



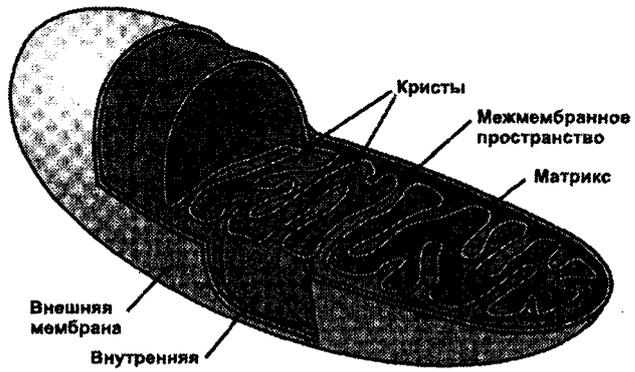
$$-E^{\circ} = -\frac{nF\Delta E^{\circ}}{RT} = -\frac{nF\Delta E^{\circ}}{2.303RT} \log K$$

I—

( )	( )		E°, V
2 +2 ~	2	2	-0,42
- + +2 +2 ~		2	-0,38
+ +2 +2 ~		2	-0,33
+ +2 ~		2	-0,32
+ +2 '		2	-0,32
1,3- +2 +2 ~	- - +	2	-0,29
( ) +2 +2 ~	2 ( )	2	-0,23
( ) +2 +2	2	2	-0,22
+2 +2 ~		2	-0,20
+2 +2 ~		2	-0,19
( ) +2 +2		2	-0,17
2+	2' ( )	1	-0,16
- + NH <sub>4</sub> <sup>+</sup> +2 +4-2 "	+ 2	2	-0,14
( ) +2 +2	2 ( )	2	-0 -0,30
+2 +2 ~		2	0,03
Q + 2H <sup>+</sup> + 2e <sup>-</sup> ~	QH <sub>2</sub>	2	0,04
+2 +2 *		2	0,06
b (+3) +	b (+2)	1	0,07
Ci (+3) + ~	I (+3)	1	0,23
(+3) + ~	(+2)	1	0,29
2 +2 +2 ~	2 2	2	0,30
+2 ~		2	0,36
NO <sub>3</sub> ( ) +2 +2 ~	NO <sub>2</sub> ~ ( ) + 2	2	0,42
(+3) + ~	3 (+2)	1	0,55
2 2 +2 +2 -	2	2	0,82

90 % )  
 2 2;  
 ( . 2). 2)  
 ( )  
 : ( )  
 );  
 3)  
 :  
 1)  
 2 ( )



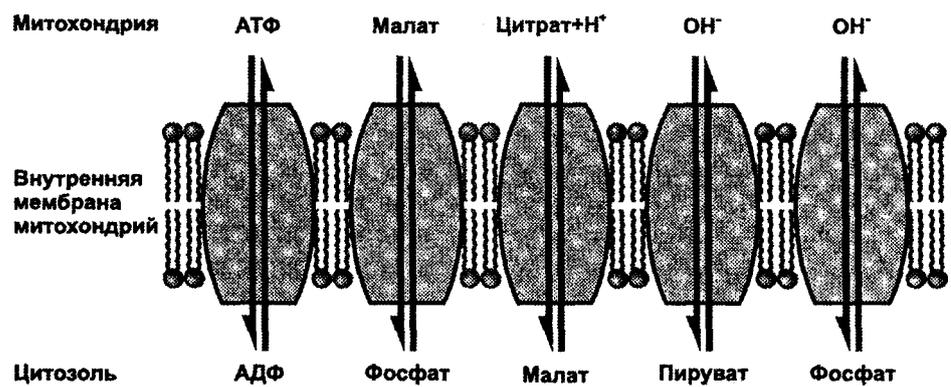


1 —

( . 2).  
 - 22 — 37 — 16 569  
 - 12S 16S , 2 — ( «  
 ( . 3).

