

## Reduction and Relief of Cancer using Activated Light Emitting Diode

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### Abstract

We report various researches on minimal catalyst (MICA) water and spin information gauge network (SIGN) water from 2009 to the present. The theme is our body, besides plants, animals, and substances like vinyl bags, fiber and LED light even atmosphere. Furthermore, we also reported the change of atoms from radioactive cesium to stable barium after the Fukushima accident in 2011. Our water science and technology are relevant to dissociating hydrogen bonds in water. We fabricated SIGN water under the pressure of more than 100MPa rather than 3MPa for MICA water. The difference may be the abundance rate of the elementary-like particle (infoton) after hydrogen bond dissociation; namely, we assume three times in SIGN water than MICA water, although it is the same works, and both emit far-infrared through terahertz. Here, we focus on SIGN water and present recent research on oxidation-reduction. Potential and blood tests involving diabetes besides user's comments after using the water and the activated LED light to the affected parts on our body.

### Introduction

Water indebted every day is more than unusual and living organisms can't live without it. Based on the location, there is either abundance or lack of water, and is widely available on earth. Researchers have tried to identify different uses of water such as a solvent for anything else. On the other hand, they research water with X-ray or neutron diffraction to investigate the structure and water arrangement. Their developments of applications are macroscopic H<sub>2</sub>O molecules. Furthermore, their fields cover wide regions like biology, chemistry, medicine, physics even geology. We can say water is interdisciplinary [1]. We do not refer every publication since there are so many research articles besides a text book [2] and scientific magazine [3]. We research a water which is said to involve 60~70% in our body and 80% in the blood. We covered various fields such as decreasing car exhausted gases, when we started the technology with MICA water (Minimum Catalyst) [4] (we assume approx.60% containing the pico-sized particles of tap water). Secondly, we followed to develop the water research, such as maintaining foods fresh [5], and the change of radioactive cesium to stable barium [6]. Then I consolidate to create the water physical meaning from the different sense of water. I name it SIGN water---Spin Information Gauge Network water---after dissociation of hydrogen bonds of water (almost 100% containing the pico-sized particles). The characteristics of SIGN water are possessing the assumed particle, infoton, <H<sup>+</sup>e<sup>-</sup>> oscillating with the frequency of far-infrared from terahertz wave with 10-12 m order (= 1/1000 nano meter) [7]. The particle's information may transfer to a common substance even living organism through emitting the electromagnetic wave in space. Needless to say, light is also target to receive the infoton's information through the materials in LED, for instance. The activated light affects blood or blood flow control in our body.

Then, we reported decrease of radioactive radiation involving theoretical formula we found [8]. Here, we report the development of the activated LED light, and cure cancer since we may approach the functions of not only proton but also electron in hydrogen (H) of infoton which plays anti-oxidation to various diseases and relief of our health by drinking MICA water or SIGN water. Here, we report

the activated light to any material and the affected area or whole body relating to blood flow to cure disease, and get healthy, in which mean the change of reduction condition from oxidized status.

## Method

The starting material is ordinary tap water applied at higher pressure than 100 MPa without any added substances for 10 min in the facility (approx. 3mφ x 5m depth) containing water. We analyzed the water to the relaxation time (T2) and free induction decay (FID) in hydrogen-NMR (R-90H, Hitachi Co. Ltd.). We compare the values of T2 and FID with those of the tap water of the original one. Then, we estimate the smallness of it indirectly. We employ ORP (Oxidation-Reduction Potential, Mother Tool, PH-230SD) instrument to judge directly whether water becomes SIGN water or not. Moreover, we use the Fourier-Transform Infrared spectroscopy (FT-IR 6000, JASCO) to confirm the transmittance of the terahertz wave (region of 0.6 to 20 THz) through the water since ordinary water usually absorb the THz wave. The two methods to print the information of SIGN water; 1) to immerse into the SIGN water, 2) to irradiate something with the activated LED. We can judge whether a processed substance has the SIGN water's information or not, using H-NMR [9, 10].

Moreover, we use Ryodoraku and AMSAT (Automatic System Analysis Therapy) instruments for human body to pass an electric current through a body [11].

