



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL  
OF CURRENT RESEARCH

International Journal of Current Research  
Vol. 14, Issue, 11, pp.22764-22766, November, 2022  
DOI: <https://doi.org/10.24941/ijcr.44219.11.2022>

## RESEARCH ARTICLE

### TO QUESTION OF ELUCIDATION OF EIGHTH AND NINTH STAGES OF THE MEMBRANE REDOXY POTENTIAL THREE STATE DEPENDENT 9 STEPPED FULL CYCLE OF PROTON CONDUCTANCE IN THE HUMAN BODY

\*Ambaga, M., Tumen-Ulzii, A. and Buyantushig, T.

New Medicine Medical University, Ulanbator, Mongolia

#### ARTICLE INFO

##### Article History:

Received 14<sup>th</sup> August, 2022  
Received in revised form  
08<sup>th</sup> September, 2022  
Accepted 15<sup>th</sup> October, 2022  
Published online 30<sup>th</sup> November, 2022

##### Key words:

Respiratory Membrane- Pulmonary  
Circuit, Respiring tissue.

##### \*Corresponding Author:

Ambaga, M.,

#### ABSTRACT

We had been established that it is existed a close relationship between following two expressions as Life has become dependent from presence of protons and electrons which were formed during the events called Big Bang 15 years ago and the presence of protons from peripheral tissues favors the formation of salt bridge in histidine residue of beta subunits( HarpersBiochemistry). In this connection, it is raised a principal important questions as in which stages of the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance has been occurred the relationship between a expressions as Life has become dependent from presence of protons and a expressions as the presence of protons from peripheral tissues favors the formation of salt bridge in histidine residue of beta subunits. It was became clear that, 9-th stage-Respiratory membrane - Pulmonary circuit-increase of oxygen uptake from alveolar air -under effect of increased bicarbonate entry by bicarbonate / chloride ion shift mechanism, leading to increase of HbO<sub>2</sub> formation, 8- th stage- Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism, Release of oxygen from HbO<sub>2</sub> -under effect of exit of bicarbonate by bicarbonate exit / chloride ion entry shift mechanism , leading to increase of oxygen in a mitochondrial - 6-th stage, gives the possibility to find the scientific relationship between a expressions as Life has become dependent from presence of protons and a expressions as the presence of protons from peripheral tissues favors the formation of salt bridge in histidine residue of beta subunits.

Copyright©2022, Ambaga et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Ambaga, M., Tumen-Ulzii, A. and Buyantushig, T. 2022. "Prevalence of human immunodeficiency virus among blood donors in Chidambaram". International Journal of Current Research, 14, (11), 22764-22766.

## INTRODUCTION

It would be very interesting a question as how has been created one unique system of proton, electron conductance ,including a interconnection between a first 1-7 stages of proton conductance of mitochondrial location with 8-the stage of Pulmonary circuit location and interconnection between 8-the stage of proton conductance of Pulmonary circuit location and 9 stage of proton conductance of Pulmonary circuit location and interconnection between following, subsequent first stages of proton conductance of mitochondrial location with previous, preceding 9-the stage of proton conductance Pulmonary circuit location during evolution development of living organisms. What about 8- th stage of closed proton, conductance, where conducted such processes in the Erythrocyte membrane surroundings located in capillary vessels of Respiring tissues a increase of Bicarbonate entry and a decrease of chlore ion entry resulting to release of oxygen from salt bridge in Histidine residue in direction to mitochondria of 50-87 trillion cells .The increase of Bicarbonat exit , increase of free protons -H+ HbO<sub>2</sub>=O<sub>2</sub>+HbH has been leaded to release of oxygen to 6- th stage of proton conductance of mitochondrial location. This our explanation has been approved by following interpretation as Harpers Biochemistry-Twenty second edition , p.54 ...the presence of protons from peripheral tissues favors the formation of salt bridge by protonating the terminal

