

The Chemistry of MMS

By Roger Blake

Miracle Mineral Solution (MMS), is reportedly helping to restore human health from many of our most serious diseases – including cancer, diabetes, autism, malaria, AIDS, hepatitis, herpes, multiple sclerosis, and many others. The thousands of testimonies from around the world speak for themselves, but is there any science supporting how MMS works?

When it is top condition, the human immune system is capable of preventing illness and restoring health; this could be referred to as a “miracle” but it should be our “normal” condition. Unfortunately, it’s often not our normal condition.

MMS parallels the function of our own immune system. It works in tandem with it, helping it do what it does naturally when it’s fully functional.

There are two main products in use, MMS(1) and MMS2.

MMS(1)

MMS(1) is the original product developed by Jim Humble, an inventor, to restore health in the human body. While working in Guyana in 1996, Jim discovered that MMS (1) solution resulted in recovery from malaria in a matter of hours.

The MMS protocol consists of activating a solution of sodium chlorite dissolved in water (MMS solution) by adding a dilute acidic solution such as 5% hydrochloric acid. This results in the formation of a solution that comprises yellow chlorine dioxide gas dissolved in water together with some salt (NaCl). Chlorine dioxide is an alternative oxidiser that the body can use to replicate the natural way our immune system deals with disease.

Since his discovery that MMS could be used to treat malaria, Jim Humble has pioneered the use of chlorine dioxide in the human body for the purpose of overcoming many diseases. However, he was not the first to realise its health benefits in the human body. As seen in Wikipedia; “Stabilized chlorine dioxide can also be used in an oral rinse to treat oral disease and malodor.” http://en.wikipedia.org/wiki/Chlorine_dioxide

Jim named the product “Miracle Mineral Solution” – in accordance with the results he was observing for a wide range of diseases. However, even though it may seem like a “miracle”, it is just plain chemistry.

It may surprise you that there is one point concerning chlorine dioxide that all peo-

ple agree on. All government agencies that are involved – universities, scientists and even MMS critics – all admit to the fact that chlorine dioxide is one of the most effective killers of disease pathogens known to man. No group argues against the point that chlorine dioxide kills at least 95% of all disease pathogens on contact. It is simply a known scientific fact.

Here is just one of many FDA regulations authorizing the use of chlorine dioxide to kill pathogens, in this case on FOOD:

<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfCFR/CFR-Search.cfm?fr=173.300> (Food Contact Substance CAS Reg. No. 10049-04-4).

The disease-killing properties of chlorine dioxide

Chlorine dioxide was discovered in 1814 by Sir Humphrey Davy; and since that time its pathogen-killing properties have led it to be used in drinking water, on food preparation areas, and even on living and harvested produce. It is little wonder that it should also be discovered to have the same benefits in the human body! But is it safe?

- Chlorine dioxide has been proven safe for human consumption in clinical trials: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1569027/pdf/envh-per00463-0059.pdf> “...the relative safety of oral ingestion of chlorine dioxide... was demonstrated”. (In one 6-month phase of the tests, the dosages were the same as MMS doses).

Chlorine Dioxide is not Chlorine, just as Carbon Dioxide (e.g. breath) is not Carbon (e.g. coal).

Chlorine dioxide is very different from Chlorine, and destroys pathogens by oxidation, not chlorination. It does not harm healthy cells and beneficial bacteria in the body as explained below.

Examples of other common alternative oxidisers that have been used in the body are *hydrogen peroxide* and *ozone*.

The oxidation potential of various oxidisers is measured in volts. For example, oxygen has an oxidation potential of 1.3 volts. Hydrogen peroxide is 1.8 volts. Ozone is 2.07 volts. Chlorine dioxide is only 0.95 volts.

This means that any healthy cells and beneficial bacteria that are not harmed by oxygen, will definitely not be harmed by chlorine dioxide, because chlorine dioxide has a lower oxidation potential than oxygen. This renders chlorine dioxide safer than both hydrogen peroxide and ozone; even though these two examples have also been used with degrees of success in the body.

“Chlorine Dioxide is not Chlorine, just as Carbon Dioxide (e.g. breath) is not Carbon

Chlorine dioxide is a chemical compound that consists of one chlorine ion bound to two ions of oxygen. Using the MMS protocol, you will produce chlorine dioxide in the range of 1ppm.

The MMS solution is 28% (by weight) sodium chlorite in distilled water. You can produce chlorine dioxide when an “activator” of 5% hydrochloric acid is added. “Applications” of chlorine dioxide solution range from 1/4 of a drop to a maximum of 12 drops.

After adding the activator, the chemical reaction that turns sodium chlorite into chlorine dioxide takes only 20 seconds when using the 5% hydrochloric acid.

When chlorine dioxide contacts a harmful pathogen, it instantly rips up to five electrons from it, harmless to us, but terminal for pathogens.

The pathogen – an electron donor – is rendered harmless due to the involuntary surrendering of its electrons to the chlorine dioxide – an electron acceptor.

A deeper look into chlorine dioxide:

Chlorine dioxide is very different from elementary chlorine, both in its chemical structure and in its behavior. One of the most important qualities of chlorine dioxide is its high water solubility, especially in cold water. Chlorine dioxide does not hydrolyze when it enters water; it remains a dissolved gas in solution. Chlorine dioxide is approximately ten times more soluble in water than chlorine.

It is an oxidizer and it effectively kills pathogenic microorganisms such as fungi, bacteria and viruses. Chlorine dioxide can also be used against anthrax, because it is effective against spore-forming bacteria.

As an oxidizer chlorine dioxide is very selective. It has this ability due to unique one-electron exchange mechanisms. Chlorine dioxide attacks the electron-rich centers of organic molecules. One electron is transferred and chlorine dioxide is reduced to chlorite (ClO_2^-).

In comparison to chlorine and ozone, less chlorine dioxide is required to obtain an active residual disinfectant. Chlorine dioxide can also be used when a large amount of organic matter is present.

The oxidation strength describes how strongly an oxidizer reacts with an oxidizable substance. Ozone has the highest oxidation strength and reacts with every substance that can be oxidized. Chlorine dioxide is weak, it has a lower potential than hypochlorous acid or hypobromous acid.

The oxidation capacity shows how many electrons are transferred at an oxidation or reduction reaction. The chlorine atom in chlorine dioxide has an oxidation number of +4. For this reason chlorine dioxide accepts 5 electrons when it is reduced to chloride.

The following comparisons show what happens when chlorine dioxide reacts:

First, chlorine dioxide takes up an electron and reduces to chlorite (ClO_2^-)

The chlorite ion gains four more electrons and becomes a chloride ion (Cl^-)

During the process by which chlorine dioxide becomes chloride, the chlorine portion of atom does not take part in the reactions, until stable chloride is formed. This explains why no chlorinated substances are formed when *chlorine*

dioxide is used as an oxidising agent. By contrast, when *chlorine* reacts it does not only accept electrons; it also takes part in addition and substitution reactions. During these reactions, one or more chlorine atoms are added to the foreign substance.

Does chlorine dioxide produce byproducts?

Pure chlorine dioxide gas that is applied to water produces fewer disinfection byproducts than oxidators, such as chlorine. Contrary to ozone (O_3), pure chlorine dioxide does not produce bromide (Br^-) ions into bromate ions (BrO_3^-), unless it undergoes photolysis. Additionally chlorine dioxide does not produce large amounts of aldehydes, ketons, keton acids or other disinfection byproducts that originate from the ozonisation of organic substances.

How does chlorine dioxide disinfect?

(Source): <http://www.lenntech.com/processes/disinfection/chemical/disinfectants-chlorine-dioxide.htm#ixzz3NKeErCEH>

Chlorine dioxide kills bacteria by attacking their critical cell physiological functions, including the disruption of protein synthesis. It also alters the permeability of the outer cell membrane. Chlorine dioxide diffuses through the protective layer of the cell and inactivates pathogens from the inside out. It prohibits both anaerobic and aerobic bacteria from developing resistance and eliminates the need to alternate biocide treatments.

MMS(2)

MMS(2) works by providing the body with hypochlorous acid (HOCl).

