Cys-X ₂ -Cys-X _n -Cys-
HiPIP:	-Cys-X ₂ -Cys-X ₁₆ -Cys-X ₁₃ -Cys-
[3Fe-4S]:	-Cys-X _{5,7} -Cys-X _n -Cys-

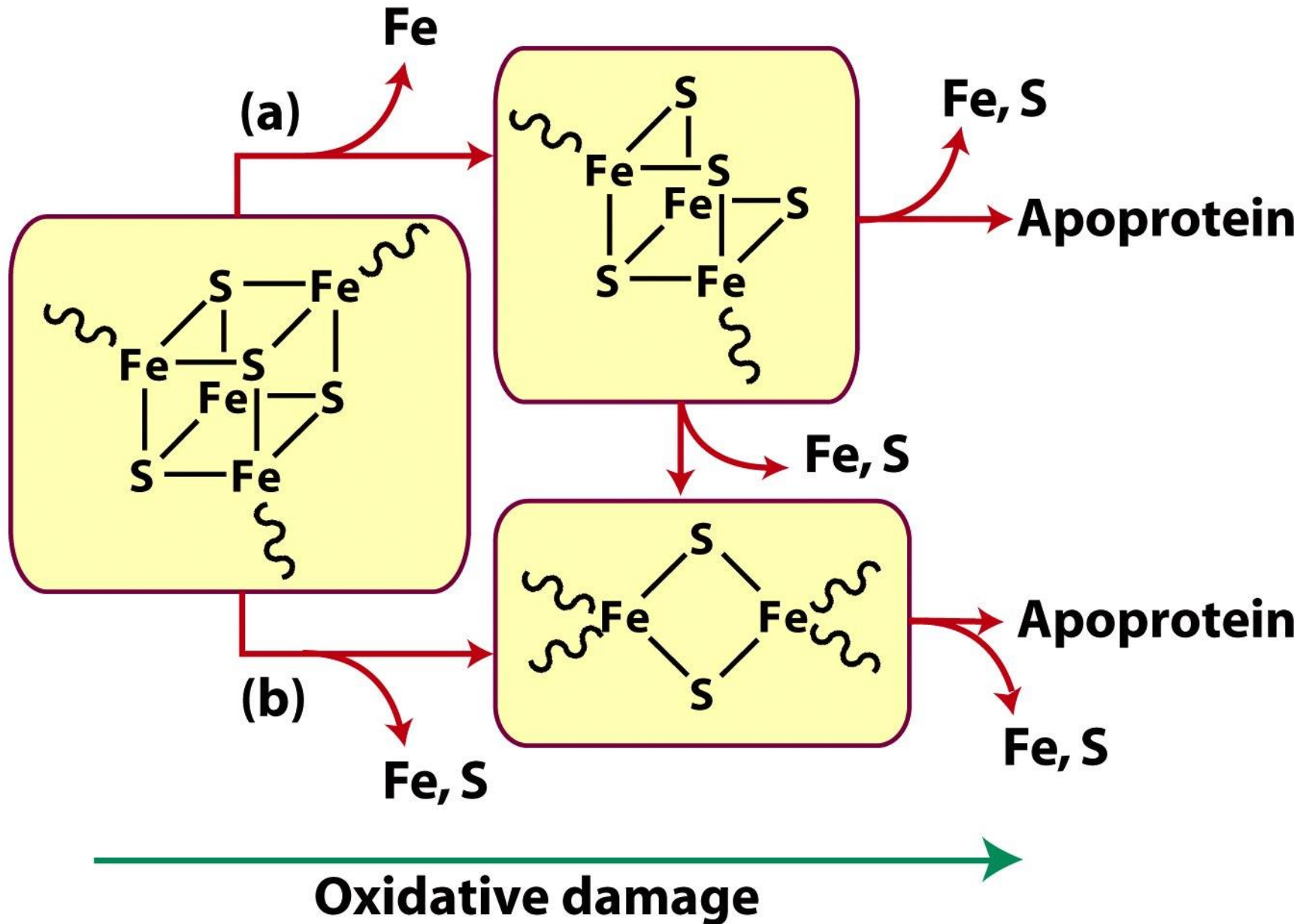
Complessi modello



o-xylene- α,α' -dithiol, $(\text{HSCH}_2)_2\text{C}_6\text{H}_4$

