

The Antiviral Properties of Dr. Hamel's MCT Super Blend

With everything that's currently been happening with the coronavirus scare, as you might imagine, I've been getting a lot of questions about how Dr. Hamel's MCT Super Blend might help to protect one against both the coronavirus and viruses in general... Although I can find no research on the influence of medium chain triglycerides and coronaviruses, there is A LOT of research about how medium chain triglycerides not only physically destroy enveloped viruses but they also interfere with the mechanism by which these enveloped viruses attach themselves to one's healthy cells, thereby hijacking them and turning them into virus factories!

Before I proceed, I would like to make it absolutely clear that I am in no way saying that supplementing with a product such as Dr. Hamel's MCT Super Blend will make it so that a person is unable to contract an infection from an enveloped virus such as the coronavirus, however, when a person supplements with Dr. Hamel's MCT Super Blend they will be supplying their body with very unique compounds that are well suited to address the threat of enveloped viruses. With this in mind, let us proceed!

Breast milk! Everyone knows that babies who grow up drinking breast milk are healthier than babies who are fed commercial formula. There are numerous studies that explain how the fatty acids in a mother's breast milk are important for not only supplying units of cellular energy that will power the baby's body and brain, but also are used for the purpose of protecting the baby against the threat posed by a whole host of malicious microorganisms, viruses included. In terms of good information about breast feeding, Weston A. Price is a tremendous resource. One of the articles that can be found on their site goes into a lot of depth about the percentage of medium chain triglycerides such as lauric and capric acid that are found in mother's breast milk from various parts of the world...

<https://www.westonaprice.org/health-topics/childrens-health/fat-and-cholesterol-in-human-milk/>

"The average amount of antimicrobial fatty acids, particularly lauric acid and capric acid, found in the milk of lactating mothers around the world is not unusually as high as that reported in Nigeria, but amounts as low as 2 percent and as high as 20 percent have been reported. French mothers average 6 percent with ranges of 2-12 percent. Japanese mothers are reported to produce up to 9 percent lauric and capric acids."

For a baby, the breast milk is going to be sole food source, and looking at the Nigerian example, up to 20% of all of the fat that is found in that breast milk will be comprised of lauric and capric acids! MCT Nutri-Oil Supreme is approximately 20% lauric acid and 27% capric acid, so looking at this, almost half of the oil, 47%, is a mixture of these two fats! As an adult, we don't have the ability to drink a diet that is exclusively made up of human breast milk, but there isn't anything that can stop us from adding Dr. Hamel's MCT Super Blend to our food or using it throughout the day as a nutritional supplement in order to supply these important fatty acids into our adult diet!

With this in mind, let's take a look at some of the peer reviewed research that can be found at National Institutes of Health so that we can learn a little more about the kinds of antiviral influence that medium chain triglycerides will exert...

"Short chain and long chain saturated fatty acids had no or a very small antiviral effect at the highest concentrations tested. Medium chain saturated and long chain unsaturated fatty acids, on the other hand, were all highly active against the enveloped viruses... Monoglycerides of these fatty acids were also highly antiviral, in some instances at a concentration 10 times lower than that of the free fatty acids"

<https://www.ncbi.nlm.nih.gov/pubmed/3032090>

OK, so the monoglycerides are highly antiviral, in some instances, at a concentration 10 times lower than that of the free fatty acids... so what's a monoglyceride? Good question! Without getting too deep into the biochemistry of how our body metabolizes fats, the main thing you need to understand is that when we eat long chain unsaturated fats, such as Omega-3, the liver must make bile and cholesterol in order to turn those long chain triglycerides into chylomicrons, and then these are processed through the lymph system and then spit out into the circulatory system to be used as energy or stored as fat... if you notice, there isn't anything that has to do with a monoglyceride in this process.... Medium chain fats, on the other hand, are so small they can't physically bond with bile and cholesterol and they don't induce gallbladder contractions. Instead of forming chylomicrons, the medium chain fats are absorbed directly into the circulatory system from the small intestines where they travel to the liver in order to be metabolized.

The first thing the liver does is pop two of the medium chain fatty acids off of the glycerol backbone of the triglycerides and it turns those free fatty acids into alpha-keto acids, which is the highest quality source of cellular energy that exists. The byproduct of this process is the monoglyceride. When your liver metabolizes lauric acid triglycerides, it turns it into monolaurin. When your liver metabolizes capric acid triglycerides, it turns it into monocaprin. These compounds are tremendously more active against viruses than the medium chain triglycerides were that you consumed when you consumed the Dr. Hamel's MCT Super Blend!

