Positive Nuclear Magnetic Moments Driving Ferrochemical Cycles of Life: Negative Nuclear Magnetic Moments for Neutrons Altering Biochemistry for Disease

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Abstract

A new detailed theory is developed for how isotopes of nonzero nuclear magnetic moments (NMMs) provide nuclear pressures for hidden stimulations for driving transportations locally for agitations; for transformations for chemical, catalytic and enzymatic activities; for thermodynamics for novel energetic, equilibrium and entropic redistributions; and for transmutations reversibly and fractionally. Such are basis for normal life activities by positive NMMs of ^{1}H, ^{14}N and ^{31}P and other less abundant NMMs from stable isotopes of other elements as in vital minerals: **^{25}Mg**, ^{63}Cu, ^{65}Cu, ^{64}Zn, ^{66}Zn, ^{67}Zn, ^{68}Zn, ^{57}Fe, **^{43}Ca**, ^{23}Na, ^{55}Mn, **^{95}Mo**, **^{97}Mo**, **^{53}Cr**, ^{77}Se, ^{19}F, ^{39}K, ***^{40}K*** *and* ^{41}K and others. Where bolds have negative NMMs, boldless have positive NMMs, and italics have 100% or nearly compositional 100% relative abundances. On the basis of such more details are added for aging of living organisms as stable isotopes redistribute in biomolecules for clumping into specific chemical bonds on nanoscales and possibly gradual to cataclysmic enrichments in nano-domains of uncommon stable isotopes of ^{13}C, ^{15}N, ^{17}O, ^{25}Mg, and ^{33}S for altering the nuclear pressures for dissipative cycles of ^{1}H, ^{14}N, *and* ^{31}P for causing aging and disease. The passage of these stable isotopes are considered during cellular replications. The catalytic prominent role of **^{17}O** for aging and cancer is demonstrated. The basis for accelerated enrichment by external electromagnetic waves and static magnetic fields and electric fields is developed. The stronger property shift by greater altering electrons is reasoned by multiple cataclysmic fractional, reversible fissing and fusing. Distinct effects of nanodomains of all positive NMMs, all negative NMMs, homogeneous mix of positive and negative NMMs, and heterogeneous mix of positive and negative NMMs are developed. The contributions of these different stable isotopes by their NMMs to normal logistics and cancer logistics are developed. The differing impacts of these stable isotopes are reasoned based on their electronic states and the change in NMMs by replacing common primordial isotopes by uncommon nonprimordial isotopes.

RB Little's Prior Theory

New theory (1,2) of stable isotopes proposes and allows accumulated isotopic clumping with tiny changes in properties with each stable isotopic replacements for normal aging, but then at some threshold of replacement one new added stable isotope causes quanta change in properties for diseases and cancer. The resulting up-regulations of oncogenes and down regulations of suppressors by stable isotopes results from changes in molecular logic. A prior theory [1,2] proposed that stable nonprimordial isotopes disrupt normal mutational detections and replacements, repair mechanisms, and protections to induce nonrandom mutations, and produce driver genes to cause normal polymerase to become telomerase.

Isotopes Induce Global Down-Regulations and Up-Regulations for Cancer

Down regulations of protectors by isotopic replacements as nonprimordial stable isotopes appear in DNA, RNA and proteins so proteins cannot protect. Protectors may have nonprimordial stable isotopes and attack cancer by their nonprimordial stable isotopes, but the isotopic alterations down-regulate protectors by changing stable isotopes. The up-regulations of genes for cancer may involve also stable isotopic changes as the stable isotopic changes in both DNA and proteins produce anomalous processes to sustain the cancer by replicating its vital bond specific stable isotopic clumpings. But during replications of cancer cells there must be sufficient nonprimordial isotopes to code the daughter cells. If there is not, then this can constitute remission of cancer or shrinkage of tumors.

