

Research article

The membrane - redox potentials three - state line system dependent - full 9 stepped cycle of proton conductance is a evolution power to the new route of multicellular life.

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Abstract

We are developing the idea that the evolution based difficulty as the limitation of expansion in the number of genes because of slow developed systems of $ADP + Pi + H^+ + nH + memb.space$, and the shortage of membraneredox potentials three - state line system, lack of O_2 acceptor utilization systems in case of prokaryotes had been decided by appearance of powerful energy delivering systems as “Donators + membrane redox potentials three - state line system + $O_2 + ADP + Pi + H^+ + nH + memb.space = (ATP + heat energy) + H_2O + nH + matrix + CO_2$ ” (Ambaga and Tumen - Ulzii, 2015).

The endosymbiosis process was one of favourable preconditions to develop the powerful energy delivering systems as “Donators + membrane redox potentials three - state line system + $O_2 + ADP + Pi + H^+ + nH + memb.space = (ATP + heat energy) + H_2O + nH + matrix + CO_2$ ” (Ambaga and Tumen-Ulzii, 2015) and the high organized bioenergetic membranes, followed by mitochondria based distribution of DNA.



It can be say that during evolution development of living cells the shift from one cell to multicells had been accompanied with their metabolic system improvement as first slow developed systems as $ADP + Pi + H^+ + nH + memb.space$ had converted to powerful energy delivering systems as “Donators + membraneredox potentials three - state line system + $O_2 + ADP + Pi + H^+ + nH + memb.space = (ATP + heat energy) + H_2O + nH + matrix + CO_2$ ” (Ambaga and Tumen-Ulzii, 2015).

Key words: the membrane - redox potentials three - state line system dependent - full 9 stepped cycle of proton conductance, powerfull bioenergetic potentials, acceptor O_2 dependent regulations. **Copyright © WJSRR, all rights reserved.**

Introduction

The eukaryotic cell arose from prokaryotes just once in four billion years. But prokaryotes show no tendency to evolve greater complexity by this reason that bioenergetic potentials for prokaryotic cell genome was not enough to decide this problems(*Nick Lane , William Martin, 2010*).

This explanation demonstrated that prokaryotes had not so powerfull bioenergetic potentials as the membrane - redox potentials three - state line system dependent - full 9 stepped cycle of proton conductance .

From “Donators + membraneredox potentials three - state line system + $O_2 + ADP + Pi + H^+ + nH + memb.space = (ATP + heat energy) + H_2O + nH + matrix + CO_2$ ” (Ambaga and Tumen-Ulzii, 2015) equation members, prokaryotes had only the slow developed systems as $ADP + Pi + H^+ + nH + memb.space$, but had not the membraneredox potentials three - state line system , acceptor O_2 dependent regulations .

This evolution based difficulty had been decided by this that the endosymbiosis that gave rise to mitochondria restructured the distribution of DNA in relation to bioenergetic membranes, which have been powered by powerful systems as “Donators + membrane redox potentials three - state line system + $O_2 + ADP + Pi + H^+ + nH + memb.space = (ATP + heat energy) + H_2O + nH + matrix + CO_2$ ” (Ambaga and Tumen-Ulzii, 2015) .

Results and conclusion

The eukaryotic cell arose from prokaryotes just once in four billion years. But prokaryotes show no tendency to evolve greater complexity by this reason that bioenergetic potentials for prokaryotic cell genome was not enough to decide this problems (*Nick Lane, William Martin, 2010*).

This explanation demonstrated that prokaryotes had not so powerfull bioenergetic potentials as the membrane - redox potentials three - state line system dependent - full 9 stepped cycle of proton conductance .

From the basic members ,belong to systems as “Donators + membraneredox potentials three - state line system + O₂ + ADP + Pi + H⁺ + nH + memb.space = (ATP + heat energy) + H₂O + nH + matrix + CO₂” (Ambaga and Tumen-Ulzii, 2015), prokaryotes of this time had only the slow developed systems as ADP + Pi + H⁺ + nH + memb.space, but had not the membrane redox potentials three - state line system, acceptor O₂ dependent regulations.

