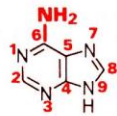


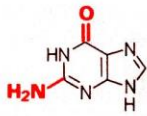
Nucleinsäuren

Purin-Derivate

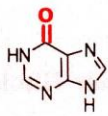
Basen:



Adenin (Ade)

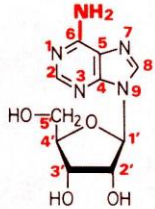


Guanin (Gua)

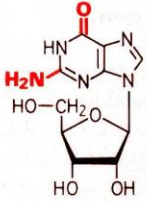


Hypoxanthin (Hyp)

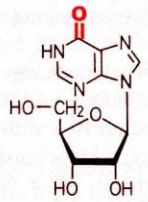
Nucleoside:



Adenosin (A)



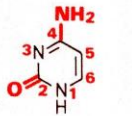
Guanosin (G)



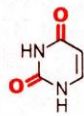
Inosin (I)

Pyrimidin-Derivate

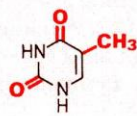
Basen:



Cytosin (Cyt)

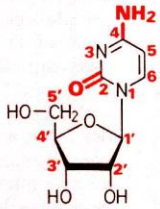


Uracil (Ura)

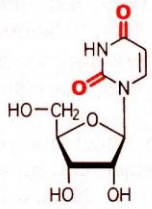


Thymin (Thy)

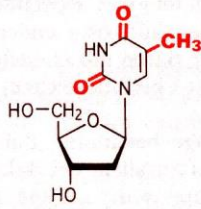
Nucleoside:



Cytidin (C)

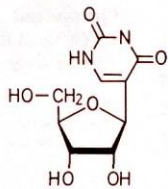


Uridin (U)

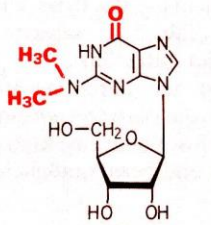


Thyminid (dT)

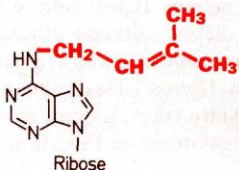
Seltene Nucleoside:



Pseudo-
uridin (ψ)



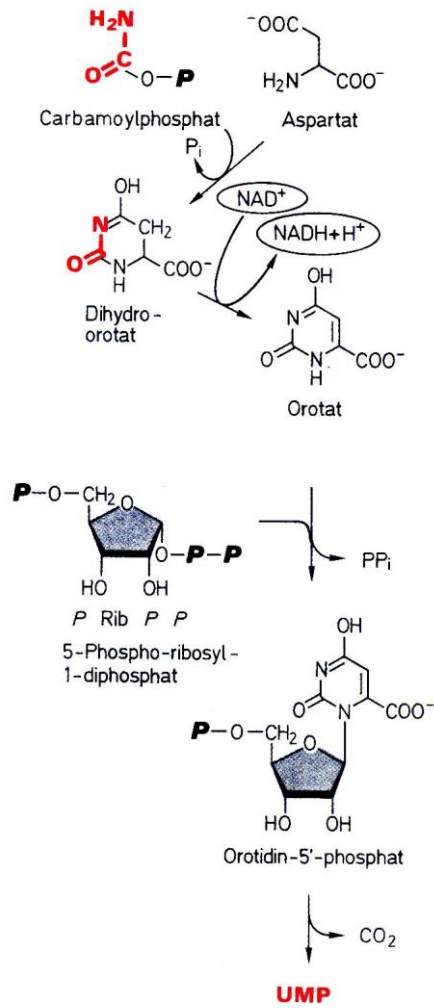
N²-Dimethyl-
guanosin (m₂G)