Passage of NonPrimordial Isotopes from Mother to Off-Spring Cells

Cancer cells must be enriched in nonprimordials so they can divide and give daughter cells the nonprimordial isotopes. Daughter cancer cells eat dead cells (3); so they may get such stable isotopes from dead cells. Daughter cancer cells get some nonprimordial stable isotopes from mother cells but as the daughter cancer cells age they accumulate more and more of the nonprimordial stable isotopes and they may use seed clumped nonprimordial stable isotopes to catalyze stable isotopic shifts between bonds in daughter cells to find the stable isotopic patterns suitable for cancer. These clumps of nonprimordial stable isotopic centers in cancer cells can be driven by heat and electromagnetic fields to fractionally, reversibly fiss and fuse and they will affect surrounding polymers chains so they pull in monomers having nonprimordial stable isotopes due to more favorable attractive interactions and push out null NMM of stable isotopes. Ironically ^{14}N, ^{1}H, ^{31}P should pull in $^{\mathbf{17}}\mathbf{O}$ and $^{\mathbf{15}}\mathbf{N}$ should push out $^{\mathbf{17}}\mathbf{O}$ and $^{\mathbf{17}}\mathbf{O}$ pulls in ^{13}C and ^{14}N *and* ^{1}H *and* ^{31}P should push out ^{13}C and ^{15}N should pull in ^{13}C. The stable isotopes in bold have negative nuclear magnetic moments (NMMs), but boldless have positive NMMs. The stable isotopes in italic have 100% or in composite of all have approximately 100%.

Process of Isotopic Induced Birth, Maturity and Death of Cells on Nuclear Scales

So in the process cancer cells are born and mature and reproduce. This process involves ^{1}H, ^{14}N, ^{31}P pulling in $^{\mathbf{17}}\mathbf{O}$. The $^{\mathbf{17}}\mathbf{O}$ then pulls in ^{13}C. The ^{13}C then pulls in $^{\mathbf{15}}\mathbf{N}$ and the $^{\mathbf{15}}\mathbf{N}$ pushes out $^{\mathbf{17}}\mathbf{O}$. The $^{\mathbf{25}}\mathbf{Mg}$ modulates the pushing out of $^{\mathbf{17}}\mathbf{O}$ as it binds $^{\mathbf{17}}\mathbf{O}$ unfavorably as by ionic bond the negative NMMs on anion destabilize the interactions. ^{31}P pulls in $^{\mathbf{17}}\mathbf{O}$ but $^{\mathbf{25}}\mathbf{Mg}$ pushes out $^{\mathbf{17}}\mathbf{O}$. This can push $^{\mathbf{17}}\mathbf{O}$ between phosphates and nucleosides. This can manifest the reversible catalyzing effects for $^{\mathbf{17}}\mathbf{O}$ from phosphates to fix ^{13}C in nucleosides then go back to phosphates as modulated by surrounding water $^{1}H_2{}^{\mathbf{17}}\mathbf{O}$. Water shuttles $^{\mathbf{17}}\mathbf{O}$ between nucleosides and phosphates. ^{13}C pulls $^{\mathbf{17}}\mathbf{O}$ to nucleosides but $^{\mathbf{15}}\mathbf{N}$ pushes $^{\mathbf{17}}\mathbf{O}$ away from nucleosides. ^{31}P pulls $^{\mathbf{17}}\mathbf{O}$ to phosphates but $^{\mathbf{25}}\mathbf{Mg}$ pushes $^{\mathbf{17}}\mathbf{O}$ away. In the process, ^{13}C gets fixed in nucleosides and $^{\mathbf{15}}\mathbf{N}$ is trapped in nucleosides and $^{\mathbf{17}}\mathbf{O}$ shuttles and gets trapped by ^{13}C and ^{31}P. NH_3 may play role in shuttling $^{\mathbf{15}}\mathbf{N}H_3$ in cancer as higher concentrations of NH_3 exist in cancer (4). So the cancer accumulates ^{13}C and $^{\mathbf{15}}\mathbf{N}$ and $^{\mathbf{17}}\mathbf{O}$ by this shuttling of $^{\mathbf{15}}\mathbf{N}$ and $^{\mathbf{17}}\mathbf{O}$.

DNA Is Composite of Ring of Electrons, Sugar and Phosphate Groups

The sugar unit in DNA may be reversibly hydroxylated to fuel the process reversibly. ^{16}O attacks the sugar reversibly as catalyzed by enzymes, but the $^{\mathbf{17}}\mathbf{O}$ can alter such. Energy from reversible attacks of sugar give energy for phosphylations and dephosphorylations. Sugar

may be reversibly hydroxylated and dehydroylated (relative to the nucleosides) and the energy excess or deficiency are taken up by phosphates for phosphorylating or dephosphorylating. The changing double bonds to single bonds in nucleosides gives momenta for rehybridizing dynamics in phosphates and sugar units. Protons in water also are spin momenta media for exchanging angular momenta to modulate these ferrochemistries.