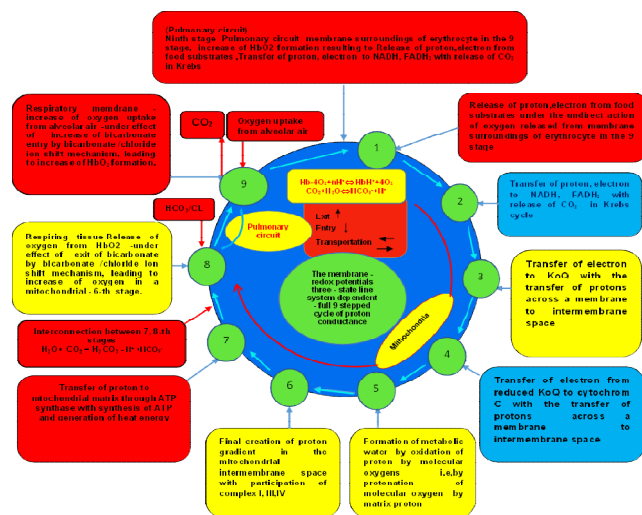
Histidine residue of the beta subunits .Re-formation of the salt bridges facilitates the release of oxygen from oxygenated (R form) hemoglobin . Overall an increase in protons causes oxygen release, while an increase in oxygen causes proton release . The former can be represented in oxygen dissociation curve by a rightward shift in the dissociation curve upon increasing protons- hydrogen ion.

## RESULTS AND DISCUSSION

It was became clear that, 9-th stage-Respiratory membrane - Pulmonary circuit-increase of oxygen uptake from alveolar air -under effect of increased bicarbonate entry by bicarbonate / chloride ion shift mechanism, leading to increase of HbO<sub>2</sub> formation, meanwhile,8-th stage- Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism, Release of oxygen from HbO<sub>2</sub> -under effect of exit of bicarbonate and chloride ion entry shift mechanism, leading to increase of oxygen in a mitochondrial - 6-th stage, gives the possibility to find the scientific relationship between a expressions as Life has become dependent from presence of protons and a expressions as the presence of protons from peripheral tissues favors the formation of salt bridge in histidine residue of beta subunits .

In such way it is existed a close relationship between following two expressions as Life has become dependent from presence of protons and electrons which were formed during the events called Big Bang 15 years ago and a expressions as the presence of protons from peripheral tissues favors the formation of salt bridge in histidine residues of hemoglobin (Harpers , p.54). This is before making the elucidation relating to interconnection between a first 1-7 stages of proton conductance of mitochondrial location and 8-the stage of proton conductance of Pulmonary circuit location and also, the interconnection between 8-the stage of proton conductance of Pulmonary circuit location with 9-th stage of proton conductance of Pulmonary circuit location and interconnection between following, subsequent 1- stage of proton conductance of mitochondrial location with previous, preceding , foregoing 9-the stage of Pulmonary circuit location during evolution development of living organisms:

At first time, we revealed that the full 9 stepped cycle of proton conductance inside human body, which starts as release of proton, electron from food substrates under the undirect action of oxygen released from membrane surroundings of erythrocyte in the 9 stage by a closed loop figure. In the framework of biological events as “the membrane redox potential three state dependent 9 stepped full cycle of proton conductance” would be conducted a following processes as: First stage - Release of proton, electron from food substrates under the undirect action of oxygen released from membrane surroundings of erythrocyte in the 9 stage Second stage - Transfer of proton, electron to NADH, FADH<sub>2</sub> with release of CO<sub>2</sub> in Krebs cycle Third stage - Transfer of electron to KoQ with the transfer of protons across a membrane to intermembrane space Fourth stage - Transfer of electron from reduced KoQ to cytochrom C with the transfer of protons across a membrane to intermembrane space 5. Fifth stage - Formation of metabolic water in the mitochondrian matrix by oxidation of proton by molecular oxygens i.e, by protonation of molecular oxygen by matrix proton with participation cytochrome C oxidase within complex IV. Sixth stage - Final creation of proton gradient in the mitochondrial intermembrane space with participation of complex I, III, IV.



Seventh stage - Transfer of proton to mitochondrial matrix through ATP synthase with synthesis of ATP and generation of heat energy. Eighth stage - Entry of three important factors to erythrocytes as protons are exited in the form of metabolic water from mitochondrial matrix of all cells and entered in the form of HCO<sub>3</sub> through plasma membrane of red blood cells, also entry of CO<sub>2</sub> formed in the 2-stage of closed cycle and entry of oxygen from lung. Ninth stage - Proton combine with hemoglobin (generation of HbH) which promotes the release of oxygen from hemoglobin, oxygen diffusion to all cells conditioning the release of proton, electron from food substrates in the 1-stage also proton released from hemoglobin promotes uptake of oxygen by hemoglobin, CO<sub>2</sub> promotes the generation of free proton by mechanism as H<sub>2</sub>CO<sub>3</sub> = H + HCO<sub>3</sub>, carbonic anhydrase catalyzes the formation of CO<sub>2</sub> from H<sub>2</sub>CO<sub>3</sub> and CO<sub>2</sub> diffuse out in the alveoli.