“Medium chain saturated and long chain unsaturated fatty acids inactivated visna virus and other enveloped viruses causing more than a 3000 fold to 10,000 fold reduction in virus titer..... Antiviral fatty acids were found to affect the viral envelope, causing leakage and, at higher concentrations, a complete disintegration of the envelope and the viral particles. Lipids commonly found in natural products could possibly be used as antiviral agents against enveloped viruses”

<https://www.ncbi.nlm.nih.gov/pubmed/8030974>

Here is a study that is talking about the monoglyceride of lauric acid, which is called monolaurin...

“Monolaurin has been widely researched for its antiviral, antibacterial, and antimicrobial properties, as it can break down and destroy the lipid layer of enveloped viruses where many pharmaceuticals fail. Fatty acids and monoglycerides produce their killing/inactivating effects by several mechanisms. An early postulated mechanism was the perturbing of the plasma membrane lipid bilayer. The antiviral action attributed to monolaurin is that of fluidizing the structure in the envelope of the virus, causing the disintegration of the microbial membrane”

<https://drugs.ncats.io/drug/Y98611C087>

In addition to physically dissolving their lipid bilayer, the medium chain fats also inhibit a thing called M protein. I have been studying medium chain triglycerides for a very long time and I know a lot about them, but I have not been studying viruses for very long at all, so I am completely ignorant about how this M protein specifically works but according to research, it does, and when it does it makes it so that the virus can not stick to the host cells. If a virus can't stick to a host cell it can't turn the cell into a virus factory, and therefore it can not replicate itself....

“By cell fractionation and Western blot analysis the amount of viral M protein located in the plasma membrane was found to be markedly reduced after treatment with C12 (lauric acid), whereas in the cytoplasm the quantity of M protein was similar to that in untreated cells. C12 did not influence M protein synthesis, but prevented the binding of M protein to the host cell membrane, where the protein plays an essential role in virus assembly. Thus, treatment of vesicular stomatitis virus-infected cells with C12 resulted in inhibition of virus release”

<https://www.ncbi.nlm.nih.gov/pubmed/8113756>

...here is a study that looks at this mechanism, but instead of vesicular stomatitis virus, it is looking at the replication of arenavirus.

“A direct correlation between the inhibition of JUNV production and the stimulation of triacylglycerol cell content was demonstrated, and both lauric acid induced effects were dependent on the continued presence of the fatty acid. Thus, the decreased insertion of viral glycoproteins into the plasma membrane, apparently due to the increased incorporation of triacylglycerols, seems to cause an inhibition of JUNV maturation and release.”

<https://www.ncbi.nlm.nih.gov/pubmed/11402863>

So far we have seen that in the presence of lauric acid the individual viruses become compromised because of a loss of structural integrity in the lipid bilayer and also the lauric acid incorporates into the plasma membrane so that the M protein does not function properly, which in turn prevents the virus from completing its cycle of reproduction. This is neat stuff, but what about the capric acid? Let's take a look!

“In this study virucidal activities of fatty acids, monoglycerides and fatty alcohols were tested against respiratory syncytial virus and human parainfluenza virus type 2 at different concentrations, times, and pH levels. The most active compounds were mixed with milk products and fruit juices and the mixtures tested for virucidal effects. The aim was to determine which compounds are the most active against these respiratory viruses and could possibly be used in pharmaceutical formulations or as additives to milk products or juice.

Several compounds caused a significant inactivation of virus, and there was generally a good agreement between the activities against respiratory syncytial virus and parainfluenza virus..... The most active compound tested was 1-monoglyceride of capric acid, monocaprin, which also showed activity against influenza A virus and significant virucidal activities after addition to milk products and fruit juices, even at a concentration as low as 0.06 - 0.12%. The significant virucidal activities of fatty alcohols and lipids on respiratory syncytial virus and parainfluenza virus demonstrated in this in vitro study raise the question of the feasibility of using such compounds as ingredients in pharmaceutical dosage forms against respiratory infections caused by these viruses, and possibly other paramyxoviruses.”