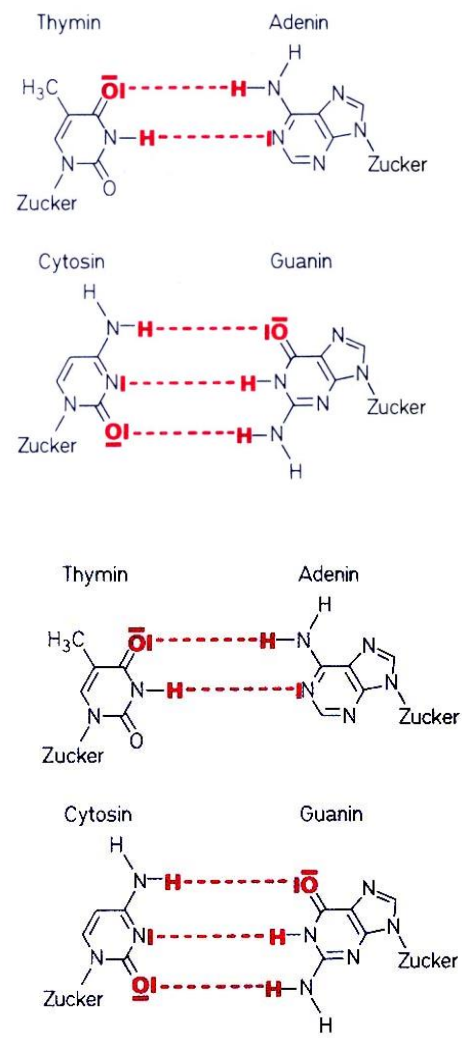
Ribose
N⁶- Isopentenyl-
adenosin

Nucleinsäuren

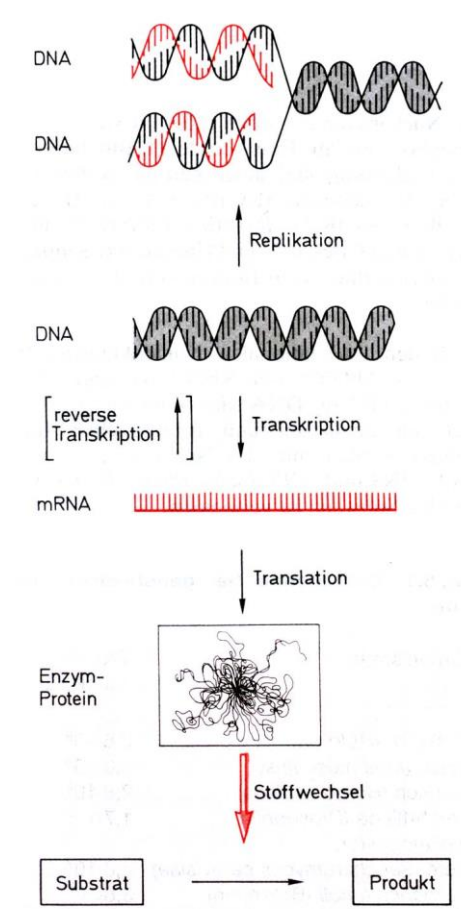
Synthese



Basenpaarung

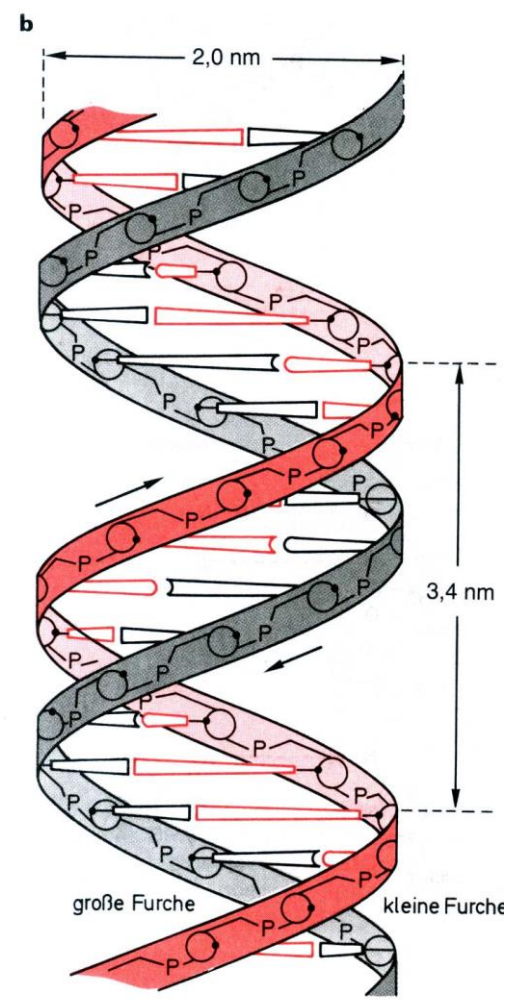


Biochemisches Dogma



Nucleinsäuren

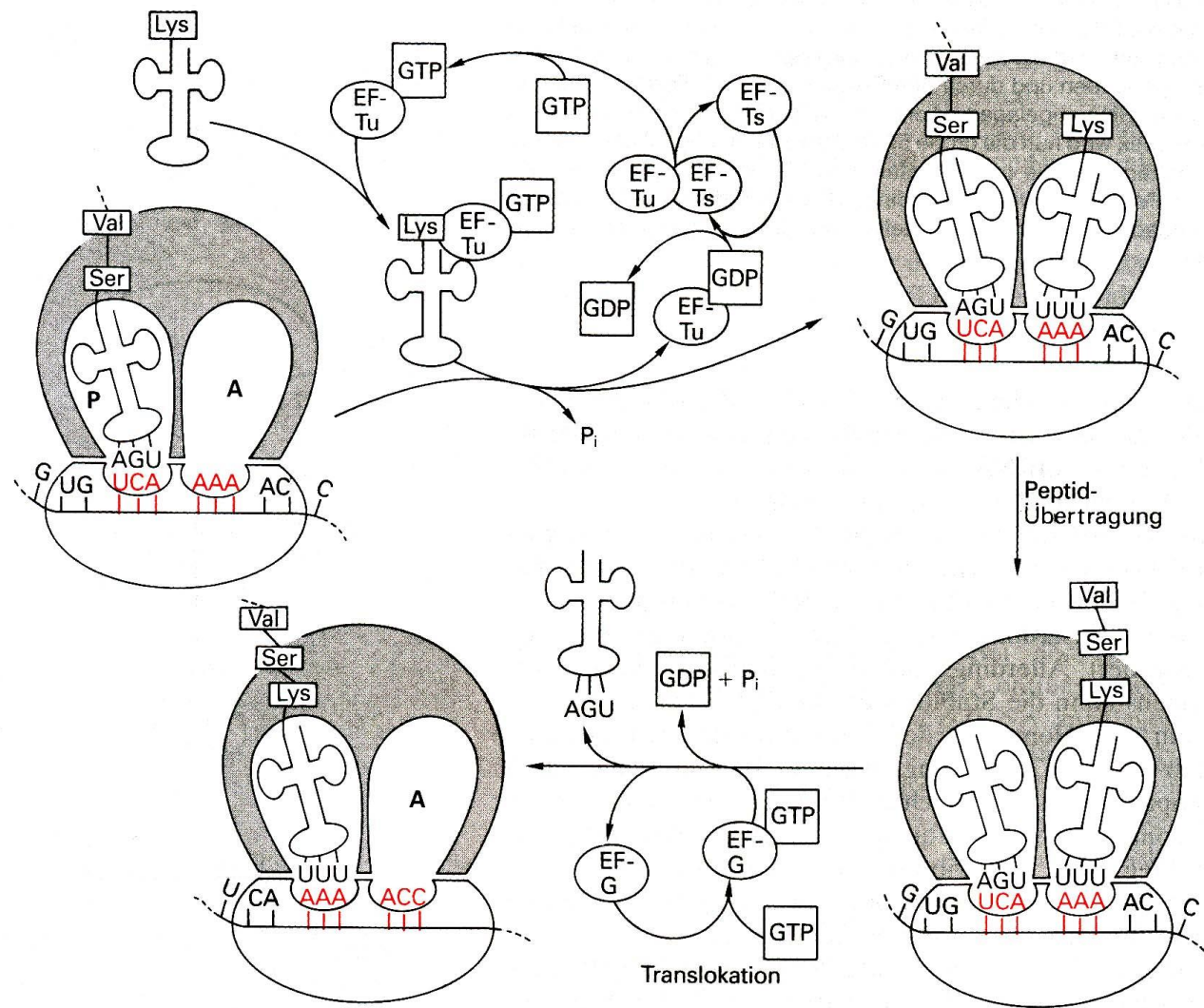
Genetischer Code



1. Base	2. Base				3. Base
	U	C	A	G	
U	Phe	Ser	Tyr	Cys	U
	Phe	Ser	Tyr	Cys	C
	Leu	Ser	„Stop“	„Stop“	A
	Leu	Ser	„Stop“	Trp	G
C	Leu	Pro	His	Arg	U
	Leu	Pro	His	Arg	C
	Leu	Pro	Gin	Arg	A
	Leu	Pro	Gin	Arg	G