This is after making the elucidation relating to interconnection between a first 1-7 stages of proton conductance of mitochondrial location and 8-the stage of proton conductance of Pulmonary circuit location and also, the interconnection between 8-the stage of proton conductance of Pulmonary circuit location with 9 -th stage of proton conductance of Pulmonary circuit location and interconnection between following, subsequent 1- stage of proton conductance of mitochondrial location with previous, preceding , foregoing 9-the stage of Pulmonary circuit location during evolution development of living organisms:

The pulmonary circulation is a division of the circulatory system in all vertebrates. The circuit begins with deoxygenated blood returned from the body to the right atrium of the heart where it is pumped out from the right ventricle to the lungs. In the lungs the blood is oxygenated and returned to the left atrium to complete the circuit.<sup>[1]</sup> The other division of the circulatory system is the systemic circulation that begins with receiving the oxygenated blood from the pulmonary circulation into the left atrium. From the atrium the oxygenated blood enters the left ventricle where it is pumped out to the rest of the body, returning as deoxygenated blood back to the pulmonary circulation in such way 9- th stage-Respiratory membrane - Pulmonary circuit-increase of oxygen uptake from alveolar air - under effect of increase of bicarbonate entry by bicarbonate / chloride ion shift mechanism, leading to increase of HbO<sub>2</sub> formation, 8- th stage- Respiratory membrane- Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO<sub>2</sub> -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-th stage. -First stage - Release of proton, electron from food substrates under the undirect action of oxygen released from membrane surroundings of erythrocyte in the 9 stage. Second stage - Transfer of proton, electron to NADH, FADH<sub>2</sub> with release of CO<sub>2</sub> in Krebs cycle. Third stage - Transfer of electron to KoQ with the transfer of protons across a membrane to intermembrane space Fourth stage - Transfer of electron from reduced KoQ to cytochrom C with the transfer of protons across a membrane to intermembrane space 5. Fifth stage - Formation of metabolic water in the mitochondrian matrix by oxidation of proton by molecular oxygens i.e, by protonation of molecular oxygen by matrix proton with participation cytochrome C oxidase within complex IV 6.Sixth stage - Final creation of proton gradient in the mitochondrial intermembrane space with participation of complex I, III, IV 7. Seventh stage - Transfer of proton to mitochondrial matrix through ATP synthase with synthesis of ATP and generation of heat energy 8.Eighth stage- Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO<sub>2</sub> -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism , leading to increase of oxygen in a mitochondrial - 6-th stage. 9. Ninth stage -Respiratory membrane - Pulmonary circuit-increase of oxygen uptake from alveolar air -under effect of increase of bicarbonate entry by bicarbonate / chloride ion shift mechanism , leading to increase of HbO<sub>2</sub> formation, resulting to Release of proton, electron from food substrates under the undirect action of oxygen released from membrane surroundings of erythrocyte in the 8-th stage, Transfer of proton, electron to NADH, FADH<sub>2</sub> with release of CO<sub>2</sub> in Krebs cycle.

## REFERENCES

- Ambaga M, Tumen-Ulzii A. 2016. Integrated NCM medicine with s- NCM new knowledge, Lambert Academic Publishing.
- Ambaga M, Tumen-Ulzii A. 2015. The life become dependent from the presence of electrons and protons, which were formed during events called big bang 15 billion years ago, electrons and protons sets the stage for formation of life in the universe
- Ambaga M. 2016. The Full Cycle of Proton and Electron Conductance inside the Human Body, Consisting of 9 Linked Stages. *Acad. J. Sci. Res.*, 4(6): 127-131.