Nuclear Pressures for Clumping Isotopes Within Molecules and NanoDomains

^{17}O pulled in by ^{1}H, ^{14}N, ^{31}P and also ^{33}S. ^{33}S along with ^{31}P modulates pulling in **^{17}O**. ^{33}S is more reactive than ^{14}N due to S on 3rd row and N on second row. ^{63}Cu, ^{65}Cu and ^{64}Zn, ^{66}Zn, ^{67}Zn, ^{68}Zn and **^{43}Ca** stable isotopes may affect ^{33}S and **^{15}N** and **^{17}O** by compatible NMMs (5,6). ^{13}C pulls in **^{15}N** and **^{15}N** may push out **^{17}O** to spread the chemical defect to other biomolecules. And the cycle repeats to mutate regions of biomolecules. These are active internal nonprimordial stable isotopic nuclear pressures that drive biomolecular alterations of normal nuclear pressures of ^{1}H, ^{14}N *and* ^{31}P dissipative structures in living organisms (1,8). Down hill catabolic are not as subject to ^{13}C, **^{15}N** and **^{17}O** nuclear pressures; as released energies stimulate the NMMs to prevent their clumpings. But uphill anabolic processes are more subject with trapping ^{13}C, **^{15}N** and **^{17}O** in endothermic produced products as there is not enough released thermal energy to alter the trapped ^{13}C, **^{15}N** and **^{17}O** of strong bonds of 2nd row and the double bonds are more difficult to break but allow reactions centers to accumulate these nonprimordial stable isotopes: ^{13}C, **^{15}N** and **^{17}O**. But surrounding radiofrequency and static magnetic fields can drive the accumulated nonprimordial stable isotopes in cancer to affect the cancer or even cause the cancer (1,2,7). So the radio waves alter DNA and RNA due to double bonds of rings. The changing double bond to single bond of the ring and the exchange among many gives electronic accelerated momenta for coupling to NMMs for focusing momenta into ring constituent to help NMMs drive bond dynamics.

Life Processes by Clumps of + NMMs for Novel Nanodomains of NMMs

Somehow life intrinsically assembled nanodomain of NMMs as by ^{1}H, ^{14}N *and* ^{31}P as these have almost 100% or nearly 100% positive NMMs. Prior to this work, scientists have missed this role of clumped nanoregions of NMMs altering chemical dynamics. But how does this occur? With increased clumping of nonzero NMMs, the fractional, reversible fissings and fusings of many nuclei are summed. But furthermore beyond some critical number (threshold) the dynamics suddenly cataclysmically change. The NMMs stimulate each other for even larger fractional, reversible fissing and fusing in macromolecules and nanoparticles. The thermal space and electric fields, magnetic fields, electromagnetic fields ($h\nu$) agitate isolated individual NMMs. And the individual NMMs fractionally, reversibly fiss and fuse for less effects on surrounding electronic lattices. But as more and more NMMs gather on macromolecular to nanoscales, then the many fractional, reversible fissing and fussing NMMs develop new phases of matter. In the new phase as further described here, the NMMs agitate each other more strenuously for heightened effects. The NMMs more intensely agitate each other so nuclei fractional, reversible fiss and fuse more to more alter electronic lattice. This is totally new nanoscale phenomena discovered by the author (1,2).

Effect of Collective Threshold NMMs on Electrons

Such greater fractional, reversible fissing and fusing of nanodomains of NMMs increase QF intensities for more dissipative orders in all + NMMs systems or all – NMMs systems. In