We recommend to keep separating distance every sample more than one meter to avoid transferring SIGN water's information to the control (reference sample).

Cancer has been famous disease in variety of the fields for the kind, causes, sites in a body, pathology, medical treatments and medicine [12, 13]. Other animals and plants seem the same. We can't cite every reference of cancer in the world, so we leave specialized book or technical magazine for detail issues of cancer [14-16]. A cancer is sometime beyond human control at the present science and technique. We must cope with a cancer as the problems in the total system in our body, although it is also important to investigate the level of genes. There are scare of researches for cancer with water and we may comprehend cancer as the oxidized cell basically.

## Results and discussion

### *Functions of far-infrared (far-IR) and terahertz (THz)*

The energy of infoton is weak such as 0.03 eV corresponding to far IR through THz which resonates with our body temperature described previously. We may assume similarity of our body to an electrical circuit, namely, our skin is a condenser that is semiconductor (capacitor) due to containing water and acupressure points to coil and disease or cancer is resistance.

We analysis disease in a body corresponding to an electric circuit in analogical way. Those electromagnetic wave of long-wave works for resonance with our body which equals to approx. 300 nm (nano meter). Electric current, namely, electron may affect cancer cells which must be an oxidized status of the cells and electrons attach them according to the following equations;

$$Y_p = \frac{1}{R} + j \left( \omega C - \frac{1}{\omega L} \right), \text{ namely, } Y_p \propto I/V, \quad (1)$$

$$U = \frac{1}{2} L i^2 (\text{Joule}) \quad (2)$$

$L$  is a self-inductance (Henry) defined for coil in the electric circuit relating to an intrinsic frequency ( $f$ );

$$\omega = \frac{1}{\sqrt{LC}}, \text{ then } f = \frac{\omega}{2\pi} = \frac{1}{2\pi\sqrt{LC}} \quad (3)$$

where,  $\omega$  is rotational angular velocity (probably constant corresponding to hurt beat) A capacitor store charges coulomb (C) in a series circuit, and current can flow in an alternating circuit depending on an electrostatic capacitance leading to the current,  $Y_p$  in (1) and current,  $I$ , increases that means the energy,  $U$ , becomes larger in the cancer cell resulting in the chemically reductive situation from oxidation of the cell.

### Oxidation-Reduction Potential (ORP) spectra

Before the discussion of ORP, we introduce how white LED is activated with SIGN water briefly, although detail mechanism is abbreviated here. Gallium nitride (GaN) emitting blue light is covered with photoluminescence, Yttrium Aluminum Garnet ( $Y_3Al_5O_{12}$ ), then the composite emits the white LED. These compounds and glasses outside are activated by SIGN water atmosphere leading to the light from the white LED.

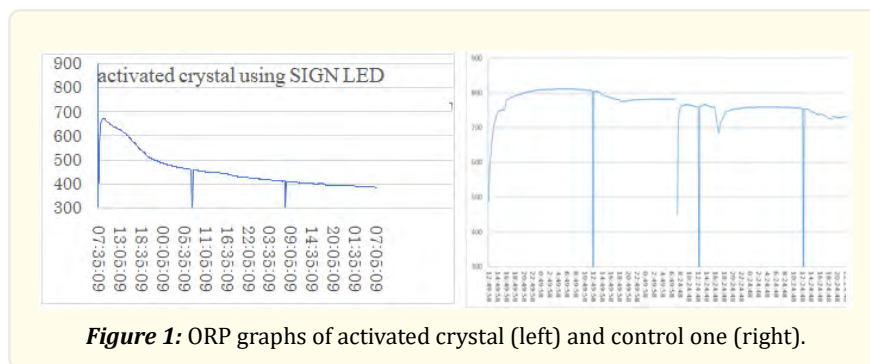
Now, ORP measurement of water is the novel and visualization device to judge whether water and other substance (like a glass) are chemically reductive or not.