- Ambaga M. 2016. A new suggestion about existing of membrane - redox potential three state line system between donators and acceptors inside the living cells, *Asian Journal of Science and Technology*, Vol.07, Issue,07,pp.3157-3161.
- Ambaga M. 2016. The buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the Full Cycle of Proton and Electron Conductance inside the Human Body. *International Journal of Development Research*, Vol 06, Issue, 07, pp. 8458-8461.
- Ambaga M. 2016. The Full Cycle of Proton and Electron Conductance inside the Human Body and triple Rlung, Mkhris, Badgan theory of Tibetan Traditional medicine, *International Journal of Current Research*, Vol 8, Issue 08, p.36391-36393.
- Ambaga M. 2016. The possibility to drive the membrane - redox potential, a three state line system dependent-full 9 stepped cycle of proton conductance inside human body to favorable direction during pathological situations., *International Journal of Current Research*, Vol, Issue, 11, pp 42456-42459, November.
- Ambaga M. 2017. The membrane-redox potentials three-state line system dependent -full 9 stepped cycle of proton conductance and the evolution based biological mechanism of oxygen utilization -ATP making bioenergy systems, *World Journal of Scientific Research and Review*, 2017.vol.5,№ 3,march,pp.8-13.
- Ambaga M. 2017. The membrane-redox potentials three-state line system dependent -full 9 stepped cycle of proton conductance and the evolution based biological mechanism of organ formation, *World Journal of Scientific Research and Review*, vol.5,№ 3,march,pp.1-7.
- Ambaga M. 2017. The membrane-redox potentials three-state line system dependent -full 9 stepped cycle of proton conductance as the universal metabolic formula and the development of all medical thinking during last 3000 years, *Asian Journal of Science and technology*, vol.08,Issue,03,pp.4485-4488, March,
- Ambaga M. 2017. The full 9 stepped cycle of proton conductance and the two basic electron, proton dependent metabolic reaction system of obtaining of ATP, *Applied Science and innovative Research*, vol.1, No 1, pp 63-68 .
- Ambaga M. 2017. The bioevolution link between the two basic electron, proton dependent metabolic reaction systems of obtaining of ATP, *International Journal of Current Research*, vol 9, issue 06, pp.52182-52185.
- Ambaga M. 2017. The genome size and the two basic electron, proton dependent metabolic reaction systems of obtaining of ATP, *International Journal of Current Research*, vol 9, issue 06, pp.52771-52774.
- Ambaga M, Tumen-Ulzii A, 2017. The full 9 stepped cycle of proton conductance and antispiral-like evolutionary back steps from second late evolution time equation to first early evolution time equation during some pathology, *International Journal of Current Research*, vol 9, issue 07, pp.54969-54972.
- Ambaga M, Tumen-Ulzii A, 2017. The full 9 stepped cycle of proton conductance and the formation of three zones with various degree of disturbances of clockwise normal flow of electrons and protons during shortage of donators and acceptors- *Asian Journal of Science and technology*, vol.08, Issue, 08, pp.5346-5349,
- Boyer, P. D. "Energy Capture and Use in Plants and Bacteria. Final Technical Report", University of California Los Angeles. UCLA), United States Department of Energy., December 31, 1993)
- Harpers Biochemistry-Twenty second Edition
- Nick Lane, and William F. Martin. 2012. The origin of membrane bioenergetics J.cell, <http://dx.doi.org/10.1016/j.cell.2012.11.050>.
- Nick Lane, The vital question. Energy, Evolution and the origins of Complex life) <https://en.wikipedia.org/wiki/Biosphere>
- Víctor Sojo, Andrew Pomiankowski, Nick Lane, 2014. A Bioenergetic Basis for Membrane Divergence in Archaea and Bacteria, Published: August 12, 2014, <http://dx.doi.org/10.1371/journal.pbio.1001926>
- Walker, J. E.; Saraste, M; Runswick, M. J.; Gay, N. J. 1982. "Distantly related sequences in the alpha- and beta-subunits of ATP synthase, myosin, kinases and other ATP-requiring enzymes and a common nucleotide binding fold". *The EMBO Journal*, 1(8): 945-51. doi:10.1002/j.1460-2075.1982.tb01276.x. PMC 553140. PMID 6329717
- <https://en.wikipedia.org/wiki/Thermogenesis>
- <https://en.wikipedia.org/wiki/Glycolysis>
- <https://en.wikipedia.org/wiki/Thermogenesis>
- [https://en.wikipedia.org/wiki/Brown\\_adipose\\_tissue](https://en.wikipedia.org/wiki/Brown_adipose_tissue)
- <https://www.biologydiscussion.com/biochemistry/lipids-biochemistry/oxidation-of-fatty-acids-biochemistry/72756>
- [https://en.wikipedia.org/wiki/Adenosine\\_triphosphate](https://en.wikipedia.org/wiki/Adenosine_triphosphate)
- [https://en.wikipedia.org/wiki/Bohr\\_effect](https://en.wikipedia.org/wiki/Bohr_effect)
- [https://en.wikipedia.org/wiki/Haldane\\_effect](https://en.wikipedia.org/wiki/Haldane_effect)
- [https://en.wikipedia.org/wiki/Pulmonary\\_circulation](https://en.wikipedia.org/wiki/Pulmonary_circulation)

\*\*\*\*\*