3 —

	I	II	III	IV	
-	7 (ND1-ND6)	0	1 (Ctyfe)	3 (COI- )	2 ( 6- 8)
	-36	4	10	10	-14



---- ^ 4 1 V- ( ).

te , , Q (I, II, III, IV, V ).

: ( 2, )

> ; MX 2 4. ( )

[ ( + ( 2 ) ) -  
: , - , -  
) 70 % 30 % -

**3.**

, - -  
, ( ,  
, : 1) 2. + +  
2) , Fe<sup>3+</sup> ( + -); ( -  
(: ~), - 3. -

**4.**

+ ) ( + -  
• ). ( SH<sub>2</sub>+ + S+ + +;  
SH<sub>2</sub>+ + S+ + +.

**5.**

[ ( - + +. - ( + ( +),  
(- + +. - ( + ( +),  
, )

6.

2 ( 3. ) 1 10 ( :  
 ) 2 ( - , “). 6,7- 4.  
 + + + +

7.

+ + + + 5. -  
 , , ( »  
 - , ( ,  
 : )

8.

10<sup>~5</sup> , -  
 + + — 10 , -  
 +/ , ( Q, KoQ).  
 - + « » -  
 , 1. Q — <  
 Q  
 :  
 + , 10  
 , - QiQ.  
 , ( -  
 , ) ]

9.

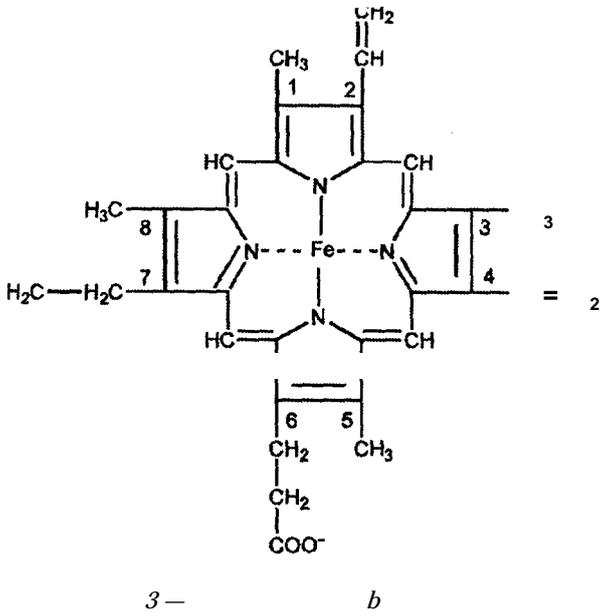
2. ( / , (QH) (QH<sub>2</sub>) coo  
 - ) 3.

1.

( ) 4. Q  
 ( ) — ,  
 6,7- , -  
 + . — 1. 5 : ,

2.

2 3<sup>2</sup> -  
 2 —



IX,

1

*Cj*

> . 1) 8-

2) 2-

( 15); 3)

4.

4 —

	~ - ( )- 2 <sup>-</sup>
	R <sub>4</sub> = - = 2
	R <sub>8</sub> = -
	R <sub>2</sub> = - = 2
	R <sub>4</sub> = - = 2
	R <sub>s</sub> = - 3
	R <sub>2</sub> = -CH(CH <sub>3</sub> )-S-R
	R <sub>4</sub> = -CH(CH <sub>3</sub> )-S-R
	R <sub>s</sub> = -CH <sub>3</sub>

6.

7.

*Fe* (*Fe*<sup>3+</sup> ; *Fe*<sup>2+</sup>)

( + +).

(*FeS*)

FeS-

Fe,

).

FeS-

( ).

FeS-

FeS-

SH-

FeS-

( ) ( . 4 ).

[2FeS-2S],

2

2

( . 46).

