



RESEARCH ARTICLE

THE METABOLIC FATES OF C, H, O ATOMS CONTAINED IN FOOD MOLECULES IN THE FULL 9 STEPPED CYCLE OF ELECTRON AND PROTON CONDUCTANCE INSIDE THE HUMAN BODY

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ABSTRACT

By us established that final conversion, metabolic fates of separate three atoms as C, H, O contained in any forms of foods - donators as carbohydrate, fatty acids, aminoacids occurred in the full 9 stepped cycle of electron and proton conductance inside the human body as follows:

**Metabolic fates of C, O atoms in the full 9 stepped cycle of electron and proton conductance inside the human body:** a. C, O atoms contained in food molecules through the 1-th stage and 2-th stage of the full 9 stepped cycle of electron and proton conductance inside the human body have been transferred and converted to CO<sub>2</sub> i.e. in these stages acetyl residues of acetyl - CoA and pyruvate, also succinyl - CoA, fumarate, pyruvate, acetyl - CoA, alpha - ketoacids as 7 intermediates of Krebs cycle after oxidative deamination of aminoacids converted to CO<sub>2</sub>.

**Metabolic fates of H atoms - first variant in case of free protons in the full 9 stepped cycle of electron and proton conductance inside the human body:**

- a. H atoms contained in food molecules through the 1-th stage as release of proton, electrons from food substrates under the indirect action of oxygen released from membrane surroundings of erythrocyte in the 9-th stage converted to NADH, FADH<sub>2</sub>.
- b. After these stages of conversion of H atoms contained in food molecules to NADH, FADH<sub>2</sub> have been started the next stages of conductance of free protons, including the 5-th stage- as translocation of proton to intermembrane space of mitochondria without accompanying electro, the 6-th stage as creation of proton gradient in the intermembrane space of mitochondria and following transfer of proton to matrix through ATP synthase, the 7-th stage as formation of metabolic water in the mitochondrial matrix by protonation of molecular oxygen by matrix proton, the 8-th stage as diffusion of proton from mitochondrial matrix of all cells and metabolic water formed during protonation of molecular oxygen by matrix proton entered through plasma membrane of red blood cells with participation of aquaporin protein channels, also the 9-th stage - metabolic water entered to red blood cells reacts with CO<sub>2</sub> formed in the 2-th stage by formation H<sub>2</sub>CO<sub>3</sub>, which is followed by reaction as H<sub>2</sub>CO<sub>3</sub>=H+HCO<sub>3</sub> and released during this stage free proton promotes the release of oxygen from hemoglobin, i.e. occurred the meeting of CO<sub>2</sub> formed in the 2-stage with metabolic water formed in the 7- th stage of the full 9 stepped cycle of electron and proton conductance inside red blood cells.

**Metabolic fates of H atoms - second variant in case of free electrons in the full 9 stepped cycle of electron and proton conductance inside the human body:** a. 4-th stage of the full 9 stepped cycle of electron and proton conductance inside the human body as transfer of electron to cytochrom C and to molecular oxygen without accompanying proton, formation of activated oxygen and 7-th stage as formation of metabolic water in the mitochondrial matrix in the form of oxidation of proton by activated oxygens after obtaining electrons from cytochrom C i.e. protonation of molecular oxygen by matrix proton.

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INTRODUCTION

Two ways that conserve energy in the form of ATP (Nick Lane, and William F. Martin, 2012) as chemiosmotic coupling via membrane - integral ATP synthases and substrate-level phosphorylations of all forms of living systems should be closely connected with the quantity of hydrogen, carbon, oxygen atoms in donator molecules and the membrane - redox potential, a three state line system dependent - full 9 stepped cycle of proton conductance inside human body (M.Ambaga, 2015).

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The quantity of the released CO<sub>2</sub> in the 2- th stage and also the quantity free protons and free electrons in in the 3,4 - th stages of the full 9 stepped cycle of proton conductance inside human body is existed in close correlation with C<sub>x</sub> (carbon atom), H<sub>y</sub> (hydrogen atom) contained in the donator molecules as C<sub>x</sub>H<sub>y</sub>O<sub>z</sub>. In world literature we can see more informations about oxidation of carbohydrates, fatty acids, aminoacids but what about the metabolic fates of C, H, O atoms contained in food molecules occurred in the full 9 stepped cycle of electron and proton conductance inside the human body so few literature materials.