<http://www.ncbi.nlm.nih.gov/pubmed/17891329>

The thing that really jumps out at me with this last study was 1) that monocaprin was by far the most active compound tested, and 2) that it was active in concentrations as low as 0.06%! To give you an idea of what that looks like, there are rocks called tectites, and they are formed when meteorites slam into the Earth and the impact generates so much heat that it actually melts the sand at the impact site. According to N.A.S.A., the average tectite has around 0.05% retained moisture. Sand melts at around 1,600F degrees and water boils at 212F degrees, so how there is any retained moisture in a tectite, I have no idea... but there is, and it's about the same quantity of monocaprin that the researchers were adding to the milk and juice and even at levels that low, it was still exerting an antiviral effect.

So, looking at the big picture here.... 27% of every Tablespoon of Dr. Hamel's MCT Super Blend that you eat will get turned into monocaprin by your liver. I don't know how much blood we have circulating in our body, but all of that monocaprin is going to be released into your circulatory system and if you keep on taking it, at a certain point you could probably get the levels of monocaprin in your blood to the 0.06% level, or higher! You could potentially turn your entire blood supply into a version of your body's own "milk or juice product" that the researchers were experimenting with in the previous study with those various enveloped respiratory viruses... It's definitely food for thought, anyways....

This last study is comparing lauric acid to monocaprin... Dr. Hamel's MCT Super Blend is 20% lauric acid and 27% capric acid, so when you are taking it, your liver will be making a nice amount of both monolaurin and monocaprin. This specific study is looking at developing a hydrogel that can be applied to the body in order to kill viruses.

"The main strategy was that the formulations would be fast acting, killing large numbers of viruses or bacteria on contact in a short time, preferably causing at least a 10,000 fold reduction in virus/bacteria titer in 1-5 minutes. Monocaprin, the 1-monoglyceride of capric acid, and lauric acid were found to be most active of all the lipids tested, causing a greater than 100,000 fold reduction in virus titer in 1 minute at concentration of 20nM. When tested at a concentration of 10nM for 1 minute, monocaprin was still fully active whereas lauric acid had no or negligible activity"

<https://www.ncbi.nlm.nih.gov/pubmed/10514348>

So the thing that really jumps out at me with this last study is why didn't the researchers compare monocaprin to monolaurin? Why did they compare monocaprin to lauric acid, which is the triglyceride form, not the 1-monoglyceride? It's hard to tell, but regardless, it's a very favorable finding for the monocaprin, nonetheless!

To summarize, am I telling you that Dr. Hamel's MCT Super Blend will prevent you from coming down with the coronavirus? No! What I am telling you is that about half of the fatty acid profile of the Dr. Hamel's MCT Super Blend will supply your body with lauric and capric acids, which your liver will metabolize into monolaurin and monocaprin and these antiviral 1-monoglycerides will circulate in your blood supply. If you buy MCT oil on the open market you are getting C:8 oil.. this is caprylic acid and although it is Great for antifungal applications there are no studies I could find that would suggest that monocaprylin is going to do anything to affect enveloped viruses... this is not to say that it does not, it is just saying that there haven't been any studies to suggest that it does! With Dr. Hamel's MCT Super Blend you are also getting 38% caprylic acid, which if you take a Tablespoon of Dr. Hamel's MCT Super Blend you will be getting a therapeutic dose for antifungal influence in the body.

If you choose to begin supplementing, it's best to start off slowly and to build your tolerance up a little bit at a time... Your liver is doing all of the work and there is only so much room in there so you will only be able to metabolize so much oil in a certain amount of time.... The best way to start is to add a small amount of the oil to your food. This will essentially time release the oil into your circulatory system because the fiber in the food will slow the rate at which the oil is absorbed into your body from the small intestines. (turn your food into the adult version of human breast milk) Slowly increase the amount of oil you are adding and at the point you feel comfortable taking the oil with meals, then try taking a small amount of oil with a beverage of some sort on an empty stomach. Be sure to swish the oil and beverage together in your mouth before swallowing so that you don't accidentally get any oil going down your trachea and causing you to cough. Again, if you find that you can comfortably take a small amount of the oil with a beverage, try increasing the dose. There is no level at which medium chain triglycerides will exert any sort of toxic influence in the body, but if you take too many too quickly and exceed your liver's capacity to metabolize all of them, you will experience some gastrointestinal upset. (feeling overly full and perhaps diarrhea)



Dr. Hamel's MCT Super Blend

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