A	lie	Thr	Asn	Ser	U
	lie	Thr	Asn	Ser	C
	lie	Thr	Lys	Arg	A
	Met (Start)	Thr	Lys	Arg	G
G	Val	Ala	Asp	Gly	U
	Val	Ala	Asp	Gly	C
	Val	Ala	Glu	Gly	A
	Val	Ala	Glu	Gly	G

Nucleinsäuren

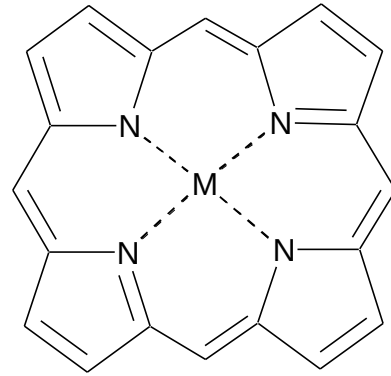
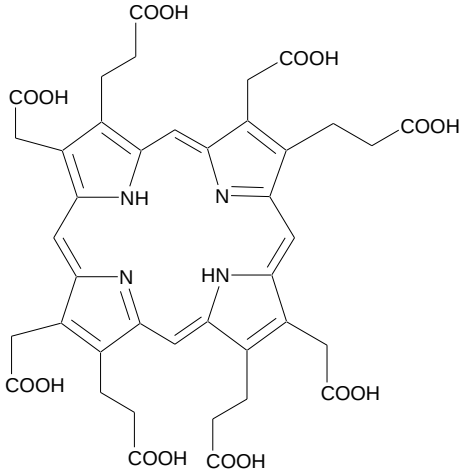
Translation an Ribosomen



Porphyrine

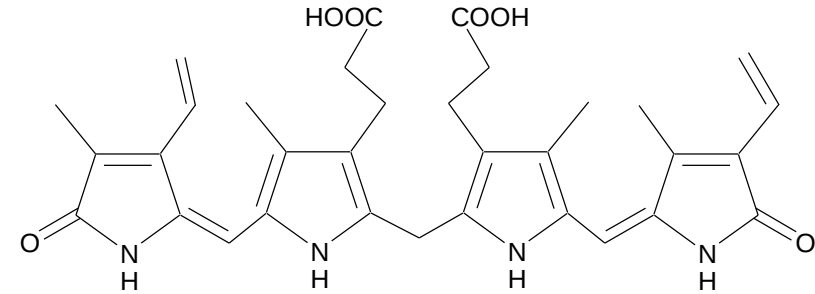
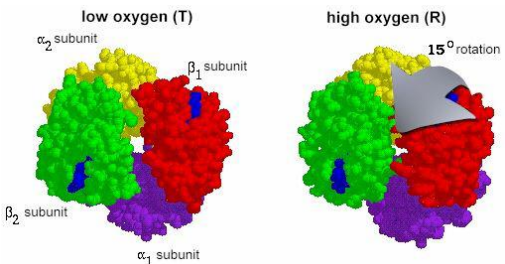
Häm : O2-Transport im Hämoglobin (Blutfarbstoff)
Cytohäm: Atmungsferment / Cytochromoxidase
Chlorophyll: Photosynthese

HÄM / PORPHYRINE

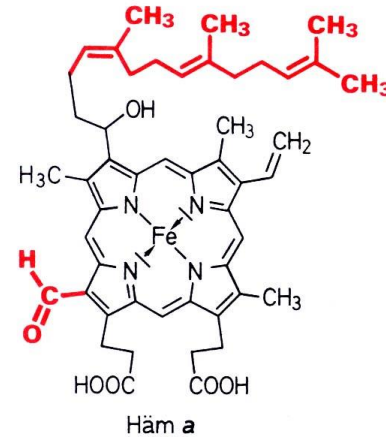


M: Fe^{2+} Häm (Blutfarbstoff)
 Mg^{2+} Chlorophyll
 Co^{2+} Vitamin B12

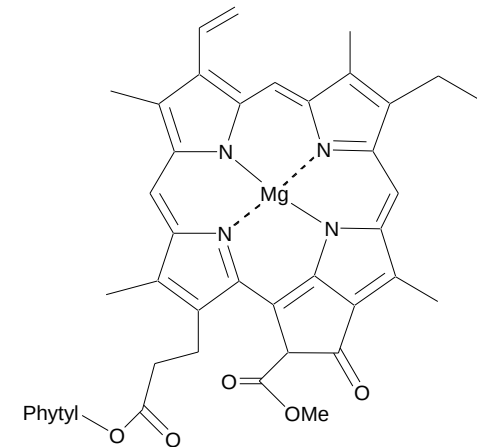
Uroporphyrin III
(Vorstufe für Häm)



Bilirubin (Abbauprodukt
des Hämoglobin in der
Leber und Galle)

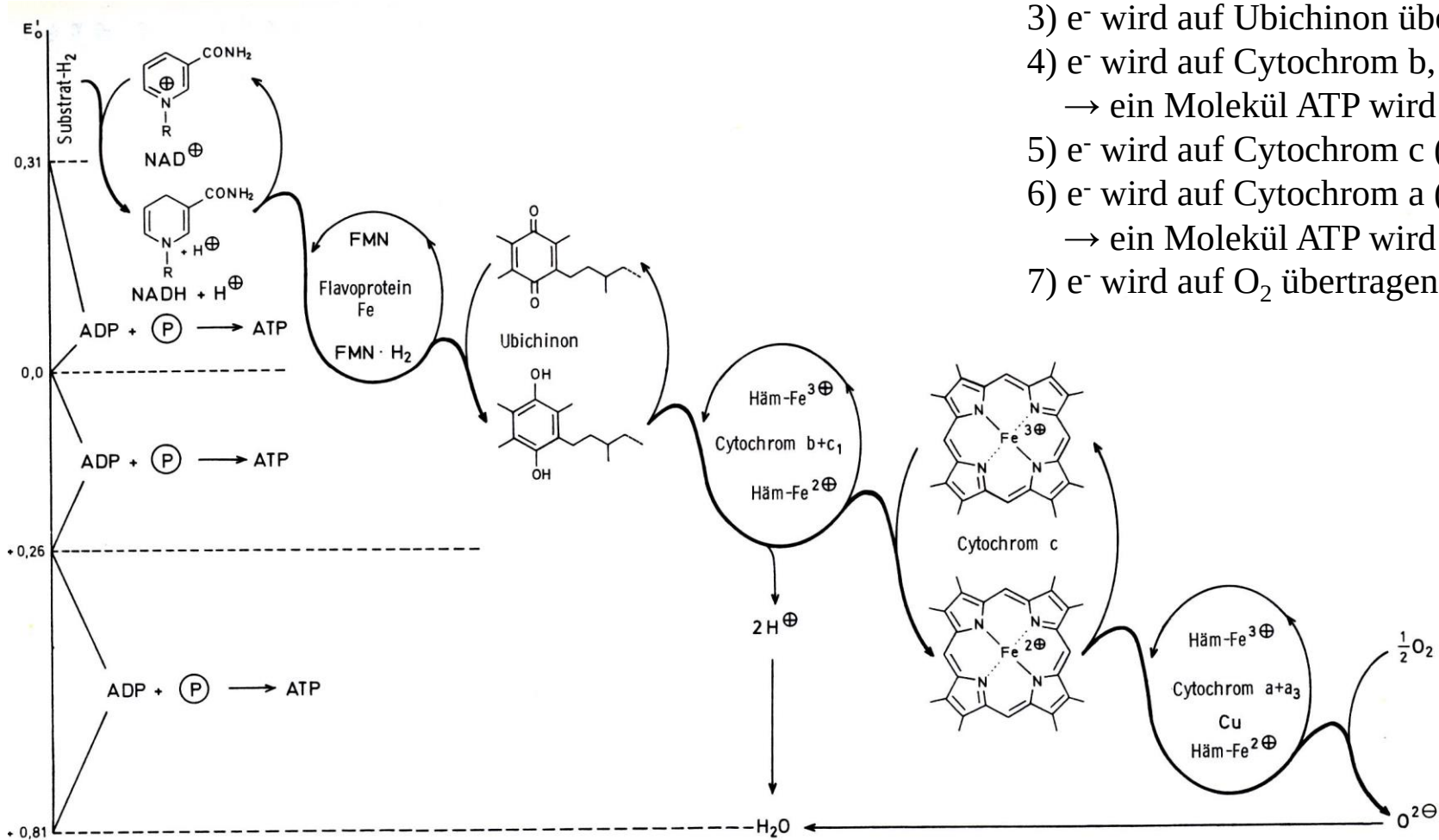


Cytohäm (Cytochrome) „PK“



Chlorophyll a

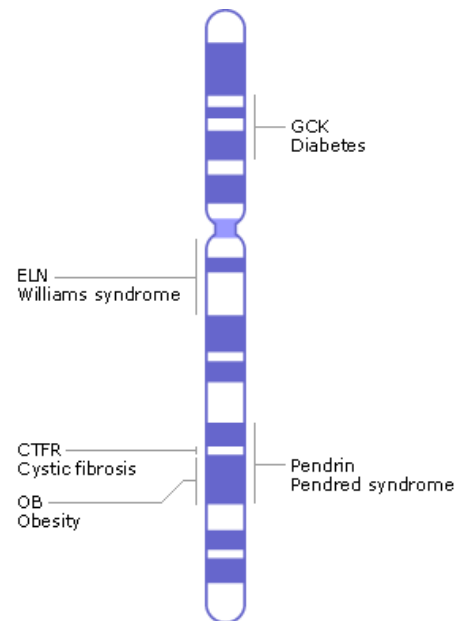
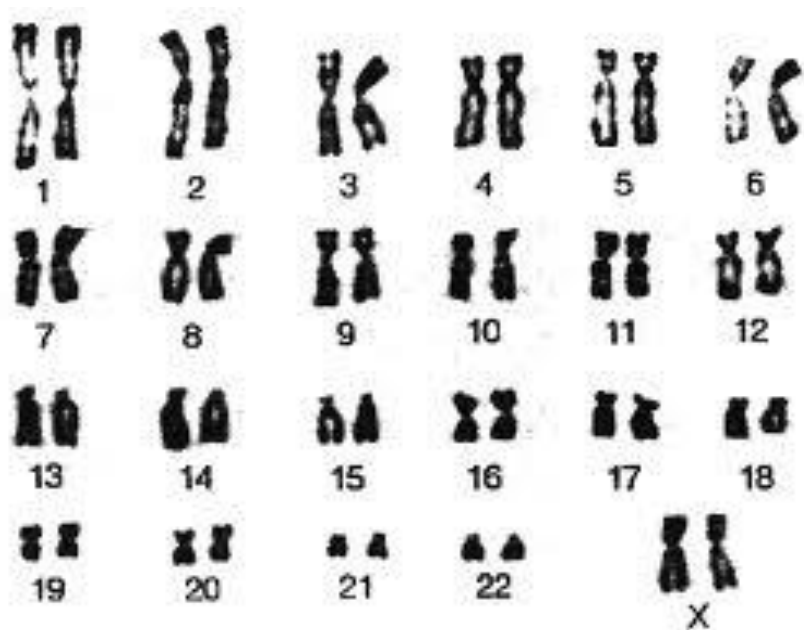
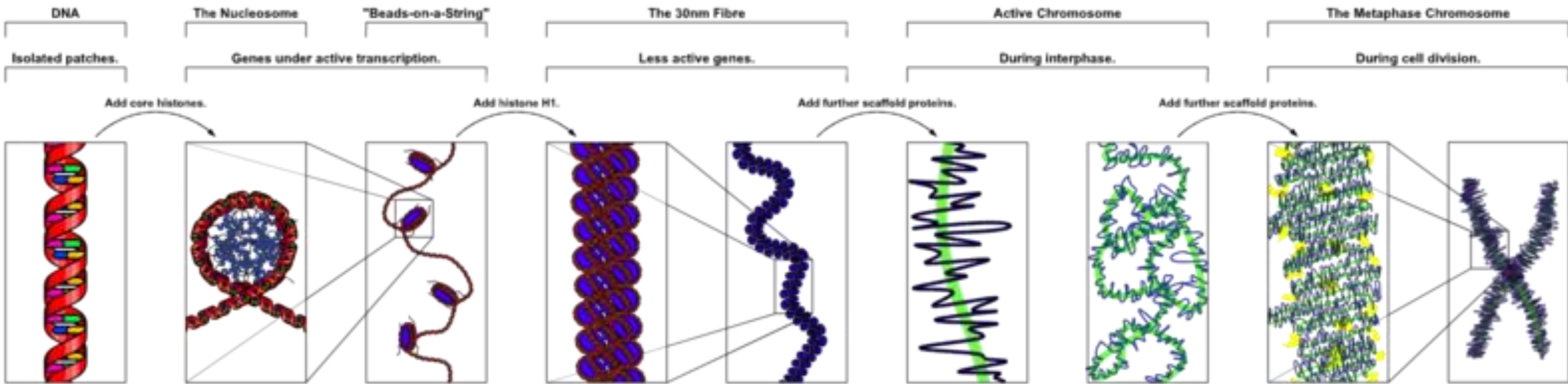
Atmungskette



