Monolaurin and Bacterial Infections

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Monolaurin &

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Bacterial infections are relatively common. While the use of antibiotics has been an effective approach to the treatment of these infections for many years, modern-day healthcare systems are recognizing the increased prevalence of antibiotic resistance. One study [Ref #1] explains that the widespread resistance against antibiotic drugs is caused by the misuse and the overuse of antibiotics. Untreated bacterial infections, even in the case of antibiotic resistance, can lead to fatal complications.

infections can often be classified as primary or secondary, as well as either acute or chronic. A bacterial infection can also be localized, pyogenic or generalized. Infections can affect different parts of the body, including the lungs, the throat, the gums, stomach, and other areas.

Monolaurin Research in Supporting Immune Response

The human body is a host to billions of microorganisms, including bacteria. While many of these organisms are beneficial for the human body, some of them can be pathogenic, which means they cause harm. The infestation of pathogenic bacteria species in the human body can lead to the development of an infection. This calls for the scientists to start looking at alternative options for the treatment of bacterial infections. Many natural therapies have been suggested for the use against the presence of an infection caused by bacterium species in the human body, but only a few of these substances hold significant data behind their effectiveness. