

Electrically Induced Nuclear Fusion

PART I

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Summary:

Biology in order to explain the trans-membrane potential of the cell -(TMP) adopts an unproven hypothesis of a procedure in which sodium Na is exchanged with potassium K inside and out of the cell. This assumed exchange in Biology is called the sodium-potassium pump¹-(SPP). The SPP leads to elementary contradictions, known in the literature. However, the SPP is the best choice hypothesis based on *the exclusion, assumed impossible, of cold nuclear fusion of sodium to potassium in the biological cell level.*

In this paper, we prove that the SPP process in Biology is actually a cold nuclear fusion and transmutation of sodium to potassium in the presence of oxygen-(SPT). In the paper, we also present, for the first time, the relevant nuclear endothermic equation and its important relationship to the cell parameters, the needed energy resources and most important to the cells' energy.

The SPT is the most important process to sustain the living cell and its physiology. The complete physiology of the sodium and potassium of the cell and in extension of the sodium-potassium physiology of the human body is understood and explained without the "not understood artifact" mechanisms and contradictions. The SPT and fusion is the basis of understanding several other mechanisms and similar cold nuclear fusions and transmutations in Biology and Medicine. The SPT nuclear process takes place continuously in the human body. It is the basis for the continuous function of the heart, and the key for the metabolism of all cells. It is clearly understood why the excess of Potassium in the blood stream prohibits the SPT nuclear reaction, leading to lack of energy, heart arrest and death.

The basic cell physiology is presented in terms of standard osmosis, nuclear transmutation of Na to K, and the physicochemical properties of these elements, only.

Introduction:

1. In 1964, G. Oshava and M. Torii¹ (OT) proved in an experiment that cold fusion of Na to K is possible. OT took 2.3 mg of Na, put it in a vacuum tube, 20 of cm long and 2 cm in diameter, and sealed it. They ran electrical discharges of 60 watts through it for 30 minutes. After stopping the discharges, they inserted Oxygen in the sealed tube with the electrically treated Na. A second later Na transmuted to K, according to the exothermal^{*} equation:



This experiment proves that if Na is first treated electrically, apparently its nucleus gets into an excited state, and secondly, when exposed to Oxygen, fuses with it to Potassium.

2. In 1955, an assumed process related to the same elements of Na and K for the cell, was suggested by Hodgkin and Keynes² under the name of Sodium-Potassium Pump¹-SPP, in order to explain the trans-membrane potential of 0.07 volts that exists

between the interior of the cell and its environment. This potential is also related to the cell content of K. According to this hypothetical process, Na is assumed to be continuously exerted out of the cell without eventual depletion and simultaneously K to be continuously inserted into the cell without eventual saturation. The obvious eventual depletion of Na from inside the cell, as well as the obvious saturation of K inside the cell is not addressed and remains as a paradox or contradiction of the said hypothesis.

However, this "hypothetical" process of exchange is regarded in Biology as an unquestionable "truth" and its results elevated to "findings".

According to Harold Hillman³, Biology in this case, does not distinguish between hypothesis, truth and findings.

For SPP, a mechanical action of the cell membrane, is assumed synchronously and selectively to pick up precisely 3 atoms of Na from inside the cell and eject them out of the cell. In the same period of time, it is assumed synchronously with the previous transportation, selectively to pick up 2 atoms of K from outside and eject them inside the cell.

This assumed artifact process is also called the active transportation of the cell membrane. It is also assumed that the specific rates of the "in" and "out" exchange of Na and K are different for the two atoms. Specifically for 3 atoms of Na out, 2 atoms of K come in, by an artificially assumed specific "picking up" structure of the cell membrane in the ratio 3/2. Therefore, it is believed that more positive Na⁺ ions come out than positive ions K⁺ go in. Thus, it is assumed that a net of positive charge is coming out at a rate of 3/2 for every K⁺ going in.

This way, standard Biology attempts to explain the cell's trans-membrane potential and its relation to the content of K⁺ inside the cell as a difference in the "in and out" rates for Na⁺ and K⁺, and by an artifact "picking up" mechanism of the cell membrane. It is doing so, without considering the possibility of the direct nuclear transmutation of Na to K inside the cell, which gives the same results, without the obvious contradictions of expected depletion and saturation respectively, as well as, without the need of the unlike mechanical action of the membrane, requiring precise synchronicity and selectivity of cog wheels.

It is also experimentally found (and this may be thus considered a fact) that for the charge of the trans-membrane potential, energy is required, as it should be expected. This energy was found (Skou² 1957) to be supplied by an exothermic consumption of a substance inside the cell called ATP. ATP is produced or actually reformed by a reverse process of energy which is supplied by the so-called Krebs' circle. Krebs' circle is powered by the burning of glucose inserted to the cell by insulin.