- 1) Substrat wird oxidiert (dehydriert) – NAD nimmt e⁻ und H⁺ auf
- 2) NADH gibt [H] an Flavin ab
→ ein Molekül ATP wird aus ADP + P erzeugt
- 3) e⁻ wird auf Ubichinon übertragen (Ubichinon wird reduziert)
- 4) e⁻ wird auf Cytochrom b, c (Häm) übertragen
→ ein Molekül ATP wird aus ADP + P erzeugt
- 5) e⁻ wird auf Cytochrom c (Häm) übertragen
- 6) e⁻ wird auf Cytochrom a (Häm) übertragen
→ ein Molekül ATP wird aus ADP + P erzeugt
- 7) e⁻ wird auf O₂ übertragen

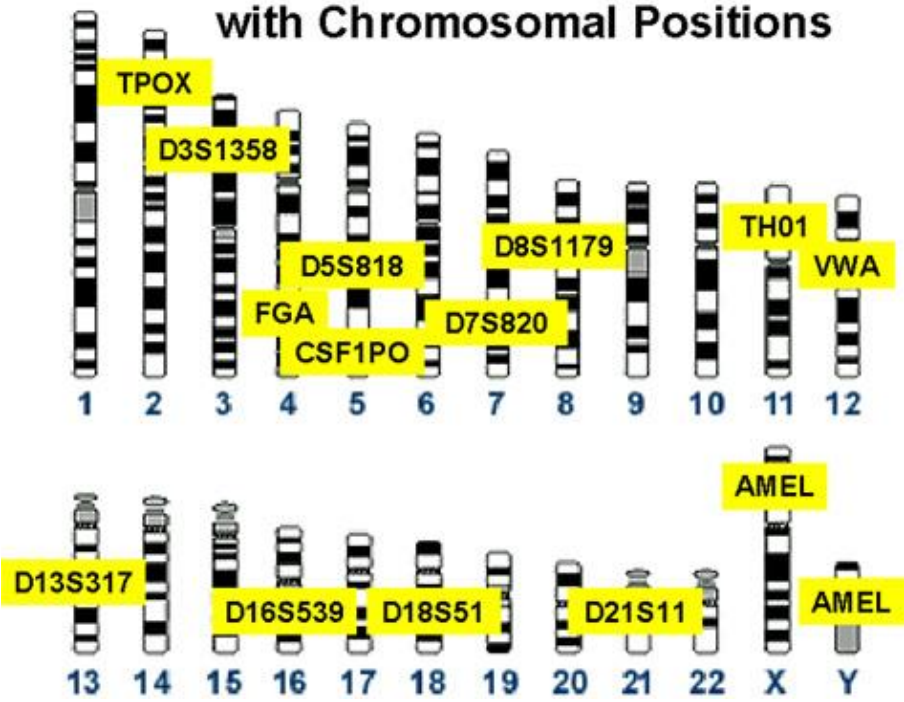
Chromosomen

Loci der Gene auf den Chromosomen



DNA FINGERPRINTING

13 CODIS Core STR Loci
with Chromosomal Positions



STR (short tandem repeats)
Number of direct repeats of sequences of 2-10 bases in the intron region
of a DNA sample