Judgment of SIGN-LED light using ORP changes according with Nernst equation as following;

$$E = E^0 + \frac{RT}{F} \ln \frac{a_{H^+}}{(p_{H_2}/p^0)^{1/2}} \quad (3)$$

$E^0$ ; standard hydrogen electrode (V), R; gas constant ( $=8.3144^{-1} \text{ mol}^{-1}$ ), T = Kelvin, F; Faraday constant ( $=9.64853 \times 10^4 \text{ C mol}^{-1}$ ,  $a_{H^+}$ ; hydrogen activity,  $p_{H_2}$ ; hydrogen partial pressure (Pa) and  $p^0$ ; hydrogen standard pressure( $=101.3 \times 10^3 \text{ Pa}$ ).

The typical spectra show in Figure 1. We understand the SIGN-LED plays reductive function according to the equation (3) and the spectra. The far-IR and THz wave may transfer the infoton in space.



**Figure 1:** ORP graphs of activated crystal (left) and control one (right).

Vertical axis shows a potential voltage and abscissa means time (first, second and third day).

The crystal (size; 10 mm $\Phi$ , main content;  $SiO_2$ ) is reduced with the light of SIGN-LED shown in Figure 1 and we can confirm reduction for one day. The value of pH was 7.6 (tap water; 7.4). We can recognize that SIGN water is reductive remarkably.

### Blood test reflecting a whole-body condition

Insulin is a peptide hormone generated by beta-cell in pancreas. Insulin in blood makes glucose urge to be absorbed in liver, adipocyte and skeletal muscle, then controls metabolism of carbohydrates, protein and lipid [16-18]. The glucose taken into these cells might be generated or synthesized to neutral lipid via lipogenesis so that blood tells us our body condition in the oxidation and reduction from the substance changes. We cannot neglect water as well as blood from consideration of a whole-body even cancer.

Before discussion of cancer [19-21], we introduce the popular disease associating with blood.

### Diabetes

The diabetes is the popularist one reflecting to a phase of life, so there are many articles and we can't cite every reference [22]. Blood glucose level continue higher than normal value such as 80~126 mg/dl besides higher hemoglobin chronically.

Diabetes is due to either the pancreas not producing enough insulin, or the cells of the body not responding properly to the insulin produced. There are two main types of diabetes mellitus [22]; The causes are obesity, high blood pressure and hyperlipemia [23, 24].

We regard diabetes as not only pancreas but also blood which relates to a total system in the body, namely other organism like gastroparesis [25, 26] and biochemistry as well as biophysics [27]. The gastroparesis relates to a medical disorder consisting of weak muscular in the stomach resulting in foods remaining in the stomach for a long time. This kind of illness may cause the diabetes.

Table 1 shows one example of the blood test. This user is originally not so bad condition.

We presume the result means the good condition of blood absorption due to the pico-size of SIGN water and an electrical conductivity (electron transfer) can be improved physically. Another evidence of blood is introduced later.

	<i>Standard values</i>	<i>Before drinking SIGN water</i>	<i>One month after drinking SIGN water</i>
Leukocyte (white blood cell)	3~8 / $\mu$ L	4.67	5.56
hemoglobin	14~17 mg/dL	10.76	11.2
platelet	120~350 / $\mu$ L	122	143

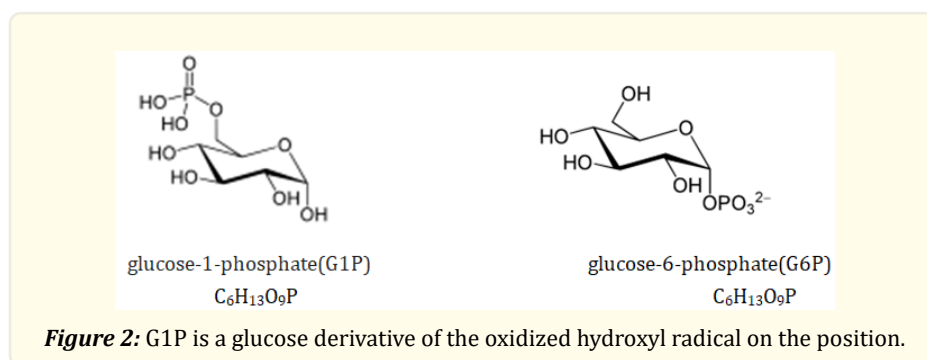
**Table 1:** Blood test of a person (male of 70 years old) to indicate the effect of SIGN water.

