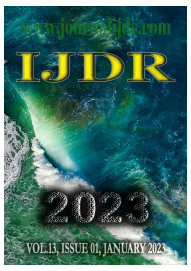
ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 13, Issue, 01, pp. 61371-61374, January, 2023
https://doi.org/10.37118/ijdr.26168.01.2023



RESEARCH ARTICLE OPEN ACCESS

THE SYSTEM MODELS AND THE BUFFERING CAPACITY OF ERYTHROCYTE MEMBRANE SURROUNDINGS IN RELATION TO PROTONS, FORMED IN 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 11th November, 2022
Received in revised form
22nd November, 2022
Accepted 16th December, 2022
Published online 27th January, 2023

KeyWords:
Respiratory membrane, Respiring tissue, System models, Buffering capacity.

****Corresponding author:***
Dr. Tulika Mishra

ABSTRACT

By our suggestion, the buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the first 1-7 stages of proton conductance have implemented within Eight stage of 9 staged full closed cycle of proton conductance -located in theRespiring tissues -capillary blood which are existed around 87 trillion cells,Pulmonary circuit, where occurred oxygen unloadingunder effect of increased bicarbonate exit by bicarbonate/chloride ion shift mechanism, leading to increase of protons released from NADH, FADH,reduced KoQ resulting to entry of protons to erythrocyte membrane surroundings, all these processes described as the presence of protons from peripheral tissues favors the formation of salt bridges by protonating the terminal His residue of the betta subunits, an increase in protons causes oxygen release, while an increase in oxygen causes protonrelease,the hydrogen ions (protons) tend to displace the oxygen from the hemoglobin,protons promote oxygen unloading, which are inseparable parts– basic components of the System models of the Human body , including the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance and the four compartments, also the 10 functional systems, and four types of cells, distinguished by difference of proton conductance.

Citation: ***Ambaga, M., Tumen-Ulzii, A. and Buyantushig, T. 2023.*** "The system models and the buffering capacity of erythrocyte membrane surroundings in relation to protons, formed in the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance in the human body", *International Journal of Development Research*, 13, (01), 61371-61374.

INTRODUCTION

We described at first time the System models, including the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance including the four compartments, the 10 main functional systems and four types of cells, distinguished by difference of proton conductance by using the new conception as 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 betta subunits (HarpersBiochemistry). 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 would be appeared in the 8-th stage of the full cycle as the diffusion of proton from mitochondrial matrix of all cells and metabolic water through plasma membrane of red blood cells also entry of CO_2 from all cells.

Quantity of free protons inside of erythrocyte membrane surroundings at 8- stage of cycle would make the remarkable influence to the buffering capacity of erythrocyte membrane surroundings in relation to protons, formed in the full cycle of proton and electron conductance and to diffusion speed of oxygen to 14 trillion cells that is, more protons inside of erythrocyte membrane surroundings more oxygen delivery to body cells by mechanisms as an increase in protons causes oxygen release, while an increase in oxygen causes proton release.

RESULTS AND CONCLUSION

By our suggestion, the buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the first 1-7 stages of proton conductance have implemented within Eight stage of 9 staged full closed cycle of proton conductance -located in theRespiring tissues -capillary blood which are existed around 87 trillion cells, Pulmonary circuit, where occurred oxygen unloading under effect of increased bicarbonate exit by bicarbonate/chloride ion

