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RESEARCH ARTICLE

HALDEN, BOHR EFFECTS AND EIGTH, NINTH STAGES OF THE MEMBRANE REDOXY POTENTIAL THREE STATE DEPENDENT 9 STEPPED FULL CYCLE OF PROTON CONDUCTANCE IN THE HUMAN BODY

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ABSTRACT

After making such 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-th stage was became easy to understand the scientific basis of relation ship between Halden, Bohr eighth and ningh stages of closed 9 staged cycle of proton, electron conductance.

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INTRODUCTION

According to the Bohr effect, hemoglobin's oxygen binding affinity is inversely related both to acidity and to the concentration of carbon dioxide, carbon dioxide reacts with water to form carbonic acid, an increase in CO_2 results in a decrease in blood pH, resulting to hemoglobin proteins releasing their load of oxygen. The Bohr effect showed that conversely, a decrease in carbon dioxide provokes an increase in pH, which results in hemoglobin picking up more oxygen. Deoxygenated hemoglobin is a better proton acceptor than the oxygenated form, in red blood cells, the enzyme carbonic anhydrase catalyzes the conversion of dissolved carbon dioxide to carbonic acid, which rapidly dissociates to bicarbonate and a free proton. The enzyme carbonic anhydrase, which is present in red blood cells drastically speeds up the conversion to bicarbonate and protons, this causes the pH of the blood to decrease, which promotes the dissociation of oxygen from haemoglobin, and allows the surrounding tissues to obtain enough oxygen to meet their demands.

RESULTS AND CONCLUSION

After making such 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 meanwhile, 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 HbO2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-th stage was became easy to understand the scientific basis of relation ship between Halden, Bohr eighth and ningh stages of closed 9 staged cycle of proton, electron conductance.

- The Bohr effect have been described as hemoglobin's oxygen binding affinity is inversely related both to acidity and to the concentration of carbon dioxide, carbon dioxide reacts with water to form carbonic acid, an increase in CO_2 results in a decrease in blood pH, resulting in hemoglobin proteins releasing their load of oxygen, which should be explained by processes, conducted in the Eighth stage- Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-th stage.
- According to the Bohr effect, conversely, a decrease in carbon dioxide provokes an increase in pH, which results in hemoglobin picking up more oxygen, which could be explained by processes , which occurred during Ninth stage of proton conductance located in the Respiratory membrane, Pulmonary circuit-increase of oxygen uptake from alveolar air-under effect of