Another blood test is HbA1C. Hemoglobin (kind of protein) involved in blood works for oxygen to a whole-body and collect  $\text{CO}_2$ . In the case of hyperglycemia (elevated blood-sugar levels), there are much glucose in blood and hemoglobin binding with glucose is called glycohemoglobin (HbA1C).

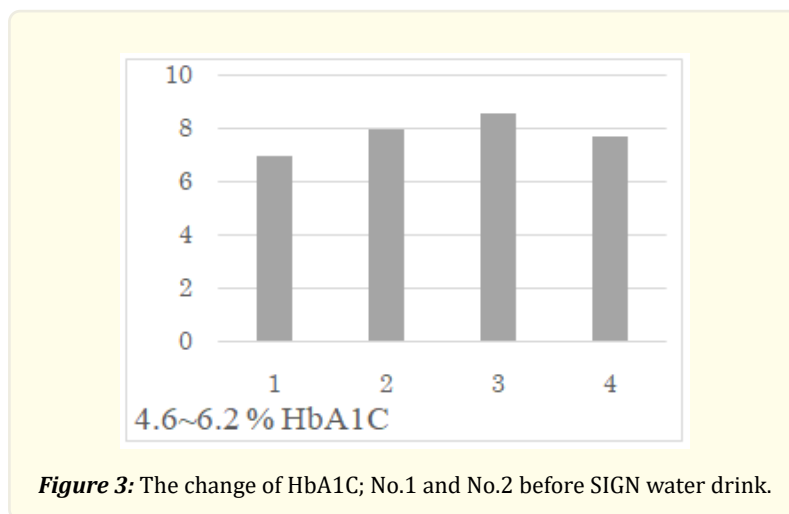
Metabolism involves two processes, namely catabolism to generate energy with dissociating substances, and anabolism synthesize the substance by the energy, for instance protein, nucleic acid (DNA and RNA), polysaccharide and lipid.

Glycogen is dissociated to become a glucose, then glucose-1-phosphate which may be transferred to glucose-6-phosphate first. Glycogen is poorly soluble in water while glucose is readily soluble in water and the primary energy source in living cells.

The double bonds are alternately placed in a benzene ring. The bond strengths are 6.3 and 3.6 eV in double bond (C=C) and single bond (C-C), respectively [28]. So, the energy difference is approximately 1.8 times leading to either one, G1P or G6P.



Therefore, it is important to release glucose by drinking water without store in blood.



No.3 indicates the status of two days after drinking, in which seems to be a kind of antigen-antibody reaction. No. 4 shows the status after one month of drinking.

### **Blood flow and speed**

The blood flow and the speed relate to whole-body system in our body. Here are some evidences, an 11.0 % increment of the blood flow and a 3.4 % up of the speed with putting on MICA socks and drinking MICA water. But there was no change of the pulse. We presume this is why  $O_2$  enhances due to a pico-water taking oxygen easily resulting in  $CO_2$  reduction, then increment of elasticity of heart muscle and reduction of blood viscosity. As the result, metabolism is more efficient. One spot of blood in a finger is put below a microscope, then we can observe the blood flow status in capillary vessels.