However, the actual active transportation of Na-K has never been proved, but, remains as an unjustified hypothesis in Biology, as it is also emphasized by H. Hillman³, and H. Hillman and P. Sartory⁴ in a relevant analysis. Besides, contemporary University textbooks in Biology admit that the assumed process is not understood, for example, *ibid.* page 541, "Molecular Cell Biology" by James Darnell, et al⁵, "*The activity of this (sodium-potassium pump¹) and other cellular ion pumps¹ is closely regulated by mechanisms presently unknown...*"

By the hypothesis of Sodium-Potassium pump¹ or exchange, saturation of K should eventually occur inside the cell, which has a finite volume. At the same time, Na

inside the cell should eventually be completely depleted. The sodium potassium exchange should be over and terminated after a finite time, depending on the initial concentration of Na inside the cell, and the available space inside the cell to be filled with K, a fact that is against observation and findings.

3. It is also known that the correct concentration of Na⁺ and K⁺ inside and outside the cell is responsible for the normal trans-membrane potential 60 to 70 mvolts and the normal vitality of a cell. A dead cell equalizes by osmosis alone the "intra and extra" cellular Na⁺-K⁺ concentrations and drops its trans-membrane potential to zero. The normal "intra and extra" cellular concentrations are:

	Out (blood)	In (cell)	
Na ⁺	145	12	mM
K ⁺	4	139	mM

4. Lois C. Kervran^{6,10} and Komaki^{7,8,10} established after many years of observations and experimentation that there is a continuous intake of Na by humans and animals and a continuous discharge of K by urination, as published in the celebrated book "Biological Transmutations", Swan House Publishing Co. NY 11223, 1972.

Kervran also established that with the intake of Na, K also increases. The ratio Na/K remains constant with or without intake of K, which is a generally known fact in Medicine and Biology.

It is very well known that for people with kidney deficiency, potassium K increases continuously in their blood stream, practically regardless of the food intake of K. However, It is also strongly recommended for them to avoid taking NaCl as much they can resist, not though emphasized to avoid taking foods rich in K. These medical suggestions directly prove that the intake of Na directly increases K on a short or long and permanent basis which for people with deficiency to discharge K avoidance of Na is recommended on a permanent basis.

From time to time, serious kidney deficiency patients have to go through a process, called blood dialysis, to remove the excess K among other toxins from their blood stream, otherwise, they die. It is also known that excessive concentration of K (hyperkalemia) in the blood stream for any reason which may halt the equation suggested here, instantly causes heart's function arrest.

These facts make sense only, if Na nuclearly transmutes to K inside the human body on continuous daily basis which sustains life.

5. Pappas⁹, since 1989 and for 10 years of continuous observations and systematic research, established that the K concentration in the blood increases, when human or animal cell's are exposed to the PAP-IMI Device (PAP-Ion Magnetic Inductor) - a generator of pulsed magnetic induction field, causing to the exposed tissue, an instant electrical potential per meter (potential gradient or electrical field volts/meter) of a fraction of the normal trans-membrane potential gradient of the cell, which is of the order of 10 MVolts/meter⁵.

6. The phenomenon⁹ of K increase by PAP IMI exposures is found to be more enhanced, when cells are in a state of edema or inflammation which are known to contain higher concentration of Na inside the membrane of the cell. At the same time,

a drastic reduction of edema and inflammation is found to occur, which indicates a drastic reduction of sodium and a simultaneous increase of K inside the cell. These findings make the device characteristically known to be associated with one of the most, or in certain cases, the best anti-inflammatory and edema reduction method. In PAP IMI exposures to inflammatory or edema cases, excess K accumulates in the blood stream, which under normal kidney function is immediately discharged from the body by the kidney functions and urination.

This is a decisive phenomenon, for it clearly proves a significant increase of production of K, in case of an increased concentration of Na associated with an inflammation or edema which is exposed by appropriate (PAP IMI) electrical pulses to enable the transmutation of Na to K!

The Equation of life:

Under the observation and the circumstances of 1, 2, 3,4 and particularly under the findings of 5 and 6, see also Part II, we come to a unique conclusion that the unproved hypothesis of Biology^{2,5} for the so called sodium-potassium pump¹ is wrong, just because of

"having no means of explaining the phenomenon" excluding as unthinkable, the case of cold fusion inside the human and animal cell.

On the other hand, a continuous transmutation of Na to K inside the cell seems to explain all the Na-K physiology of the cell and the Pappa's related electrical findings for the cell. The exchange of Na to K which logically contradicts all findings⁶, and in particular the known physiology of Na and K is totally wrong and a forced assumption based on the ad hoc wrong assumption: *"no cold nuclear transmutations may occur in Biology"*.

