2008

Beta Anti-Oxidation

Soluble electrons as anti-inflammatory free radical neutralizers

This paper is a modernized view of a 3000 year old healing technology. It reconsiders the scientific basis for use of "soluble" electrons as free radical scavengers. Free-radical neutralization is a significant therapeutic method in pathogen driven toxic syndromes, Autism, Insomnia, Autoimmune conditions, and cancer.

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4/18/2008

Contents

Electron Basics

An electron is usually described as a small charged particle which orbits the nucleus of an atom. It carries a negative charge. The ways in which this charge interacts with other electrons defines the attribute of the atom.

There are magic numbers. Quantum concepts associated special numbers with “shells”. Atoms have shells which when filled, make atoms which are happy alone. These are called “noble”. There are only eight or so kinds of noble atoms which have complete shells.

All of the other atoms like to partner or join with other atoms to fill up their tendency to have a full outer shell.

Quantum physics was initially defined with the curious tendency for electrons to have magic numbers. These magic numbers, 2, 8, 18, 32, and so on.

Electrons are confusing because while we like to think of them as little balls orbiting a charged nucleus, they sort of are and sort of aren’t.

Particle/Wave Duality

Electrons are confusing because while we like to think of them as little balls orbiting a charged nucleus, are sort of balls, but not really, and act like waves.

When free from an atom they fly, they bounce, but they also spread out. They act like both particles and waves. It is often said that they are waves when we aren’t looking and particles when we are. They act differently when we’re watching.

<<Insert diffraction grating>>

Charged Particle Model

Electricity is electrons in motion. When a battery generates an surplus or a tendency for a surplus of electrons, the surplus of electrons will flow to where there is a shortage when a the two places are connected by a substance which can easily trade electrons.

Electrical electrons act pretty much like particles. We measure electricity by measuring the number of electrons which pass a point. All electronic devices work by moving electrons around conductors, or substances which change their conduction.

Most people are used to thinking of electrons like this. But they are funny critters.

Quantum Electron Bubbles

http://en.wikipedia.org/wiki/Electron_bubble

Over the past couple of decades, scientists began to observe that electrons have different behavior. When they're in water, they create bubbles.

There are some curious experiments which show that electrons, and light has a very strange tendency to travel very slowly in fluids which have big surplus of electrons. These experiments that where a fluid has a pH of 14, ie is totally saturated with electrons, the photons of light dance frantically with the electrons, and light travels very slowly.

Also, the electrons create electron bubbles. These bubbles are little areas that cling to water, much like a solute in a solvent.

This curios tendency enables water to store extra electrons without having surface charge.

To check this, take a piece of radioactive material, typically an electron emitter, and soak the electron emitter in the water for a few hours.

Next remove the electron emitting substance. The curious tendency is that the water will continue to release electrons for several hours after the radioactive material is not present.

The simplest explanation is that the water stores the electrons.

More interestingly, the radiation level of the water, and the emissions from the water never vary.

(Test to see if radioactive duration varies. Immersion of a highly radiaoactive sample should create a more radioactive water. If the electrons are "soluble" how many can a glass of water really hold. More intense emitters should charge water to saturation, and then the saturation electrons should escape. Is the time variable? Is the emission rate variable?

We did some experiments and discovered that the emission rate is fixed. All of the water we tested emitted at a rate of 60 uRads/hr. No matter how "hot" the sample was, water emissions never changed regarless of how hot the sample was or how long it soaked.

When we tested for saturation, we found that hotter rocks kept the water hotter longer. We were unable to saturate the water with electrons after three days of soaking.

This suggested that "electron bubbles" in water reflect an unrecognized mechanism for antioxidant delivery.

Beta Particle versus an Electrical Electron

A Beta particle emitted from a nuclear decay is considered an electron. Smoke detectors use the charge to recognize the presence of ionic absorption. These particles can even be used to generate electricity.

When one of these particles enters water, however it doesn't seem to act like an electrical electron. For some curious reason it generates a bubble and floats around.

Soluble electrons – A new concept

Solute Electrons

Free Radical Basics

What is a free radical

A free radical is a atom which wants an electron. Free radicals reach out and grab electrons from any molecule with weaker, or even equivalent, bonds.

What is Oxidation

A single free radical usually causes a chain reaction of damage. Everybody grabbing electrons causes an unorganized free for all in living cells. The free for all results in molecular mismatches or oxidative damage, where the chemical relationships aren't what they're supposed to be.

What is an antioxidant

An antioxidant is an electron donor. Antioxidants are molecules which have a spare electron and loan or sacrifice these electrons to stop the damage chain that a free radical causes. Antioxidants are very important to prevent cellular damage from oxidative stress.

Doesn't a free electron fill the shell?

Normal and abnormal Free Radicals

Oxidative stress is an essential part of the life process of a cell. It's a part of the life process and it's essential to health.