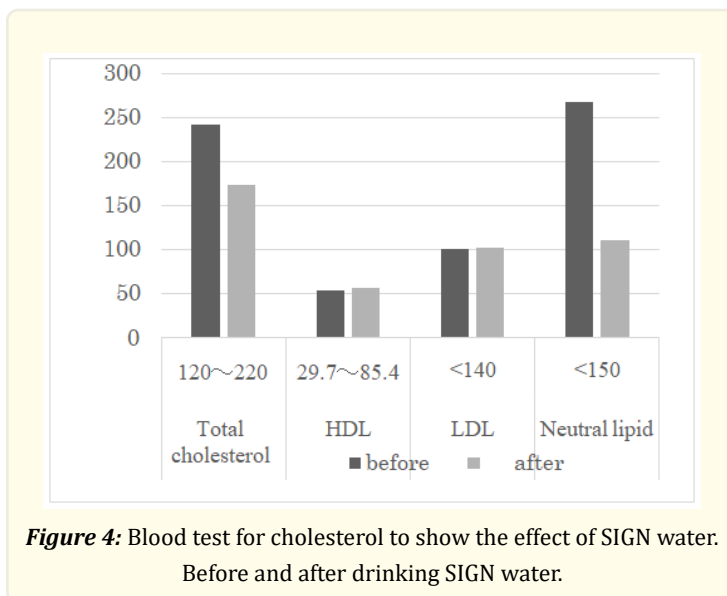
### **Cholesterol**

Cholesterol is an essential constituent of biological membrane for animal cell and primary molecule associating with a various process inner cell. So, this theme is also spreading item. We focus on the data using SIGN water.

Lipoprotein flowing in blood vessel is defined as HDL (high density lipoprotein) and LDL (low density lipoprotein) in chemically or centrifugal method and the essential particle of cholesterol is much contained for life-support system.

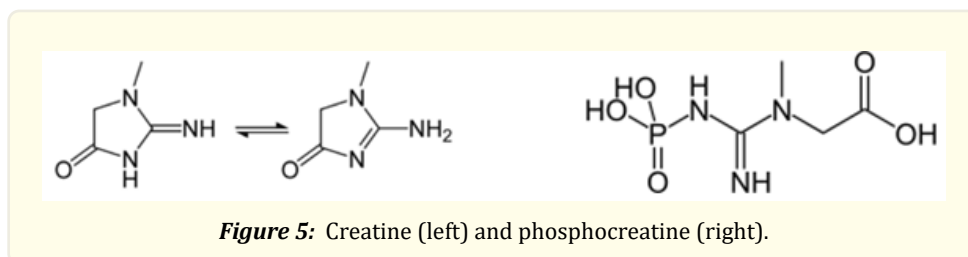
People call HDL good and LDL bad cholesterol. Lipid is necessary to bind protein in blood plasma stably.

This protein is called lipoprotein in which HDL is higher specific gravity and LDL is lower one. Therefore, HDL is smaller particle with bound with protein on the contrary, less lipid. Apolipoprotein binds with lipoprotein leading to more amount of HDL and less lipid as shown in Figure 4.



### Urine

This theme relates to energy in our daily life. Creatinine generates after phosphocreatine works for energy to bound with phosphorus like Figure 5.



Finally, kidney filtrates to drain as urine. Therefore, increment of creatinine in blood means poor function of kidney. The amount of creatinine decreases 1.34 to 1.21% after one year his drinking SIGN water.

The activation of nitrogen in creatine smoothly occurs because of electron's movement from phosphorus to nitrogen from the stand point of electron configuration;

N;  $2s^2 2p^3$  and P;  $3s^2 3p^3$  in s-orbital and p-orbital in each atom. So, nitrogen activation with SIGN water promotes to form phosphocreatine.

### Cancer

This issue is variety of theme and the fields are spreading, and many researchers discuss and report the cause, immune system, medicine, medical treatment etc. [29]. So, we focus on the heal of cancer by contributing the novel substances which means to possess reduction action from the oxidized state [30]. First of all, what I introduce is reduce the thyroid cancer of twelve years old boy and radiation contamination in internal whole-body of 50s female in Fukushima, 2013 [6].

$\beta$ -glucan is one of dietary fiber in polysaccharide which is much contained in mushroom and yeast to increase immunity, and may

be prophylactic affect cancer. Furthermore, polysaccharide is one of an energy storage substance. More precise professional issues are not presented here.

Mesima mushroom has been well-known for anti-cancer [31] and immune enhancement action like reduction process with infoton [32]. For instance, they refine polysaccharides from fruiting body of shiitake mushroom.

### *Some evidences from users*

We have many information from users who drinks SIGN water and employ SIGN-LED to affected parts.

#### *Plastic surgery*

Achilles (left) tendons due to stroke get swollen and go to plastic surgery once a week three years ago. The treatments were shock wave, ultrasonic and electrotherapy.