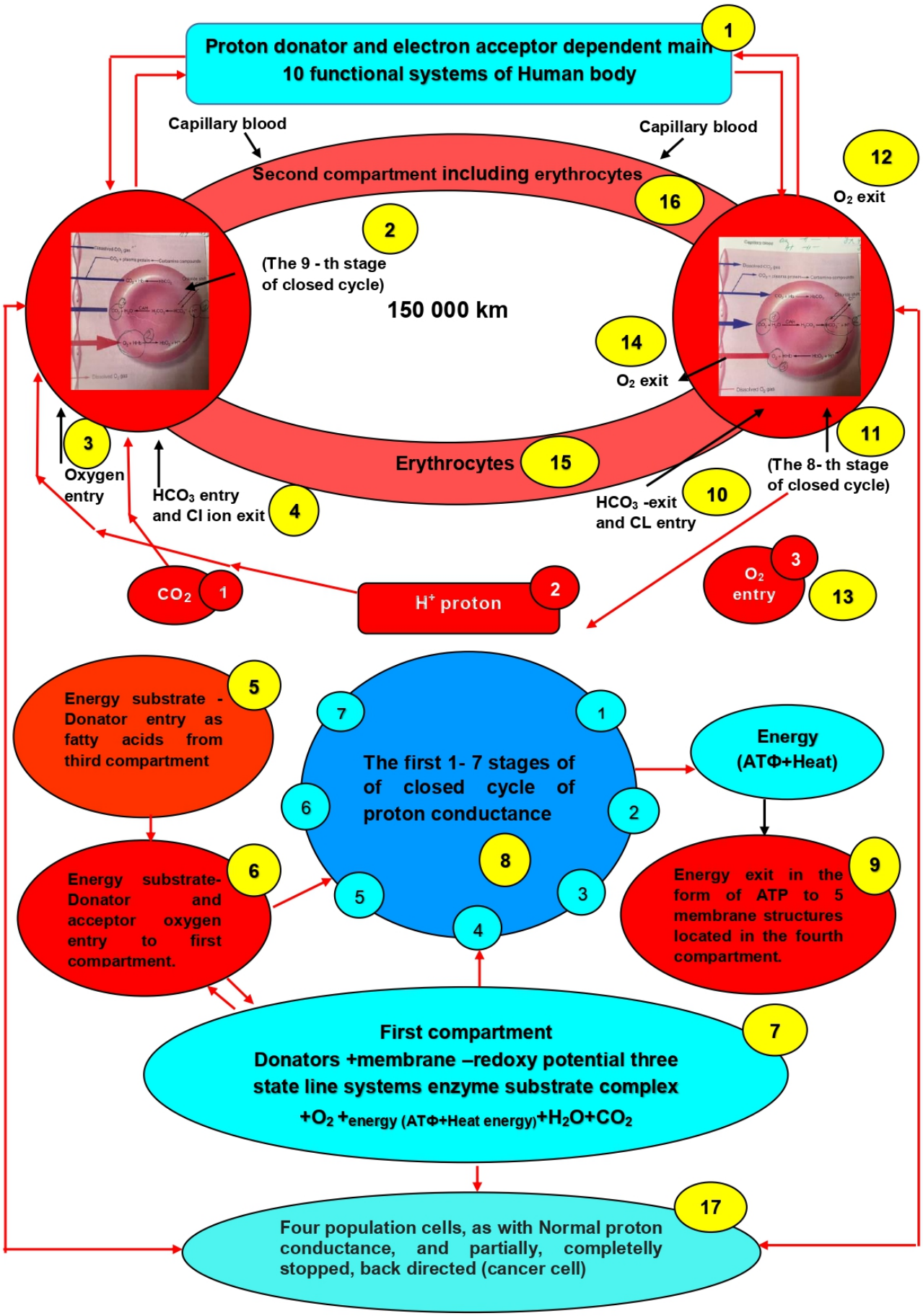


Figure 1. The system models, including the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance and the four compartments, the 10 functional systems