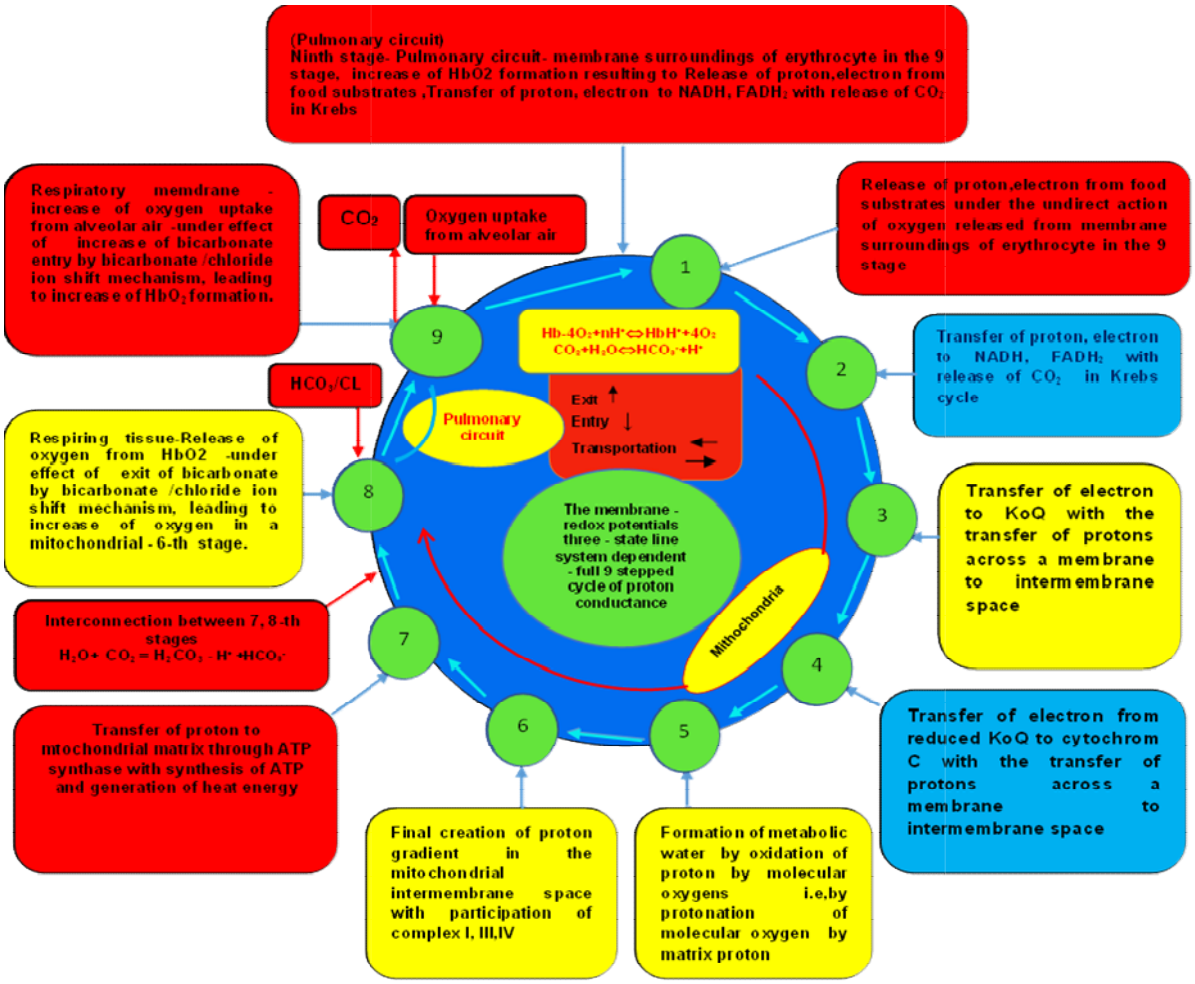

Figure 1. The final variant of closed cycle of proton conductance inside human body after making elucidation in the level of 8-the and 9-the stages of proton conductance of Pulmonary circuit location

increased bicarbonate entry by bicarbonate / chloride ion shift mechanism, leading to increase of HbO2 formation.

- Deoxygenated hemoglobin is a better proton acceptor than the oxygenated form, in red blood cells, the enzyme carbonic anhydrase catalyzes the conversion of dissolved carbon dioxide to carbonic acid, which been rapidly dissociates to bicarbonate and a free proton, which have occurred during the Eighth stage- Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-th stage.
- The enhanced affinity of deoxyhemoglobin for protons enhances synthesis of bicarbonate and accordingly increases capacity of deoxygenated blood for carbon dioxide, the majority of carbon dioxide in the blood is in the form of bicarbonate, which have occurred during the Eighth stage - Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism
- The Bohr effect facilitates oxygen release in the tissues, particularly those tissues in most need of oxygen, when a tissue's metabolic rate increases, so does its carbon dioxide waste production, when released into the bloodstream, carbon dioxide forms bicarbonate and protons , have occurred during Eighth stage- Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism, leading to increase of oxygen in a mitochondrial - 6-th stage .
- The enzyme carbonic anhydrase , which is present in red blood cells drastically speeds up the conversion to bicarbonate and protons, this causes the pH of the blood to decrease, which promotes the dissociation of oxygen from haemoglobin, and allows the surrounding tissues to obtain enough oxygen to meet their demands have occurred during Eighth stage of proton conductance located in the Respiring tissue - Pulmonary circuit -oxygen uploading by bicarbonate / chloride ion shift mechanism .
- The Bohr effect enables the body to adapt to changing conditions and makes it possible to supply extra oxygen to tissues that need it the most, such as when muscles are undergoing strenuous activity, they require large amounts of oxygen to conduct cellular respiration, which generates CO_2 (and therefore HCO_3^- and H^+) as byproducts, these waste products lower the pH of the blood, which increases oxygen delivery to the active muscles, if muscle cells aren't receiving enough oxygen for cellular respiration, they resort to lactic acid fermentation, which releases lactic acid as a byproduct, this increases the acidity of the blood far more than CO_2 alone, which reflects the cells' even greater need for oxygen,in fact, under anaerobic conditions, muscles generate lactic acid so quickly that pH of the blood passing through the muscles will drop to around 7.2, which causes haemoglobin to begin releasing roughly 10% more oxygen, which have been occurred in the Eighth stage- Respiring tissue - Pulmonary circuit - oxygen uploading by bicarbonate / chloride ion shift mechanism Release of oxygen from HbO2 -under effect of exit of bicarbonate by bicarbonate / chloride ion shift mechanism

- In addition to enhancing removal of carbon dioxide from oxygen-consuming tissues, the Haldane effect promotes dissociation of carbon dioxide from hemoglobin in the presence of oxygen, in the oxygen-rich capillaries of the lung, this property causes the displacement of carbon dioxide to plasma as low-oxygen blood enters the alveolus and is vital for alveolar gas exchange, oxygenation of Hb promotes dissociation of H^+ from Hb, which shifts the bicarbonate buffer equilibrium towards CO_2 formation, therefore, CO_2 is released from RBCs, which occurred during Ninth stage of proton conductance located in the 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 HbO2 formation.
- The oxygenation of Hb promotes dissociation of H^+ from Hb, which shifts the bicarbonate buffer equilibrium towards CO_2 formation, therefore, CO_2 is released from RBCs, which have occurred during 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.

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