It has passed one year and three months. After that, he (60 years-old) continues to drink SIGN water for one year and swollen has gone and features he feels pain decreased drastically. The physical therapist was surprised at it.

#### *Cataract*

We hear that cataract of a few people (60~80 years old, male) heals in a couple months after drinking SIGN water.

Lens is composed of ciliary body and Zinn's membrane playing for muscular relaxation. Muscle strength becomes weaker and clouding of normally transparent due to aging and stress.

The constituents in the lens are protein (33%), water (66%) and others (1%). The protein is crystalline which is the predominant structural proteins in the lens. Here is the hint, namely water is definitely important. SIGN water works for purification of cataract and help the muscle.

#### *High blood pressure*

Someone (65 years old ---male) explained his blood pressure from 190 to 120 after drinking SIGN water for one year.

There are some causes to have high blood pressure. From people's appearance, the cause is obesity and age. Ambiguous phrasing of the cause is lack of exercise, stress and heredity. Now we can say the high blood pressure happens due to thinner blood vessel and now, what we can treat. The first one is to improve blood flow as we discussed in the previous section.

Something attached on the inner wall of the vessel may be dissolved and taken away with the pico-sized particles, then smooth flow in the vessel.

#### *Alzheimer's disease and other neurological disorders*

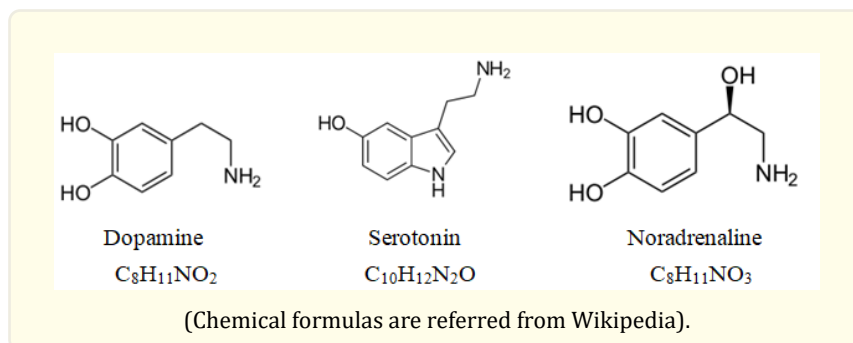
The husband (80s) tells us that his wife speaks smoothly to communicate with him recently, after drinking SIGN water for a half of year.

Amyloid beta(A $\beta$ ) protein was found in brain cell of Alzheimer patients and they are suspected the disease since then [32-34]. Amyloid is a kind of protein containing amino acids. There is also various research of medical treatment, medicine and cell level [35-37].

Now we assume the mechanism to become Alzheimer's disease from the standpoint of amino acid, we can compare with chemical bond strength of the radical in the molecule [28]; N-H (3.6eV) < O-H (4.6eV) < P=O (5.8eV).

We discuss the mechanisms from the standpoint of physical chemistry or physical chemistry, although they report immune system

[38-40]. Firstly, we introduce the well-known substances of neurotransmitter as shown in Figure 6. Those substances involve central nervous system.



Dopamine is neuro transmitter in central nervous system, and precursor of adrenaline and noradrenaline. Dopamine involves in control of exercise and hormone regulation, emotion, willingness, learning.

Serotonin involves for regulation of circadian rhythm, neuroendocrine, sleep and body temperature.

Noradrenaline functions as hormone secreted from adrenal gland to blood, and one of stress hormone. The brain possesses the receptor to take hormones, which is a kind of antenna. Normally, the hormone after working for information transfer may leave from the receptor. But we become Alzheimer, depression or another psychosis if the hormone cannot leave the receptor. We presume it is oxidized condition, then resulting in the lack of hormone.

## Conclusion

We could elucidate in terms of reduction what infoton like the elementary particle in SIGN water is helpful on the premise that disease is the oxidized conditions in our body. We reported our results in any plant and animal besides our body, based on ORP data and user's comments. Furthermore, LED light is also activated with far-IR and THz from an elementary particle like infoton in SIGN water and affects the subject and our body.

We introduced evidence of effect from users who drink SIGN water and LED light in daily life, including animals.

## Acknowledgement

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