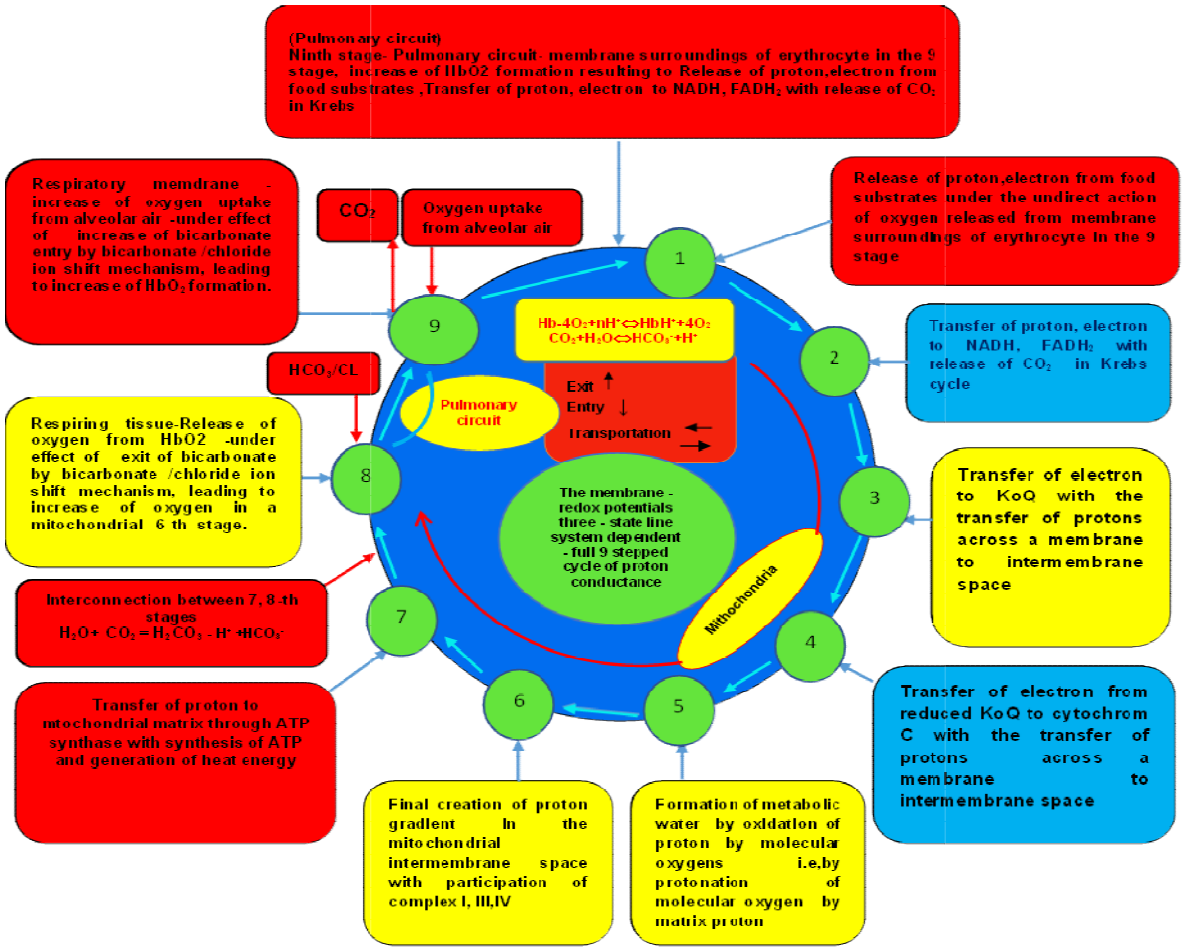


Figure 2. The membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance

formed free proton, metabolic water, carbon dioxide and ATP, at second: following to this have been created the possibility to start the 9-th stage of closed cycle, located in theRespiratory membrane - Pulmonary circuit-increase of oxygen uptake from alveolar air -under effect of increased bicarbonate entry by HCO_3 entry and CL ion exit-(bicarbonate / chloride ion shift mechanism), Oxygen entry leading to increase of HbO_2 formation and the 8-th stage of closed cycle, located in the Respiring tissues - Pulmonary circuit -oxygen uploading by HCO_3 -exit and CL entry-O_2 exit -Release of oxygen from HbO_2 under effect ofexit of bicarbonate by bicarbonate exit / chloride ion entry shift mechanism, leading to increase of oxygen in a mitochondrial - 6-thstage of proton conductance, which have been conditionedthe Energy substrate -Donator entry as fatty acids from third compartment to second compartment, which have been followed by Energy substrate-Donator and acceptor oxygen entry from second compartment to first compartment, where have been formed ATP, owing to formation of ATP in the first compartment have been created the condition to functioning of fourth compartment parameters, as 5 membrane structures-5 function systems, where conducted the normal genetic-cell division, information-response,biosynthetic, bioenergetic, biotransformation functions by using of high energy phosphate - ATP, high energy electrons NADPH,which have existed in the level of all cells of the 10 main systems of Human body as proton donator and electron acceptor delivering. In this connection that 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 betta subunits (Harpers Biochemistry) we are trying to describe the system models, including the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance including the four compartments, the 10 functional systems.