such systems huge nuclear fields, strong fields, weak fields are released and these fields order the surrounding electrons of the L Frames in novel ways to exhibit novel processes of life as dissipative structures by all positive and all negative NMMs or modified positive and negative mix of NMMs as in diseased cells like cancer. Such can explain the odd chemical and physical behavior of silver nanoparticles of all negative NMMs relative to bulk silver where the interactions between domains counter the single domain anomalous chemistry (9). The extreme toxicity of beryllium to living organism (10) also manifest this aspect of the theory further developed here. Also such single domains of all positive NMMs manifest in normal cells of living organisms for exhibiting energetic and motional dissipative orders on nanoscales for normal operations of biochemical molecules for media for life (1,2). The functions of molecules like proteins, ATP and DNA and RNA can be reasoned by such dissipative phenomena of their all positive NMMs in ^{1}H, ^{14}N and ^{31}P. But single domains composed of mixed + NMMs and – NMMs have yet a different but distinct and novel properties of two general types. Unlike the dissipative properties of all + and/or all negative NMMs, the mix of + and – NMMS cause dissipative to → quantizating phenomena and transforming disorder to order for novel energy accumulation, transport, catalysis, enzymatics, optics, thermodynamics, magnetics, transmutations and biology (1,2). Type 1 mix of positive and negative NMMs are of homogeneous mix of the + and – NMMs more may locally accumulate the many fractional, reversible fissed and fused NMMs into chemical for altering chemical bonds and catalyzing chemical changes, even enzymatics of biomolecules. Such type I mix of positive and negative NMMs are proposed to manifest in some regions in cancer cells as by mix of ^{13}C, $^{15}\mathbf{N}$, $^{17}\mathbf{O}$, $^{25}\mathbf{Mg}$, ^{33}S with normal ^{1}H, ^{14}N, ^{31}P for mix of positive and negative NMMs to alter enzymatics and motions and chemical changes of proteins, nucleic acids, sugars, fats, and other biomolecules by altering the effects of all positive NMMs of $^{1}\mathbf{H}$, $^{14}\mathbf{N}$, and $^{31}\mathbf{P}$ in normal biomolecules (1,2). The type II mix of positive and negative NMMs are of heterogeneous mix as the positive NMMs are separated in subdomain from negative NMMs for positive NMMs and negative NMMs subdomains within the nano domain for heterogeneous mix of positive and negative NMMs. Such type II heterogeneous mixture in single nanodomain effects also explain the superconducting properties in nano-size silver particles within nano-size gold matrix (11) as the silver has all negative NMMs and the gold has all positive NMMs.

Effect of All Nanoscales of + NMMs, all – NMMs or Mix + and - NMMs

So all positive NMMs or all negative NMMs on nanoscales present regions that can momentarily pull in thermal space and order and then refuse the fields of all – or all positive fields to produce intervening void and irrational fields between the all positive NMMs or all negative NMMs. Such explains strange metals (12,13). Strange metals dissipate heat beyond the quantum limit due to such irrational void fields created by the counter opposing fields of fissed + interacting with fissed positive NMMs of neighbors or the counter interactions of fissed negative interacting with fissed negative NMMs for causing irrational void fields between the nuclei for dissipative motionals of thermal space and resistive phenomena like in conductivity. But by the theory of author (1,2, 12), a mix of positive and negative NMMs fractionally reversibly fiss and fuse to produce radio waves and other electromagnetic waves and even in more intense stimulations quantum fields between the positive and negative NMMs so to cause thermal space to ordered fields of mechanical push and pull, or electrical fields or magnetic fields or quanta fields even nuclear fields of tiny weak forces/interactions and strong forces/interactions. Such mix of positive and negative NMMs as discovered by the author

(1,2,12) creates nuclear pressures to cause superconductivity at higher temperatures even beyond room temperature. In such systems having positive and negative NMMs as by including and clumping ^{13}C, ^{15}N, ^{17}O, ^{25}Mg and ^{33}S with normal nuclei of ^{1}H, ^{14}N, *and* ^{31}P in normal biomolecules then the opposing NMMs interact to create radiowaves in the cancer cells (1,2). This also explains how radio waves can cause cancer (1,2). But then again radiowaves can be tuned to selectively stimulate cancer cells to kill the cancer with less harm to normal cells {1,2). In normal life, proteins having all - NMMs and the + NMMs pull in thermal energy of space and agitate the + NMMs of ^{1}H, ^{14}N, ^{31}P to alter the biomolecules causing their motions and interactions and ferrochemical cycles of normal operating cell and tissue but the thermal energy is released for dissipative cycles. But cancer having + NMMs and – NMMs pulls in the thermal energy of space and fails to dissipative the thermal energy but converts thermal energy and heat to radio waves, electric fields, magnetic fields, quantum fields to alter biomolecular bonds and motions and cancer is more sensitive to heat because of this effect of its mix of positive and negative NMMs.

