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RESEARCHARTICLE

THE HUMBURGER SHIFT AND EIGTH, 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 protons, generated in mitochondria of 50-80 trillion cells (By us mitochondria flow of protons named as 1-7 stages of proton conductance) have been needed another special structures - another system 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. This mechanism as the hydrogen ions are buffered by haemoglobin, meanwhile the bicarbonate ion is pumped out of the erythrocyte cells by active transport mechanisms by Chloride shift - the Hamburger phenomenon or lineas phenomenon have been occurred during Eighth stage, which have been functioned in the level of Pulmonary circuit, Respiring tissue characterized by oxygen uploading by bicarbonate / chloride ion shift mechanism, release of oxygen from HbO_2 - under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-thstage.

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INTRODUCTION

It is existed the ways in which a changing CO_2 concentration might alter the pH of a solution, particularly that of Human body precious bodily fluids. CO_2 in the bloodstream is transported in three major forms: as dissolved gas, as carbamate (bound to haemoglobin and other proteins) and as bicarbonate. Bicarbonate is by far the most important form in terms of volume, and one gets their bicarbonate by either spontaneous or catalysed hydration of CO_2, which becomes carbonic acid, and degenerates rapidly into HCO_3^- and H^+. Inside the red cells, intracellular carbonic anhydrase catalyses the conversion of CO_2 and H_2O into H_2CO_3, which exists for mere moments before decomposing spontaneously into HCO_3^- and H^+. Inside the red cells, intracellular carbonic anhydrase catalyses the conversion of CO_2 and H_2O into H_2CO_3, which exists for mere moments before decomposing spontaneously into HCO_3^- and H^+.

Corresponding author:** ***Ambaga, M.,
New Medicine Medical University, Ulanbator, Mongolia.

Chloride shift (also known as the Hamburger phenomenon or lineas phenomenon, named after Hartog Jakob Hamburger) is a process which occurs in a cardiovascular system and refers to the exchange of bicarbonate (HCO_3^-) and chloride (Cl^-) across the membrane of red blood cells (RBCs). Carbon dioxide (CO_2) is produced in tissues as a byproduct of normal metabolism. It dissolves in the solution of blood plasma and into red blood cells (RBC), where carbonic anhydrase catalyzes its hydration to carbonic acid (H_2CO_3). Carbonic acid then spontaneously dissociates to form bicarbonate Ions (HCO_3^-) and a hydrogen ion (H^+). In response to the decrease in intracellular p CO_2, more CO_2 passively diffuses into the cell. Cell membranes are generally impermeable to charged ions (i.e. H^+, HCO_3^-) but RBCs are able to exchange bicarbonate for chloride using the anion exchanger protein Band 3. Thus, the rise in intracellular bicarbonate leads to bicarbonate export and chloride intake. The term "chloride shift" refers to this exchange. Consequently, chloride concentration is lower in systemic venous blood than in systemic arterial blood: high venous pCO_2 leads to bicarbonate production in RBCs, which then leaves the RBC in exchange for chloride coming in.

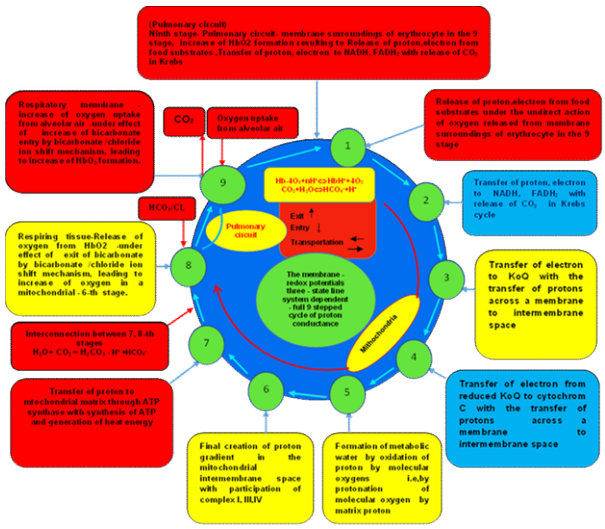

Figure 1. The final variant of closed cycle of proton conductance inside human body after making elucidation in the level of 8-the and 9-the stages of proton conductanceof Pulmonary circuit location

RESULTS AND CONCLUSION

It was became clear that the flow - fate of all many protons, generated in mitochondria of 50-80 trillion cells (By us mitochondria flow of protons named as 1-7 stages of proton conductance) have been needed another special structures - another system 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.

This mechanism as the hydrogen ions are buffered by haemoglobin, meanwhile the bicarbonate ion is pumped out of the erythrocyte cells by active transport mechanisms by Chloride shift -the Hamburger phenomenon or lineas phenomenon have been occurred during Eighth stage, which have been functioned in the level of Pulmonary circuit, Respiring tissue characterized by oxygen uploading by bicarbonate / chloride ion shift mechanism, release of oxygen from HbO_2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-thstage. After makingsuch new interpretation as Ninth stage - of 9 staged close cycle of proton conductance in the location of Respiratory membrane, Pulmonary circuit have been distinguished by oxygen uptake from alveolar air - under effect of increase of bicarbonate entry by bicarbonate / chloride ion shift mechanism and Eighth stage have been functioned in the level of Pulmonary circuit, Respiring tissue characterized by oxygen uploading by bicarbonate / chloride ion shift mechanism, release of oxygen from HbO_2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-thstage was became easy to understand the scientific basis of the relationship between Halden, Bohr eighth and ninth stages of closed 9 staged cycle of proton, electron conductance it was easy to understand this mechainism as the hydrogen ions are buffered by haemoglobin, meanwhile the bicarbonate ion is pumped out of the cells by active transport mechanisms as Chloride shift - the Hamburger phenomenon or lineas phenomenon.

- The Humburger shift - entry of Bicarbonate in the red blood cell (RBC) exchanging with chloride from plasma in the lungs have been showed the process occurred in the Ninth stage located in the Respiratory membrane, Pulmonary circuit resulting to increase of oxygen uptake from alveolar airunder 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, Transfer of proton, electron to NADH, $FADH_2$ with release of CO_2 in Krebs cycle.
- This mechanism as the hydrogen ions are buffered by haemoglobin, meanwhile the bicarbonate ion is pumped out of the erythrocyte cells by active transport mechanisms by Chloride shift - the Hamburger phenomenon or lineas phenomenon have been occurred during Eighth stage, which have been functioned in the level of Pulmonary circuit, Respiring tissue characterized by oxygen uploading by bicarbonate / chloride ion shift mechanism, release of oxygen from HbO_2 - under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6 - thstage.
- The integrated relationship between all following functions as 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 as the erythrocyte membrane surroundings for packaging of protons - 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, also the enhanced affinity of deoxyhemoglobin for protons enhances synthesis of bicarbonate and accordingly increases capacity of deoxygenated blood for carbon dioxide have occurred during Eighth stage, which have been functioned in the level of Pulmonary circuit, Respiring tissue characterized by oxygen uploading by bicarbonate / chloride ion shift mechanism, release of oxygen from HbO_2 - under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-thstage.
- The integrated relationship between all following functions as Bicarbonate in the red blood cell (RBC) exchanging with chloride from plasma in the lungs, as 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 as the erythrocyte membrane surroundings for packaging of protons - another system 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 have been occurred during Eighth stage, which have been functioned in the level of Pulmonary circuit, Respiring tissue characterized by oxygen uploading by bicarbonate / chloride ion shift mechanism, release of oxygen from HbO_2 - under effect of

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