4

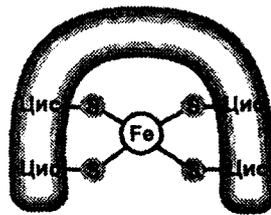
, [4Fe-4S],

4

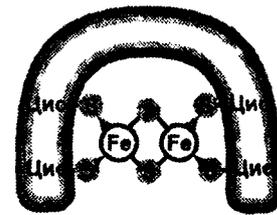
, 4

4

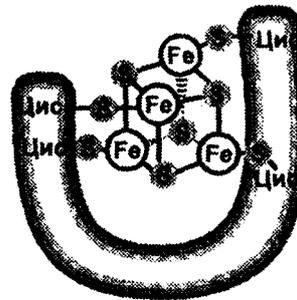
( . 4 ).



a



б



4 —

[D. L. Nelson, . . . ]

Rieske FeS- -0,65 +0,45 :  
 FeS- , Fe -  
 FeS- Fe<sup>2+</sup> Fe<sup>3+</sup> ]

4.

( , *Electron transport chain*) — I II >  
 I — ,  
 KoQ<sup>2</sup> III , KOMnnef  
 ( )  
 ( )  
 ).  
 ( .5).

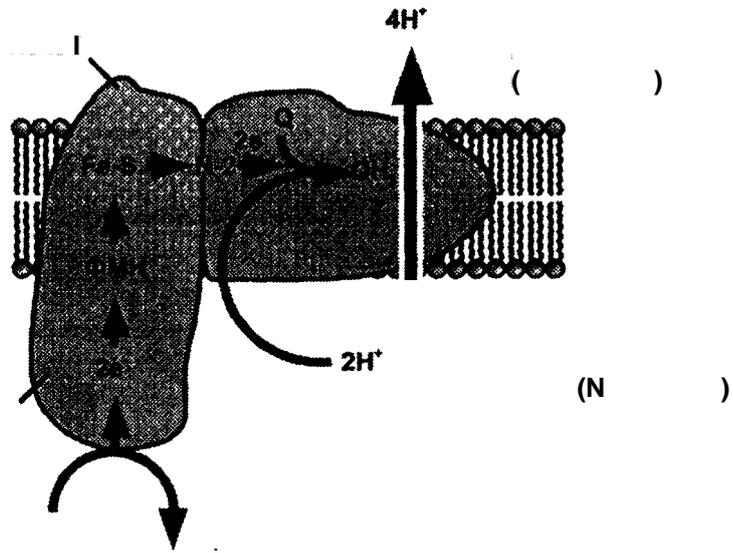
5—

	( )		{
I. ( - ^_ )	850	42 (14)	, FeS
II. ( - - )	140	5	, FeS
III. (KoQ- - )	250	11	, FeS
*	13	1	
IV. ( - )	160	13 (3-4)	, ,

. \* ; »

III IV.

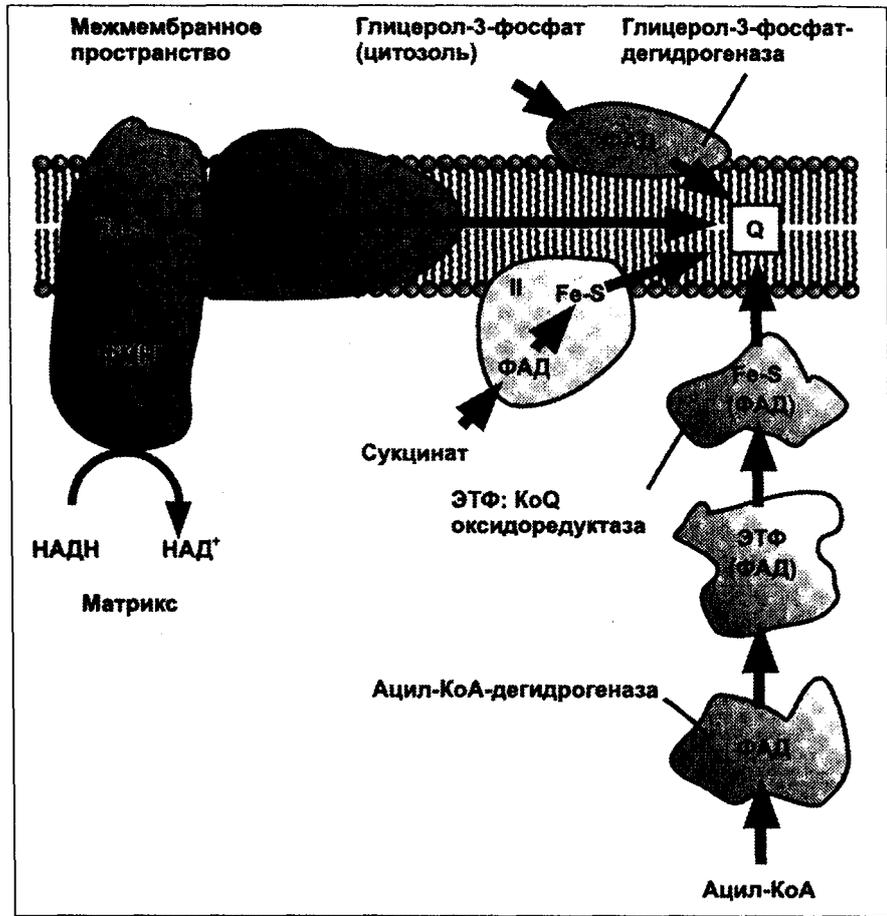
I ( - ) - ( )  
 Q ( .5) ) - , ( )  
 1. — 45 , ( — ;  
 14 , -  
 . ( - )  
 .  
 2. I,  
 ( L- -  
 ).  
 2 ~ > .....



