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RESEARCH ARTICLE

THE BUFFERING CAPACITY OF ERYTHROCYTE MEMBRANE SURROUNDINGS IN RELATION TO FREE PROTONS INSIGHTOF NEW 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

Ambaga M., Tumen-Ulzii A. and Buyantushig T.
New Medicine Medical University, Ulanbator, Mongolia.

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Abstract

It was became clear that the flow-fate of all many many protons,generated in mitochondria of 50-80 trillion cells (now by us mitochondria flow of protons named as 1-7 stages of proton conductance) have been needed another special structures - another system needs to soak up the extra H^+ activity generated as a result of process conducted in the 1-7 stages of proton conductance in order for true buffering to occur, that system consists of intracellular proteins, of which haemoglobin is the key player, concretely speaking,one of these are the erythrocyte membrane surroundings for packaging of protons and alsoHydrochloric acid formationby Gastric parietal cells,also H+/Na antiport in the membrane transports H+ out of cell and Na ion in the level of "Peritubular capillary-Interstitial fluid-Tubule epithelial cells-Tubular fluid" with accompanying maintaining of serum and cell pH-7,4.By our suggestion, the buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the proton conductance have implemented within Ninth stage -located in the Respiratory membrane, Pulmonary circuit, where occurred oxygen uptake from alveolar air under effect of increased bicarbonate entry by bicarbonate/chloride ion shift mechanism, leading to increase of HbO_2 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 of proton conductance.

Introduction:-

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 8-9-th stages 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 and the entry of oxygen from lung, formation of HbO_2, proton combine with hemaglobin (generation of HbH) which promotes the release of oxygen from hemaglobin, oxygen diffusion to all cells conditioning the release of proton, electron from food substrates in the 1-stage also proton released from hemaglobin promotes uptake of oxygen by hemaglobin.

Corresponding Author:- Ambaga M., Tumen-Ulzii A.
Address:- New Medicine Medical University, Ulanbator, Mongolia.

Quantity of hydrogen atom (proton, electron together) that existed in the donator (food substrates) in the first stage of this cycle would make the remarkable influence to the buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the full cycle of proton and electron conductance and to reaction intensity, because more hydrogen atoms, more proton gradients, ATP in the sixth stage of the cycle and more free proton inside the erythrocyte membrane surroundings.

Quantity of free protons inside of erythrocyte membrane surroundings at 9 stage of cycle would make the remarkable influence to the buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the full cycle of proton and electron conductance and to diffusion speed of oxygen to 14 trillion cells that is, more free protons inside of erythrocyte membrane surroundings more oxygen delivery to body cells.

Results And Conclusion:-

It was became clear that the flow-fate of all many many protons, generated in mitochondria of 50-80 trillion cells (now by us mitochondria flow of protons named as 1-7 stages of proton conductance) have been needed another special structures - another system needs to soak up the extra H^+ activity generated as a result of process conducted in the 1-7 stages of proton conductance in order for true buffering to occur, that system consists of intracellular proteins, of which haemoglobin is the key player, concretely speaking,one of these are the erythrocyte membrane surroundings for packaging of protons and also Hydrochloric acid formation by Gastric parietal cells,also H+/Na antiport in the membrane transports H+ out of cell and Na ion in the level of "Peritubular capillary-Interstitial fluid-Tubule epithelial cells-Tubular fluid" with accompanying maintaining of serum and cell pH-7,4.

By our suggestion, the buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the proton conductance have implemented within Ninth stage -located in the Respiratory membrane, Pulmonary circuit, where occurred oxygen uptake from alveolar air under effect of increased bicarbonate entry by bicarbonate / chloride ion shift mechanism, leading to increase of HbO_2 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 of proton conductance.

The Buffering capacity of erythrocyte membrane surroundings in relation to free protons, formed in the proton and electron conductance is the process implemented within 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 HbO2 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, $FADH_2$ with release of CO_2 in Krebs cycle. These process have been appeared as the reutilization of diffused protons from mitochondrial matrix of all cells to plasma membrane of red blood cells with generation of HbH which promotes the release of oxygen from hemaglobin, oxygen diffusion to all cells conditioning the release of proton, but participation of erythrocyte membrane surroundings in the regulation of free protons and oxygen, carbon dioxide, water molecules formed during functioning of the full 9 stepped cycle of electron and proton conductance.

The prevalence of fluid alpha state with high oxidation potentials in the membrane - redox potentials three - state line system leads to change of the buffering capacity of erythrocyte membrane surroundings in relation to free protons and in such way to the intensification of diffusion of oxygen to 14 trillion cells and to rise of intensity of release of proton and electron from donators at first 1 step of this cycle and more conversion of proton gradients to heat energy at 6 stage of this cycle and more the free protons in the erythrocyte membrane surroundings

The prevalence of solid betta state with high reductive potentials in the membrane - redox potentials three - state line system leadsto change of the buffering capacity of erythrocyte membrane surroundings in relation to free protons and in such way to the lowering of the diffusion of oxygen to 50trillion cells and to lowering of the intensity of release of proton and electron from donators at first 1 step of this cycle and more conversion of proton gradients to ATP at the 6th stage of this cycle and the change of the free protons in the erythrocyte membrane surroundings

The prevalence of gamma state with low redox potentials in the membrane-redox potentials three-state line system leads to change of the buffering capacity of erythrocyte membrane surroundings in relation to free protons and in such way to the less high protonized donators at the first stage of this cycle and to lowering of the diffusion of oxygen to 14 trillion cells and intensity of the release of proton and electron from donators at first 1 step of this

cycle and less conversion of proton gradients to ATP and heat energy at the 6th stage of this cycle and lessthe free protonsintheerythrocyte membrane surroundings.