Free Radical Toxins

A problem is when toxins or pathogens produce free radical toxins. These agents help the pathogen by damaging tissue.

The major target of free radical toxins, produced by pathogens is the cell membrane.

Phospholipid structures which make up lipid bilayer cell membranes are highly susceptible to oxidative damage. We'll talk more about this later.

Pathogens create Free Radical Toxins

The important point is that most pathogens which are outside a cell have a vested interest in damaging cell membranes to weaken them. The weakend resistance often enables the pathogen to breach the cell and infect it.

Free radical toxins disrupt the cells ability to hold power by damaging the electrical integrity of the cell membrane. This damage weakens the electrical field which repels invaders, and enables the pathogen to snuggle up and dock with its favorite receptor breaching and infecting the cell. This is true for most bugs that hijack cells into pathogen incubators.

This is a great strategy for the pathogen. The incubator is perfect because as long as the cell is only slightly damaged, it's less likely that the immune system will recognize the incubator as an enemy and the pathogen will be able to make many copies before the structure of the cell collapses.

By breaking down the electric fence around the cell, the pathogen can approach, and hopefully enter the cell to take it over and turn it into a nursery.

Pathogens that use toxins in this way tend to create inflammation, and the inflammation mechanism calls the body's autoimmune resources, and repair resources to eliminate the pathogen.

Oxidative Inflammation

Excessive free radical creation causes the body to send repair resources to an area. This causes tissues to enlarge, produce cleanup chemicals, and initiate a healing process.

Our bodies are aware that oxidative stress is the calling card. The challenge is to get enough immune resources to the area as fast as possible so that the pathogen can be eliminated before the incubator becomes active.

This aggressive response, and the accompanying discomfort, pain, swelling and the like, shows how important it is to be in a big hurry, using all available resources to get rid of the bugs before they get a solid foothold, and crank out a zillion copies of themselves making a bigger problem for the whole body.

The relationship between oxidative stress, healing and repair is very complicated. The bottom line is that it's very important to get the immune job done as fast as possible to prevent future damage. Our immune systems know this, and when they work fast enough, then they end up working less.

Pathogen Strategies

Well, each one of them has the ability to satisfy or quench a free radical. Most people have heard that using vitamin C moderates cold symptoms.

If you've ever successfully treated cold symptoms with Vitamin C, you will have used a lot. It often takes a huge amount, up to 100 grams per day, to quench the free-radicals of a cold or flu infection.

This huge amount of vitamin C, about 1 cup, gives you an idea of how many free radicals, a cold or flu produces.

In other words pathogen oxidative stress is a staggeringly powerful and prolific influence during disease assault. Quenching the symptoms of a simple cold usually takes twenty thousand times the amount of vitamin C, “government” considers an appropriate for good health.

Back to Antioxidants and Electrons

Remember that antioxidant – an electron donor. The electrons quench free radicals. And quenching the free radicals reduces the cellular damage weapon, and reduces the ability for the pathogens to infect new cells.

Antioxidants protect cell membranes.

While Vitamin C probably doesn’t kill the virus, it disables the main weapon that the virus uses to weaken the cells resistance to the virus penetration.

In other words, antioxidants help neutralize the chemical weapons that bugs use against cells. This extra resistance helps to slow down the rate at which the bugs can propagate making it harder to infect new cells, and effectively decrease the total amount of work the immune system has to do to overcome the infection.

While free radicals aren’t the only weapon in the bug’s arsenal, free radical toxins are a front line assault tool. Neutralizing them can have a solid impact on the ability of bugs to infest cells.

Particle Emitters & the Concept of Radiation

Do you remember those electrons we were talking about?

Particle Categories in Radiation

Radiation is measured. There are several scales that allow us to talk about the number of particles per unit of time.

There are three major categories of emissions:

- Alpha – are helium atoms have high mass, low velocity and are stopped by thin paper;
- Beta – are flying electrons, remember them?
- Gamma – are high energy particles that have a lot of energy and cause ionization.

Particle Energy and Ionization

The damage caused by radiation is reflects one simple factor:

- How likely is the particle to produce a free radical when it enters the body.

If we think about our particles, and the notion that these particles have different penetration ability, some interesting observations surface.

First, our skin is tough. It’s designed to tolerate light, electrons and take a lot of abuse. It has able antioxidant capability. Radiation doesn’t hurt it much.

This is true especially because the top layers of the skin are a primary area for lymphatic fluid. This author suggests that one reason that lymphatic fluid exists close to the surface is to capture radiation.

Beta particles which enter the lymph become available to neutralize free radicals within the lymphatic system. Some references suggest that 80% of the body’s antioxidant capacity resides in the lymphatic system.

It sure would make sense if the dermal lymph acted as a receiver and a conduit to gather and utilize both radiation and radiation byproducts for useful purpose.

This is apparently what happens with Beta Radiation. When beta particles enter the skin, they are absorbed by the lymph. Once inside they become anti-oxidative agents used by the body to quench free radicals.

