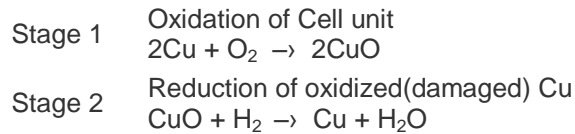


• Secret of Hydrogen-rich Water

Courtesy of Functional Medicine University

1. Redox Reaction

In junior high school chemistry we learned that the redox reaction or oxidation-reduction is the most universal, fundamental as well as important of all. The problem of life and death as well as health and sickness could, therefore, be explained and demonstrated by the concept of redox reaction. We can recap these concepts with a following analogy. Copper(Cu) loses its glittery by oxidation and is restored by reduction. In quite the same way, a cell unit(call it Cu) is damaged (made sick)by oxidation and is restored (cured) by reduction resulting in the production of H₂O.



2. Water, the prerequisite for every life form

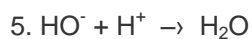
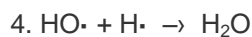
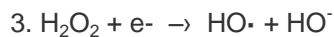
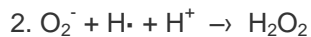
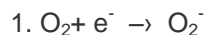
Water or H₂O is the very product of redox reaction, i.e.a product of reduction by Hydrogen and oxidation by Oxygen. Therefore, it is only natural to say that every life form, born in H₂O should be under the influence of redox reaction. In short,oxidation brings it sickness and reduction restores it to health again. It is quite clear from evolutionary record that life forms could have developed in water, because it was an environment which provided them all the necessary and enough conditions for birth and survival of them all.

3. Active Oxygen

Active oxygen species are considered to inactivate enzymes in the cells, damage DNA and destroy lipid membrane which should cause every disease, aging as well as cancer as far as the most recent medical research is concerned. In other words, if we can succeed in preventing oxidative damage by active oxygen species, we can control the disorder as far as my theory is concerned.

4. Active Hydrogen

Then what is the most ideal countermeasure against active oxygen ? It should be nothing but 'active hydrogen' as far as the logic is concerned. Active hydrogen or atomic hydrogen is known to have strong reducing potential. It is only natural to say that active oxygen species can be reduced or scavenged to produce O₂⁻, H₂O₂ and HO· one after another to produce H₂O as a result, as shown in the following.



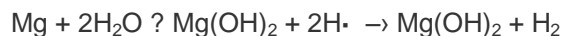
5. Hydrogen Poor Water

According to my concept, water can be classified into two kinds, i.e. hydrogen poor and hydrogen rich water.

Natural water or 99.9 % of water found on the earth can be defined to be hydrogen poor water because of hydrogen bond energy connecting hydrogen with oxygen to make H₂O. It is a logic of mine that natural water, hydrogen poor water, can't be enough to reduce or scavenge active oxygen species, which should have compelled us mankind to develop a procedure with which we can fight against sickness being brought as the result of oxidative damage by active oxygens. In other words, human medicine should be a kind of fiction based and developed on our inevitable intake of natural water or hydrogen poor water. On the contrary, we could easily be free from sickness when we depend on hydrogen rich water which can be enough to scavenge active oxygen species.

6 Hydrogen Rich Water

It is known that magnesium reacts with water to produce hydrogen gas when it is heated. We confirmed, however, that magnesium produces hydrogen gas even in water with room temperature which could be demonstrated by Portable Hydrogen Detector developed by ourselves being explained in the following chemical formula.



Active hydrogen in Hydrogen Rich Water binds with active oxygens to produce H₂O. Molecular hydrogen in Hydrogen Rich Water can be splitted to atomic hydrogen by hydrogenase in our body being implied by R.Happe in his paper

'... hydrogenases are enzymes that can reversibly split molecular hydrogen.

... Ni/Fe hydrogenases are among the oldest enzymes (3.8 billion years old), demonstrating early that life forms had developed an effective way to activate molecular hydrogen at ambient temperature and pH.

(BIOLOGICAL ACTIVATION OF HYDROGEN ; NATURE,385,126,1997).

7 Hydrogen Producing Mineral(HPM)

'Hydrogen Rich Water' can easily be obtained by utilising the reaction of water with magnesium, hydrogen producing mineral, whose preparation is named 'HPM stick' and is being presented by us for general use.

Magnesium oxide has long been used in medicine as a antacid and laxative. Quite a new aspect of the mineral, producing ability of hydrogen to scavenge active oxygens has been clarified now for the first time by us,