After making the elucidationrelating to interconnection between a first 1-7 stages of proton conductance of mitochondrial location and 8-the stage of proton conductanceofPulmonary circuit location and also, the interconnection between 8-the stage of proton conductance of Pulmonary circuit location with 9-thstage 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 ofPulmonary circuit location during evolution development of living organisms gives

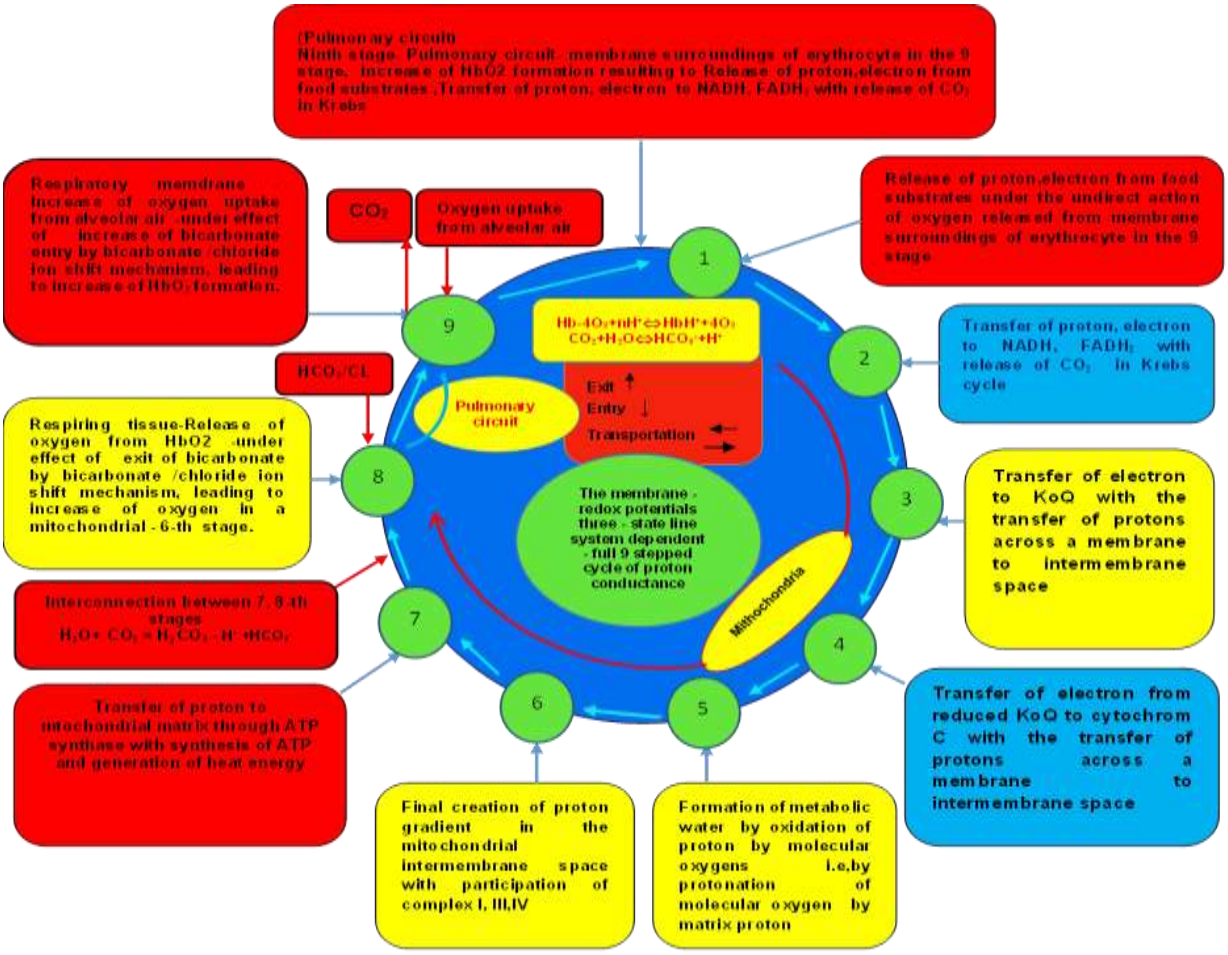

Figure 1:- The final variant of closed cycle of proton conductance inside human body after making elucidation in the level of 8-the and 9-the stages of proton conductanceofPulmonary circuit location.

The scientific basis that erythrocyte membrane surroundings is more appropriate place to packaging of protons in the Ninth stageof proton conductance locatedRespiratory membrane Pulmonary circuit appeared as increase of oxygen uptake from alveolar air -under effect of increase of bicarbonate entry by bicarbonate/ chloride ion shift mechanism, leading to increase of HbO2 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, $FADH_2$ with release of CO_2 in Krebs cycle.

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