## RESULTS AND CONCLUSION

By us established that final conversion, metabolic fates of separate three atoms as C, H, O contained in any forms of foods - donators as carbohydrate, fatty acids, aminoacids occurred in the full 9 stepped cycle of electron and proton conductance inside the human body as follows:

### Metabolic fates of H atoms - first variant in case of free protons in the full 9 stepped cycle of electron and proton conductance inside the human body

- H atoms contained in food molecules through the 1-th stage of the full 9 stepped cycle of electron and proton conductance as release of proton, electrons together from food substrates under the indirect action of oxygen released from membrane surroundings of erythrocytes converted to NADH, FADH<sub>2</sub>.
- After these stages as conversion of H atoms contained in food molecules to NADH, FADH<sub>2</sub> have been started the next stages of conductance of free protons, including the 5-th stage of the full 9 stepped cycle of electron and proton conductance as translocation of proton to intermembrane space of mitochondria without accompanying electron, the 6-th stage as creation of proton gradient in the intermembrane space of mitochondria and following transfer of proton to matrix

through ATP synthase, the 7-th stage as formation of metabolic water in the mitochondrial matrix by protonation of activated oxygen after obtaining electrons by matrix proton, the 8-th stage as diffusion of proton from mitochondrial matrix of all cells and metabolic water formed during protonation of molecular oxygen by matrix proton entered through plasma membrane of red blood cells with participation of aquaporin protein channels, also the 9-th stage as metabolic water entered to red blood cells reacts with CO<sub>2</sub> formed in the 2-stage by formation H<sub>2</sub>CO<sub>3</sub>, which is followed by reaction as H<sub>2</sub>CO<sub>3</sub> = H + HCO<sub>3</sub><sup>-</sup> and released during this stage free proton promotes the release of oxygen from hemoglobin, i.e. occurred the meeting of CO<sub>2</sub> formed in the 2-stage with metabolic water formed in the 7- th stage of the full 9 stepped cycle of electron and proton conductance inside red blood cells.

### Metabolic fates of H atoms-second variant in case of free electrons in the full 9 stepped cycle of electron and proton conductance inside the human body

Metabolic fates of H atoms-second variant in case of free electrons in the full 9 stepped cycle of electron and proton conductance inside the human body distinguished by this that the 4-th stage of the full 9 stepped cycle of electron and proton conductance inside the human body as transfer of electron to

cytochrom C and to molecular oxygen without accompanying proton, formation of activated oxygen and the 7-th stage as formation of metabolic water in the mitochondrian matrix in the form of oxidation of proton by activated oxygens after obtaining electrons from cytochrom C. i.e. protonation of activated oxygen by matrix proton.

In case of prevailing of fluid alpha state in the membrane three state dependent regulations and the full 9 stepped cycle of proton conductance occurred the following processes as:

- It is intensified the process of transferring and converting of C, O atoms contained in food molecules to CO<sub>2</sub>.
- It is decreased the ratio of NADH: NAD, FADH<sub>2</sub>: FAD during conversion of H atoms contained in food molecules to NADH, FADH<sub>2</sub>.
- It is increased the process of generation of heat energy in the 7-th stage of the full 9 stepped cycle of electron and proton conductance.
- It is increased the process of formation free proton by reaction as  $H_2CO_3=H+HCO_3$  inside of erythrocytes, which promotes release of oxygen from hemoglobin in the 8-th stage.

All these processes coded in Tibetan Traditional Medicine by hot, acute external patterns and fire element and Mkhris abstract notion.

In case of prevailing of betta state in the membrane three state dependent regulations and the full 9 stepped cycle of proton conductance have been observed the following processes as:

- It is decreased the intensity of the process of transferring and converting of C, O atoms contained in food molecules to CO<sub>2</sub>.
- It is increased the ratio of NADH: NAD, FADH<sub>2</sub>: FAD during conversion of H atoms contained in food molecules to NADH, FADH<sub>2</sub>.
- It is decreased the intensity of generation of heat energy in the 7-th stage of the full 9 stepped cycle of electron and proton conductance.
- It is increased the intensity of generation of ATP in the 7-th stage of the full 9 stepped cycle of electron and proton conductance.
- It is decreased the intensity of formation free proton by reaction as  $H_2CO_3=H+HCO_3$  inside of erythrocytes, which promotes release of oxygen from hemoglobin in the 9 - th stage of the full 9 stepped cycle of electron and proton conductance.

All these processes coded in Tibetan Traditional Medicine by heavy, cold acute external patterns and water, earth elements and Badgan abstract notion.

In case of prevailing of gamma state in the membrane three state dependent regulations and the full 9 stepped cycle of proton conductance have been observed the following processes as:

- The quantity of donator and acceptor molecules become low in this connection is decreased the intensity of the process of transferring and converting of C, O atoms contained in food molecules to CO<sub>2</sub>.

- The quantity of donator and acceptor molecules become low in this connection is decreased the quantity of NADH, NAD, FADH<sub>2</sub>, FAD during conversion of H atoms contained in food molecules to NADH, FADH<sub>2</sub>.
- The quantity of donator and acceptor molecules become low in this connection in this connection is decreased the intensity of generation of heat energy in the 7-th stage of the full 9 stepped cycle of electron and proton conductance.
- The quantity of donator and acceptor molecules become low in this connection is decreased the intensity of generation of ATP in the 7-th stage of the full 9 stepped cycle of electron and proton conductance.
- The quantity of donator and acceptor molecules become low in this connection is decreased the intensity of formation free proton by reaction as  $H_2CO_3=H+HCO_3$  inside of erythrocytes, which promotes release of oxygen from hemoglobin in the 8-th stage of the full 9 stepped cycle of electron and proton conductance.

All these processes coded in Tibetan Traditional Medicine by light, unoil acute external patterns and rLung elements and rLung abstract notion.

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