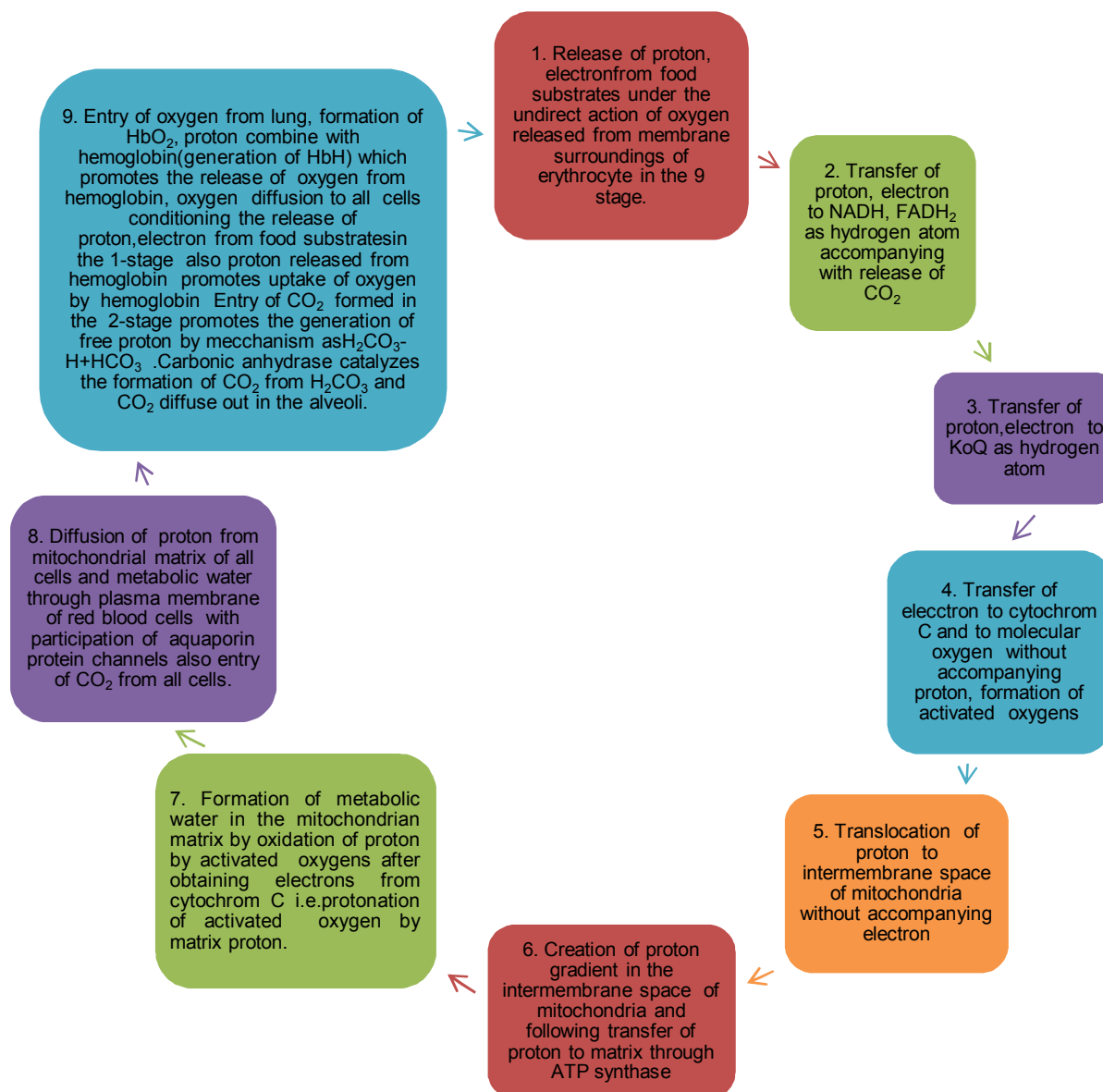
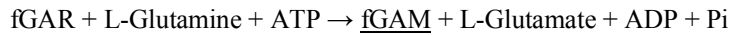
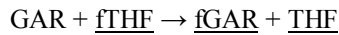


Figure 1. The membrane - redox potentials three - state line system dependent - full 9 stepped cycle of proton conductance inside human body.

Without the powerful energy delivering systems as the membrane - redox potentials three - state line system dependent - full 9 stepped cycle of proton conductance was impossible the synthesis of DNA, because biosynthesis of purine and pyrimidine bases are carried out with participation of enough quantity of ATP molecules which formed in the 6-th stage of this cycle.



Purines are biologically synthesized as nucleotides and in particular as ribotides, A key regulatory step is the production of 5-phospho- α -D-ribosyl 1-pyrophosphate (PRPP) by ribose phosphate pyrophosphokinase, The first committed step is the reaction of PRPP, glutamine and water to 5'-phosphoribosylamine (PRA), glutamate, and pyrophosphate - catalyzed by amidophosphoribosyltransferase, which is activated by PRPP



We are developing the idea that the evolution based difficulty as the limitation of expansion in the number of genes because of slow developed systems of $\text{ADP} + \text{Pi} + \text{H}^+ + \text{nH} + \text{memb.space}$, and the shortage of membraneredox potentials three - state line system, lack of O_2 acceptor utilization systems in case of prokaryotes had been decided by appearance of powerful energy delivering systems as “Donators + membraneredox potentials three - state line system + $\text{O}_2 + \text{ADP} + \text{Pi} + \text{H}^+ + \text{nH} + \text{memb.space} = (\text{ATP} + \text{heat energy}) + \text{H}_2\text{O} + \text{nH} + \text{matrix} + \text{CO}_2$ ” (Ambaga and Tumen-Ulzii, 2015).

The endosymbiosis process was one of favourable preconditions to develop the powerful energy delivering systems as “Donators + membrane redox potentials three - state line system + $\text{O}_2 + \text{ADP} + \text{Pi} + \text{H}^+ + \text{nH} + \text{memb.space} = (\text{ATP} + \text{heat energy}) + \text{H}_2\text{O} + \text{nH} + \text{matrix} + \text{CO}_2$ ” (Ambaga and Tumen-Ulzii, 2015) and the high organized bioenergetic membranes, followed by mitochondria based distribution of DNA .

It can be say that during evolution development of living cells the shift from one cell to multicells had been accompanied with their metabolic system improvement as first slow developed systems as $\text{ADP} + \text{Pi} + \text{H}^+ + \text{nH} + \text{memb.space}$ had converted to powerful energy delivering systems as “Donators + membrane redox potentials three - state line system + $\text{O}_2 + \text{ADP} + \text{Pi} + \text{H}^+ + \text{nH} + \text{memb.space} = (\text{ATP} + \text{heat energy}) + \text{H}_2\text{O} + \text{nH} + \text{matrix} + \text{CO}_2$ ” (Ambaga and Tumen-Ulzii, 2015) .

The appearance of mitochondrial power systems as “Donators + membrane redox potentials three - state line system + $\text{O}_2 + \text{ADP} + \text{Pi} + \text{H}^+ + \text{nH} + \text{memb.space} = (\text{ATP} + \text{heat energy}) + \text{H}_2\text{O} + \text{nH} + \text{matrix} + \text{CO}_2$ ” (Ambaga and Tumen-Ulzii, 2015) give the possibility to expansion in the number of genes and the new route to multicellular life.

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