Hypochlorous acid is an acid that the human immune system actually makes itself and uses to kill pathogens of all kinds throughout the body, and many other things that sometimes need to be destroyed. This acid, produced by neutrophils, a class of white blood cell, may be one of the most important acids that the body makes to maintain health.

We think it qualifies being considered "natural", because it is an endogenous naturally produced acid made by the body's immune system.

The fact is, hypochlorous acid will kill

most pathogens in the body – even the powerful malaria parasite, if enough of the acid is present.

However, for whatever reason, the human body does not always generate enough hypochlorous acid to kill all the disease-causing organisms that might enter the body. In today's environment, due to toxins purposely being added to our food and water supplies, plus toxins that we unwittingly apply to our skin, and even contaminants that we breathe, our immune systems are often overworked and compromised.

The fact that hypochlorous acid kills disease pathogens was known 80 years ago. One would think that medical science would have at least tried giving the body a little bit more hypochlorous acid when germs or disease threatened, but it appears that they didn't.

Jim Humble, founder of the Genesis II Church of Health and Healing was confronted with this question several years ago. He discovered that there was a simple way to provide the body with more of hypochlorous acid than what it naturally makes, at times when the immune system may be run down.

Hypochlorous acid kills pathogens instantly by blowing a hole in their cell membrane. It's not like medical antibiotics, which can take from hours to weeks to penetrate the membrane of a pathogen, slowly destroying the nucleus or something in the nucleus – if the pathogen hasn't developed resistance.

Pathogens that cause diseases of all kinds cannot develop a resistance to hypochlorous acid making it a potentially very useful antimicrobial treatment.

There happens to be a very simple chemical reaction that creates hypochlorous acid and that is the addition of calcium hypochlorite to water.

Having already developed protocols for the use of MMS(1) in the body; Jim developed a product to increase hypochlorous acid levels and called this product MMS2.

MMS2 is a capsule-based product containing calcium hypochlorite or $\text{Ca}(\text{ClO})_2$. When it comes into contact with water, it immediately becomes hypochlorous acid, HOCl.

If a MMS2 capsule is consumed with a glass of water, it will produce hypochlorous acid in the stomach.

Jim's initial research with this product involved patients with prostate cancer; they were clear of their cancer after only three

weeks on this product. Since then, many other unexpected benefits are being reported from people who use MMS(2); you can read more details about MMS(2) here: <http://miraclemineral.co.nz/index.cfm?fact=mms2>

How does hypochlorous acid work?

Hypochlorous acid is the main acid used by the immune system to destroy pathogens and other microorganisms unwanted in the body. The mechanism is somewhat different than MMS(1) (chlorine dioxide). MMS(1) oxidises the pathogens directly, pulling away the electrons that hold their molecules together. MMS(2) (hypochlorous acid) acts in a different manner. It destroys microorganisms by carrying oxygen to the microorganism and then the oxygen destroys the organism. Of course, once the hypochlorous acid delivers the oxygen, the destruction is the same. The oxygen pulls off the electrons that hold the pathogen's cell membrane together.

This is the basic idea of the chemical process:

1. The oxygen released by the hypochlorous acid is known as nascent oxygen (O). That means it is extra active or unstable.
2. The formula of hypochlorous acid is HOCl. As the HOCl gets near a pathogen, it pulls off a single electron. This electron comes over to the HOCl and destroys it, releasing the oxygen (O), the hydrogen (H), and the chlorine (Cl). The oxygen then oxidises the pathogen. The hydrogen just becomes part of the body's water, and the chlorine becomes a chloride ion. Nature picked this acid for use by the immune system to travel throughout the body and into areas where the oxygen obtained from breathing does not reach.
3. The hypochlorous acid acts as a carrier. It carries the oxygen to places it cannot get to when traveling as oxygen. Traveling in the hypochlorous acid, it is kept separate from various body parts that it could oxidise, and when the hypochlorous acid reaches a hidden pathogen deep in a tissue, it releases the oxygen as mentioned in #2 above, in a nascent condition, to do its job. It is an important mechanism that no pathogen has ever developed a resistance to.