[D. L. Nelson, . . . ]

FeS- N-2 FeS- N-2  
 ( FeS- N-2 )  
 1. II ( II )  
 2. FeS- Q.  
 3. Q.  
 4. II ( . 6).  
 5. Q.  
 6. Q (QH<sub>2</sub>)  
 I III

» + 5H<sub>n</sub><sup>+</sup> + Q -> + + QH<sub>2</sub> + 4 + ,  
 legative) — ( ), (positive) —



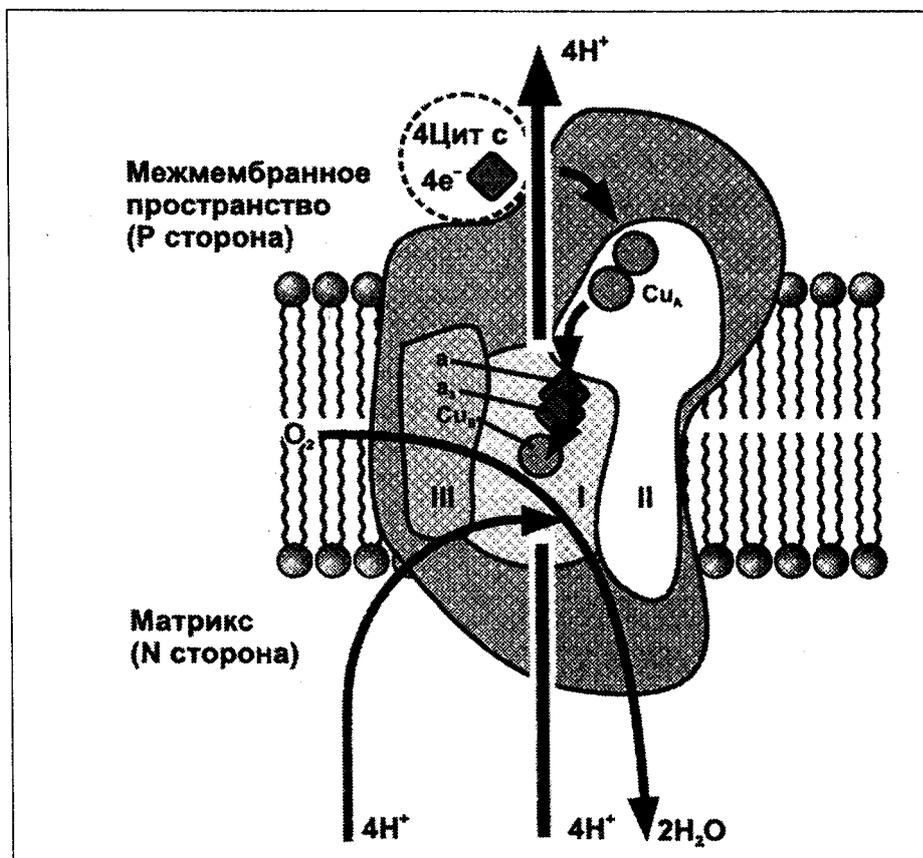
6—

[D. L. Nelson, . . . ]