Normal Logistics by RBL Theory as by ^{1}H, ^{14}N *and* ^{31}P

In normal cells, the nuclear pressures by ^{1}H, ^{14}N *and* ^{31}P provide a basis for logistics of various enzymatic reactions, cycles and steps and time crystals in biochemical systems in cells. Such nuclear pressures drive Kreb logics and Glycolysis logics and time crystals. Interaction specific steps and cycles are more affecting nonprimordial stable isotopes and are more affected by nonprimordial stable isotopes as by Little's Rules. Energy production is less affected by nonprimordial stable isotopes as by Little's Rules. The role of ^{31}P and its nuclear pressure (1,2, 12) is critical for quantum computing in brain (14). It may be that in evolving from creation, energy production in higher forms of life for motions, eventually led to such energy production for motions of host transforming to energy production for logic by host. The development of such energetic logic for movements of host organism to using those same energetic biomolecular processes for development of dynamics for computing, brain molecular units and intellect seems consistent with organisms of different complexitites from bacteria to man. As life developed into more and more complex organisms, the logistics of energy production in muscles led to muscle of the brain as the energy production in brain muscle is used to do reasoning and logic rather than do physical work of moving mass of the host organism through distance. But theses energetics of host motions and host thinking are related. Exercise and brain activities are related in this way. NMMs allow logic near room temperature. This must be as how can these high energy bonds be induced to alter for logic, structure and interactions for logic as some hidden energy perturbation is in action and that hidden energy perturbations are from nuclei and nuclei can couple to surrounding heat due to denser by Little's Rules and the release nuclear energy perturb electronic lattices of C, N, O and H for biochemical processes and logic!

Cancer Modifies Normal Logistics by Addition of ^{13}C, ^{15}N, ^{17}O, ^{25}Mg and ^{33}S **to alter Normal Logisitics of** ^{1}H, ^{14}N *and* ^{31}P

As ^{13}C, ^{15}N, ^{17}O accumulate, tiny changes in properties arise. Then at some critical number of nonprimordial stable isotopic enrichment in macromolecules or nanodomains at a threshold of clumping dramatic changes occur. There is only one ^{31}P isotope and this is good for ATP, brain activities and nervous system can reliably depend on ^{31}P the only isotope of P to provide machnary for these funations by its positive NMM. ^{6}Li *and* ^{7}Li (15) modifies role of ^{31}P by its + NMM so

Lithium affects nervous system and brain. It has been shown that Xe can manifest as an anesthesia (16). As Xe is a noble gas, the author correlates this anomaly with the nonzero NMMs of **^{129}Xe** and ^{131}Xe. With isotopes of the *^{1}H, ^{14}N and ^{31}P* , the positive NMMs give logic to prevent cancer. But the ^{13}C, **^{15}N** and **^{17}O** continue accumulating to cataclysmically affects intrinsic normal positive NMMs and rhythms of *^{1}H, ^{14}N and ^{31}P* for causing aging and disease. Uncommon stable isotopes gradually shift normal logic to cancer logic with aging. But then for some one addition of uncommon nonprimordial stable isotope beyond threshold, then the cataclysmic stable isotopic quantal change in chemistry occurs with dramatic changes in properties. In this gradual and then in cataclysmic fashion beyond the threshold, stable isotopes block suppressor of *^{1}H, ^{14}N and ^{31}P* as isotopes of ^{13}C, **^{15}N** and **^{17}O** counter normal *^{1}H, ^{14}N and ^{31}P* activities and drives for inducing rather than suppressing cancer. Note the intrinsic **^{1}H, ^{14}N and ^{31}P** are all positive NMMs and help each other. But ^{13}C is positive NMM and **^{15}N** and **^{17}O** and **^{25}Mg** are negative NMMs and they help each other dissipatively but oppose normal *^{1}H, ^{14}N and ^{31}P* dissipatively. The dissipative effects lead to life cycles. The opposing dissipative blocks macrocycles and life focusing dynamics into local molecules as new quanta and wavefunctions. It may be possible to excite such novel quanta states in cancer.