We propose for the first time, the Pappas' equation of nuclear fusion on the level of the living cell, indicating its relation to the involved vital energies as an endothermic reaction:



which results in the energy own resource of the living cell.

The exact role of the membrane's electrical energy or the externally supplied electrical energy, the separate role of the ATP energy, as well as the role of K to the trans-membrane potential-TMP of the cell, the relation of TMP to the cell metabolism and proper function and cell energy, will become clear in the following.

It is well known that although K is a bigger atom than Na. Na's mobility should have been higher than K's. However, Na hydrates with 6 atoms of H₂O, K does not. Thus Na+6H₂O is becoming extra large and thus Na's mobility is finally much less than K's. Thus once Na is inserted by osmosis into the cell and transmutes into K; the naked K escapes by osmosis more rapidly through the cell membrane, due to its smaller size and thus higher mobility. This causes an imbalance to the electrical charge concentrations, for positive ions may escape faster out under the vehicle of K ion, than they are inserted as Na ions. This naturally explains, for as long as Na transmutes to K inside the cell, why the cell loses positive charge and becomes more negative with respect to its environment, until it reaches an equilibrium value of negative potential to retard the exit of K⁺ and to increase the input of Na⁺ and other positive ions from the extracellular space.

The trans-membrane potential difference, thus created, powers metabolism of the cell by electrostatically attracting other materials into the cell- a generally known phenomenon as electroinsertion. Further, the trans-membrane potential enables the nuclear transmutation of Na to K by preparing the Na nucleus during its crossing the field across the membrane, in case of a normal TMP present which is of the order of 10 MVolts/m.

SPT maintains TMP, and TMP maintains SPT in an auto-catalyze, maintain or enhance one another mode.

A cell in the state of death -known to have no trans-membrane potential, may not initiate Na to K fusion and may not acquire the lost potential. Thus, the state of death with no trans-membrane potential for the cell is an irreversible state of no metabolism.

The role of insulin enhanced by adrenaline, secreted from the adrenal gland (situated on the top of kidneys) is better understood, as a mechanism of controlling ATP, which complements the fusion of Na to K, thus controlling the rate of metabolism and the rate of vitality of the cells of the body, in respect to the adrenaline triggered by the state of the brain and eventually the state of mental perception and activity.

In case of an increased activity of SPT caused by the adrenal gland, the kidneys are also required to be alerted by the same mechanism that triggers adrenaline, to quickly discharge as nuclear ash, the expected increase of K, thus maintaining the balance of low K concentration in the outside the cells environment; and to prevent reinsertion of mobile K into the cells by osmosis and electroinsertion; and thus to prevent the annihilation of TMP; and thus to prevent the cell death by lack of its energy resource.

This makes understandable the wisdom of positioning the adrenal gland on the top of the kidneys.

This basic mechanism of cold nuclear fusion explains the simple wisdom and physiology of the cell and the miracle of life, without unknown, magical and mysterious mechanical functions for the cell membrane, contradicting the elementary logic of saturation and depletion for finite volume cells.

Conclusion:

It has been shown that the assumption of nuclear fusion in Biology is not contradictory, but leads to the understanding of biological procedures without contradictions. In particular, from over 10 years observations of the PAP IMI electric exposures on living cells, we are led to the correct assumption that the process known today in Biology as the Sodium-Potassium pump¹ is incorrectly assumed a molecular exchange, but actually it is a nuclear process of fusion under electrical excitation of Na nucleus, firstly by the charged cell membrane, and secondly via an endothermic catalytic action of ATP. The electrical excitation of the Na nucleus may be assisted externally by appropriate strong electrical pulses. ATP seems to control this fusion reaction which otherwise could exponentially increase under the self catalytic excitation of the trans-membrane potential-TMP which is related with a positive feedback reaction to the fusion of Na to K in the presence of O. The role of ATP, related mitochondria, Kreb's cycle, insulin, glucose, adrenaline, adrenal gland and kidneys is better understood as a co-mechanism to control this nuclear fusion which otherwise may increase exponentially or may die out.

The irreversibility from the "death" state to "life" state for the cell is clearly understood, as in the death state, the "first" electrical excitation by the cell membrane, i.e. TMP, is missing to catalyze or prepare the nucleus of Na to transmute to K and maintain farther the TMP and enable subsequently metabolism.

The nuclear fusion of Na to K by Oxygen seems to be the most important function of the cell and the key to its life and metabolism. A great number of other biological and medical functions and malfunctions are better understood by standard osmosis related mechanisms alone, and via the above nuclear fusion as well the equivalent to its reverse for example:



and will be presented shortly.

pump¹ = nuclear transmutation.

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