-3-

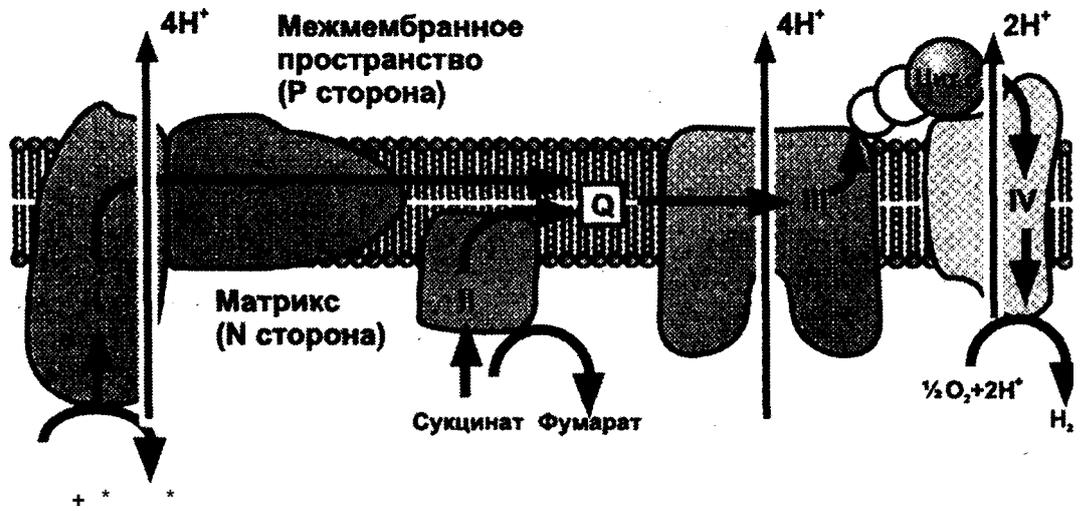
Q. 6 III  
 I, II -  
 Q ( ) :  
 III (KoQ- )  
 Q ( ) Q, <  
 KoQ- 11 !  
 & Fe-S- 2 III,  
 7. : QH<sub>2</sub>  
 Q QH b(+2) QH Fe-S (+2) +3 (+2)  
 QH b(+3) \*\* QH<sub>2</sub> Fe-S (+3) \*\* c<sub>f</sub> (+2) (+3)

III  
 :  
 -2 ( ) + 2 H<sub>N</sub><sup>+</sup> -> 4 4 +:  
 2 ( ) + 4 + . 4 ( ) + 4 " 2  
 Q- ), ( (0 ) + 2 2 .  
 : QH<sub>2</sub> (13 , . . 204 000 )  
 ( ), (Cu<sup>2+</sup> Cu<sup>1+</sup>) ( . 8).  
 III  
 IV -> Cu<sub>A</sub> -> Fe -> Fe 3<sup>-</sup>  
 « 3 »,  
 3



8—

IV [D. L. Nelson, . . . ]



9—

[D. L. Nelson, . . . ]

! , - , -

IV, -

(N 4 « » + ) , ]

2 . ]

- +

( ) 4

+ ( . 9).

Q

I II. QH<sub>2</sub>

QH<sub>2</sub>

IV, III, -

IV

4 ( . ) + 8H<sub>N</sub><sup>+</sup> + 2<sup>-</sup> ->

-> 4 ( . ) + 4<sup>+</sup> + 2<sub>2</sub> .

IV ]

H<sub>2</sub>S, HCN, (Fe<sup>3+</sup>)

Q.

( . )