^{17}O And ^{13}C Are More Detrimental Than ^{15}N

So proteins act to keep out ^{13}C, **^{15}N**, **^{17}O** and **^{25}Mg**. But if clumping of ^{13}C, **^{15}N** and **^{17}O** in proteins, then they oppose normal dissipative activities of *^{1}H, ^{14}N and ^{31}P*. *^{14}N* is in back bond and ^{12}C is in back bond so less effects of ^{12}C and *^{14}N* shift to ^{13}C and **^{15}N**. As there are fewer N-N bonds of molecules of life, clumping **^{15}N** is less effective for immediate adversity on life. **^{15}N** is easier to enrich by replacing ^{14}N due to large change and change in polarity of NMMs from + to – NMMs from ^{14}N to **^{15}N** with consequent large change in polarizability of electron cloud. But N in general are labile to N_2 production and there are fewer N-N bonds in biomolecules of living organisms. **^{17}O** is easier to replace ^{16}O relative to **^{15}N** replacing ^{14}N due to the – NMM of **^{17}O** and the stronger $e^- e^-$ interactions in O with e^- excessiveness of O relative to N for stronger $e^- e^-$ fixation of O relative to more difficult electron fixation and rehybridization in N. ^{13}C is even more difficult than N for fixations and rehybridizations as the C centers have fewer electrons and are electron precise so $e^- e^-$ interactions are limited in fixing carbon centers and 4 covalent bonds have to be formed and hybridized. Thereby replacing ^{12}C by ^{13}C to enrich ^{13}C is even more difficult than replacing ^{14}N by **^{15}N**. In prior work the author discovered and disclosed the **^{17}O** can accelerate the fixation of nearby ^{13}C for catalyzing the enrichment of C by ^{13}C. When researcher replace ^{14}N by **^{15}N** few effects immediately observed (17), but over time **^{15}N** may help ^{13}C pull into organism over longer times. But C-C bonds are more common and change ^{12}C to ^{13}C causes immediate dramatic changes in protein and nucleic acid properties for altering biochemistry and biology.

Import of Many Isotopic Functional Groups Verses One Functional Group For Disease

Scientists and engineers are looking for old way of one functional group causing change leading to disease. But the author (1,2) introduced use of many functional and collective NMMs for novel dynamics leading to disease as by addition of uncommon ^{13}C, **^{15}N**, **^{17}O**, **^{25}Mg**, and ^{33}S. But normal *^{1}H, ^{14}N, and ^{31}P* involves collective effects of the prior theory of author (1,2) for normal biological operations. But **^{25}Mg** binds **^{17}O** and **^{25}Mg** binds **^{15}N** and **^{25}Mg** binds C so change to **^{25}Mg** has large effect. Change O from ^{16}O to **^{17}O** has bigger effect than changing ^{14}N to **^{15}N** (on **^{25}Mg** binding and) on O binding C, N and H and other O in many biomolecules to dramatically

affect life by changing ^{16}O to **^{17}O**. C and O have effects in sugars; C and O have effects in fats. Fats have chains of sp^3 alkanes and less ^{13}C enriched. Sugars have C and O and many O and can form ring structures and are more subject to ^{13}C and ^{17}O enrichments due to such. Sugars cause diabetes and cancer. Sugars are converted to fats. Clumping of **^{25}Mg** and clumping of **^{17}O** cause diseases. But prior to RBL other scientists have missed this ill effect of **^{17}O** as they do not try to directly measure **^{17}O** but assume its enrichment and consequent properties are as ^{18}O. They have missed this. **^{17}O** is needle in haystack! O stable isotopic replacements have been assumed due to H and D but O replaced to **^{17}O** has dramatic effects on biochemistry (1,2) and they clump to alter dynamics. **^{17}O** has faster effects on ^{12}C to ^{13}C replacements (1,2) and ^{14}N to **^{15}N** replacements with greater changes. But researchers have assumed similar effects of **^{17}O** to ^{18}O due to greater masses but ignored the large negative NMM of **^{17}O** and how it alters ^{17}O relative to ^{18}O. On the basis of the author's theory and NMMs (1,2), this is why O_3 is enriched in **^{17}O** and NO_2 and NO_3 are enriched in **^{17}O**.