Do low-energy beta particles really Ionize?

Think for a moment about a beta particle.

The popular notion of radiation is that a particle flies in from nowhere and knocks things apart. The dissociated aftermath leaves at least two free radical molecules desperately in search of a mate.

This model doesn't seem appropriate for low energy Beta radiation. Assume for a moment that a low energy electron smacks a molecule. The electron which did the smacking is in exactly the right place to replace the one that got smacked loose.

The probability that the molecule is going to break apart goes down considerably.

The Soft Radical Concept

Second consider the notion that the material it smacked was mostly water. At the appropriate energy, it would probably create a single oxygen, and two hydrogen. The hydrogen would combine into H_2, and the oxygen would be left. Under non-beta catalyzed circumstances, this is called the superoxide radical, and is highly damaging.

What if that "superoxide" radical is mates with the spare electron? It seems reasonable that our electron bubble is going to loiter around the superoxide radical, but not join. The pair would create what the author calls creates a soft radical.

Spare oxygen hanging around is quite useful, especially in the neighborhood where bugs hang out.

To O or to O2

The energy required to split water, or split an O_2 molecule is pretty high. If the body were able to able to use a soft radical it would avoid two challenges:

1. No need to split the o2
2. No extra oxygen floating around to cause extra damage.

The body uses superoxide radicals to kill bugs. Wouldn't it be handy if the beta particles were creating soft radicals, which found there way to pathogens.

Wouldn't it also be handy if the body knew how to strip the loose electron near the pathogen.

The author suggests that soft-radical transportation is a candidate for the anti-pathogenic effects of low-energy beta particles.

Generally speaking O_2 isn't particularly useful because it isn't very reactive. First it has to be split apart, and then both oxygen molecules need to be put to use.

It seems reasonable that the body does this as part of the inflammatory process, but the spare oxygen, drives oxidative stress, peroxidation and so forth in infected tissue.

The soft radical provides an alternative mechanism for the body to neutralize pathogens without creating the collateral damage of splitting an O_2; one oxygen instead of two.

What if the body moves that moderated oxygen toward a free radical generator or pathogen, and then grabs the neutralizing electron making it a superoxide radical again?

This seems like a potential way for the body to exploit a beta particle as an anti-pathogenic tool.

What if that particle is an electron? What if the electron is able to at least partially satisfy the needs created the disjoint molecule?

What if that particle hit a water molecule and knocked an oxygen free, and what if the oxygen was a gentle radical? What if the

It seems like the no disso

Spare electrons are antioxidants

The Radiation Concept

What is hormesis?

Low level exposure to agent destructive at high levels

Same as homeopathy

Tickles the response mechanism with sub-acute

Improves toxic response

The Radiation Hormesis Concept

Petkau Effect

Petkau observed that free radicals in low dosages could inflict lethal damage to a cell membrane structure in the absence of adequate antioxidants.

His research to overburden the repair mechanism. This free radical load challenges the host

Cell Membrane Damage

Bilayer membrane destroyed by a superoxide radical

Established antioxidant / Radiation relationship

Membranes with NO Superoxide dismutase

Superoxide triggers oxidative cascade & tears membrane apart

Antioxidants are key

Radicals grab electrons

Extra electrons inhibit free radical cascade

Low level radiation

Observed that much lower levels of radiation are harmful

Low levels of ionization were often more damaging than high

Research Areas

Isotope Toxicity – Sr for CA

Mineral substitution – elements in periodic chart substitute for each other.

Tissue is different from dermal

Tissue exposure vs skin

Damage antioxidant cope

Petkau and Hormesis

Petkau showed lethal damage in synthetic membranes

Levels 50-100x higher than Hormesis Research – 100x the ionization potential

Isotope Consumption

Tissues affected

Illustrated that membrane is where the rubber hits the road with cell physiology

Illustrated the defensive/protective relationship between antioxidant and cell membranes

Strongly supports the relationship between

Antioxidant Electrons

Free radical neutralization

Anti-inflammatory

Pain Relief

Healing Catalyst

Fungal inhibitory

Neutralizes FR toxins

That inhibit immunity

Yeast Inhibitory

Zeta Potential

Extra electrons - circulatory / anti agglutination

FR Quench phenomenon

The K-40 phenomenon

Biological radiation is well known

Used to measure systemic potassium

K-40 is a beta emitter

Correlates cell membrane integrity

Evidence

Water retains beta

Breaks the Faraday rules regarding charged particles

Emission fixed at 60 uR/hr

Independent from absorption

Where do those electrons go?

Just how much AO can water store

Does it work the same in the body?

Are solute electrons a reserve AO?

Is electron emission an indicator of AO reserve?

Nuclear Biology

Fort Hill Fungus & Thorium Acetate

Nucleotide moderation

Nucleo-genesis

Louis Kervran

Superconductivity