Hypochlorous acid and table salt

People worry about being poisoned by MMS(2) because it smells and tastes "bad". Actually, the poison index LD50 for MMS(2), (calcium hypochlorite) is 850 mg/kg. That's the amount that it takes to kill 50% of the rats being tested; the others live through the test.

So if you were a human under test and you weighed 80 kg (176 pounds), one would multiply 850 by 80 kg to get the equivalent number of milligrams. That is 68 grams for 50% chance of an 80 kilo human's lethal dose – assuming that the toxicity for humans is the same as for rats.

As a comparison, the table salt (NaCl) LD50 in rats is 3,000 mg/kilo. Based on the rat LD50, if you were to consume a ridiculous amount of salt (for example 200 grammes) this could be fatal (and in fact lower doses could potentially cause life-threatening problems by causing a relative deficiency of potassium and affecting your heart or overburdening your kidneys.) But a little salt shaken on your dinner tonight or a single size zero capsule of calcium hypochlorite would be about the same amount, and neither should give you a problem. (See <http://classes.naturalhealingretreats.com/mms-training/mms-2/>)

Which product?

Both MMS(1) and MMS2 appear to give similar results on a broad range of diseases. The general guideline is to start with MMS(1) due to the ease of regulating dosage rates, and the broader range of application methods that can be adopted compared to MMS2. For stubborn diseases, it is beneficial to use both products together.

Side effects

The known side effects of both products are nausea, vomiting and diarrhoea. If the guidelines are followed, these side effects are not common. They are usually experienced from taking **too much product** too soon. This is due to killing off pathogens too quickly, which can overload the system with dead pathogens and other diseased material which the body must process and eliminate. It is almost like a toxic overload, and if your organs can't process the dead material at the rate you are killing it, it will come out an alternative way. Following the guidelines established as a result of years of field trials with the products, will usually provide side-effect free health restoration. (**Ed note: MMS1 and MMS2 should naturally be kept out of reach of children due to the risk of toxicity if taken in overdose. Due to the potentially serious side effects from taking the wrong dose of any oxidising agent, including the MMS products, it is strongly suggested that anyone interested in using them seek professional advice from a practitioner who is experienced with these products. Jim Humble's books provide protocols for using MMS based on his experience treating people with MMS as a lay practitioner. His most recent book with up-to-date recommendations is NaCLO2: The Master Mineral Solution of the Third Millennium.**)

Media Propaganda and Lies

"All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident."

MMS is currently in the stage of being violently opposed. However, if MMS has tested safe for human consumption and is universally accepted to kill pathogens, then why are it and Jim Humble being attacked in mainstream media?

The pharmaceutical industry knows that if MMS is acknowledged for what it is capable of doing, up to 90% of pharmaceutical drugs could become obsolete. Mainstream media know where their bread is buttered and happily go along with the charade that MMS is "dangerous." However, mainstream media have been caught red-handed, not only distorting facts, but also publishing outright lies. A compilation of their deceitful propaganda in relation to MMS can be viewed here: <http://miraclemineral.co.nz/index.cfm?fact=doubleblind>

Another media cover up is the fact that chlorine dioxide solution had undergone official trials by the Red Cross in Uganda, and overcame malaria in less than 24 hours. Due to pressure by Big Pharma – who not only donate to the Red Cross, but also profit from ineffective malaria drugs – the Red Cross later denied that they had even conducted the trial.

A documentary of this trial that supposedly "never happened" can be viewed here: <https://m.youtube.com/watch?v=ftu6C9Fahk>

The media cover-up of this information is contributing to the un-necessary death of over 1.2 million people per year due to malaria. We sent a link of this documentary to about 20 different Red Cross branches here in NZ, asking for their view on this cover-up. We never got a single reply.

To learn more about the full range of MMS products and their uses, you can read more about it here: <https://miraclemineral.co.nz/>

Read more about the Genesis II church here: <http://miraclemineral.co.nz/index.cfm?fact=GenesisII>

About the Author:

Roger Blake is a mechanical engineer, (and currently a tourist attraction operator), who developed a deep interest in natural health since learning about MMS six years ago. After his own "miraculous" experiences with the product, he began distributing MMS products in New Zealand and recently organized a training seminar with Jim Humble here in NZ.