Normal Molecular Logic and Cancer Molecular Logic

Such upregulations and down regulations by stable isotopic replacements for cancer occurs nonrandomly and logically as the cancer is life itself and there is logic associated with cancer for its survival just as there is logic associated with normal life. But the logic of cancer is different from the logic of normal cellular processes and life uses stable isotopes of ^{1}H, ^{12}C, ^{14}N, ^{16}O, ^{24}Mg, ^{31}P and ^{32}S (primordial stable isotopes) for logistics. But compare such normal life stable isotopes verses cancerous ^{2}H, ^{13}C, **^{15}N**, **^{17}O**, **^{25}Mg** and ^{33}S (nonprimordial stable isotopes) to manifest these logical differences between cancer and normal life metabolisms. By the recent theory [1,2], these enrichments of nonprimordial stable isotopes in normal DNA alter the logistics of normal cells for cancer genesis. Interactive, specific processes of anabolism (like replications, transcriptions and translations) are more affected by stable isotopic changes; other processes like energy production catabolism in Kreb and glycolysis are less affected by nonprimordial stable isotopes. Logic as by ^{31}P is caused and affected by seeping of NMMs into electronic lattices to alter quantum dynamics. So also ^{13}C, **^{15}N** and **^{17}O** can affect the logic during anabolism endothermic processes by seeping NMMs into electronic lattices to thereby alter normal seepages of NMMs of ^{1}H, ^{14}N *and* ^{31}P. There is only one stable isotope of P (^{31}P) but there are different stable isotopes of H, C, N, O and these uncommon, nonprimordial stable isotopes cause different logic during replications, transcriptions and translations. The beauty here of involving these uncommon stable isotopes is that they can introduce subtle changes involving the same atoms, molecules, functional groups, macromolecules and nanostructural biology. But when involving many pieces having different clumpings of stable isotopes on nanoscale, the nanoscale properties are different (and cause collective cataclysmic beyond threshold of stable isotopic enrichments) and such nanoscale properties are quantum logic, signaling and life. This is the only way the theory [1,2] sees subtle changes for aging and altering life for disease as atomic changes would dramatically alter life in ways for death of the cell (both cancer and normal cells)!

Normal Logistics Oppose Cancer Genesis

There are logics associated with preventing cancer during normal cellular processes. Logics occur not only in brain but in every cell in body. Just as logics may be involved in brain cellular functions by ^{31}P quantum logistics, there are logics during DNA replications, RNA transcriptions and protein translations. Just as the NMMs that allow **^{31}P** to be platform for logistics in brain and the logic for energetic transductions for moving host organism, then

likewise the NMMs of ^{14}N, ^{1}H, *and* ^{31}P allow them to manifest logistics in proteins. So nonzero NMMs of ^{13}C, $^{15}\mathbf{N}$, $^{17}\mathbf{O}$, $^{25}\mathbf{Mg}$ and ^{33}S and other nonprimordial stable isotopes of nonzero NMMs can alter normal cellular logistics of ^{14}N, ^{1}H *and* ^{31}P for nonprimordial stable isotopes to adversely alter normal cellular logistics. Thereby uncommon stable isotopes produce altered proteins to activate different genes to produce proteins to block and suppress normal defense against cancer. These nonprimordial stable isotopes can block cancer gene suppressors by binding them; so cancer enzymes and genes go unchecked by suppressors genes. The upregulations can be caused by stable isotopes as the stable isotopic enriched genes will translate compatible stable isotopically altered proteins. Then the stable isotopic enriched proteins help form DNA characteristic of cancer. And DNA transcribe stable isotopically altered RNA that are cancer compatible and the RNA then complete the cancer cycle by producing stable isotopically altered proteins that caused the cancer cycles for upgrading the cancer to mature stages of its development. Isotopes in DNA produce proteins with stable isotopes that are cancerous. The stable isotopes produce genes and proteins that block the natural protector genes and enzymes as protectors have unusual stable isotopes.

Conclusions

This work determines that in addition to enrichments of nonprimordial stable isotopes of nonzero NMMs, the clumpings of these nonzero-NMMs by normal cells even globally in relative abundance but clumpings locally in specific, multiple sites in enzymes and nucleic acids cause dramatic alterations of the biomolecules for causing cancer, other diseases and aging in general ways. Moreover, stable isotopic replacements and clumpings in cancer cells are shown to alter functionalizations of nucleosides, nucleotides, oligonucleotides and the telomeric gene by altering patterns of protonations, methylations, acetylations, aminations, hydroxylations and phosphorylations of DNA in cancer cells relative to DNA in normal cells for causing altered upregulations, downregulations and mutations for different properties of the cancer DNA relative to the normal DNA. This work determines novel unbefore effects of neutrons in nuclei on chemical reactions. Moreover, the cataclysmic effects of threshold clumping of nonprimordial stable isotopes on macromolecular and nanoscales are given in details for extreme sudden change in properties beyond the threshold of nonzero NMM assembly. Such effects are a basis for novel unconventional nuclear processes under milder conditions but greater magnetic and electric fields. The coupling of the electronic (leptonic) quantum fields to strong force/interaction is reasoned.

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