The 10 main systems of Human body as proton donator and electron acceptor delivering have been consisted of First functional system is the system of delivering electron-proton donators as foods to living cells to maintain the normal level of donators as carbohydrate, aminoacids, fatty acids within membrane redoxy potentials 3 state line system as very important place of conducting of protons,electrons, starting from cyanobacteria formed during last 4,4 billion years, identical to Gastroenterological system, Second functional system is the system of delivering electron-proton acceptors as oxygen to living cells to maintain the normal level of acceptors as oxygens within membrane redoxy potentials 3 state line system as very important place of conducting of protons, electrons, starting from cyanobacteria formed during last 4,4 billion years, identical to Respiratory system, Third functional system is the system delivering electron-proton acceptors as oxygens and electron-proton donators as foods together to 87 trillion living cells to maintain the normal level of acceptors as oxygens and and donators within membrane redoxy potentials 3 state line system as very important place of conducting of protons, electrons, starting from cyanobacteria formed during last 4,4 billion years, identical to Cardiovascular system, Fourth functional system is the system eliminating and neutralizing toxic metabolites and carbon dioxide, protonated carbondioxide, also free protons formed during the functioning of the energy making system as "Donators (glucose, aminoacids, fatty acids) + membrane redox potentials three - state line system + acceptor as O_2 + ADP + Pi + H^+ + $nH^+_{memb.space}$ = (ATP + heat energy) + H_2O + nH^+_{matrix} + CO_2"-reaction medium, identical to Renal - urinary and Acid-Base controlling system, Fifth functional system is the system of converting some toxic metabolic products to normal metabolic products and conducting the synthesis and resynthesis of saturated and unsaturated fatty acids as main components of all membrane structures belong to membrane - redoxy potential 3 state line systems included to "Donators (glucose, aminoacids, fatty acids) + membrane redox potentials three - state line

system + acceptor as O_2 + ADP + Pi + H^+ + $nH^+_{memb.space}$ = (ATP + heat energy) + H_2O + nH^+_{matrix} + CO_2 -reaction medium, identical to Hepato-billiary system, these all functional systems have functioned owing to 5 membrane structures-5 main functions as the normal genetic-cell division, information-response,biosynthetic, bioenergetic, biotransformation functions and four types of cells, distinguished by difference of proton conductance.

REFERENCES

Ambaga, M., Tumen-Ulzii, A. and Buyantushig, T, 2022,To question of elucidation of eigth and ninth stages of the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance in the Human body, International Journal of Current Research, vol 14,issue 11,pp.22764-22766,November

Ambaga, M., Tumen-Ulzii, A. and Buyantushig, T, 2022, The Humburger shift and the eigth and ninth stages of the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance in the Human body,Asian Journal of Science and technology,vol.13,issue,11,pp 12264-12266.

Ambaga, M., Tumen-Ulzii, A. and Buyantushig, T, 2022, The system modelsof the membrane redoxy potential three state dependent 9 stepped full cycle of proton conductance, including the four compartments and the 10 functional systems in teHuman body, International Journal of Current Research,vol 14,issue 12,pp.23123-23125,December

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

Taylor D.J , Green N.P.O, Stout G.W, Biological science , Third edition

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://www.biologydiscussion.com/biochemistry/lipids-biochemistry/oxidation-of-fatty-acids-biochemistry/72756

https://en.wikipedia.org/wiki/Adenosine_triphosphate

https://en.wikipedia.org/wiki/Bohr_effect

https://en.wikipedia.org/wiki/Haldane_effect

https://en.wikipedia.org/wiki/Pulmonary_circulation

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

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

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 suggestionabout existing of membrane - redoxy 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 Tibetian 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 directionduring pathological situations.,*International Journal of Current Research,* Vol, Issue, 11, pp 42456-42459, November.

Ambaga M, Tumen-Ulzii A. 2016. Integrated NCM medicine with s-NCM new knowledge, lambert Academic Publishing.

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 conductanceand 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.

AmbagaM,Tumen-Ulzii A,2017. The full 9 stepped cycle of proton conductanceand 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,

****