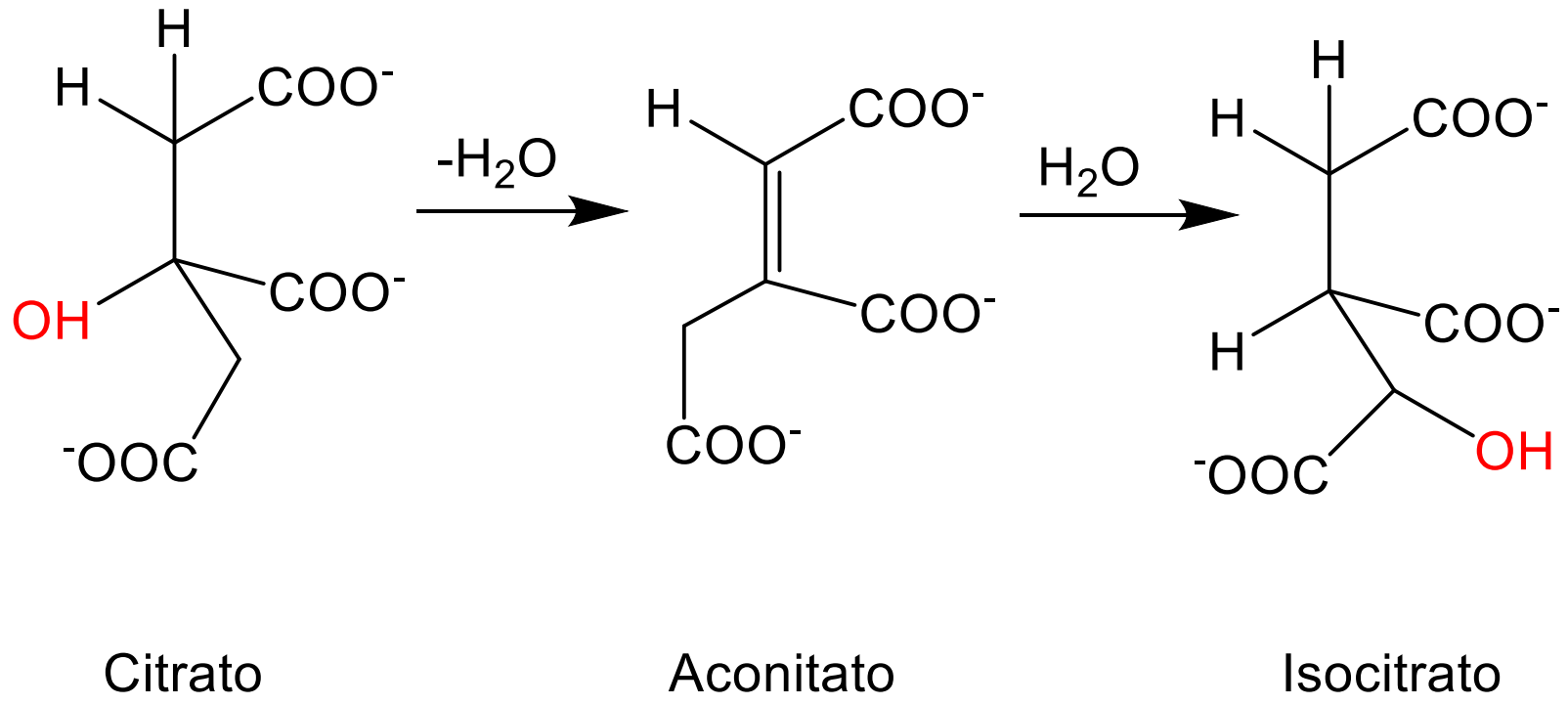


Proteine Fe-S come sensori di O₂



Enzima Aconitasi

catalizza interconversione del citrato in isocitrato



Sito catalitico dell'aconitasi

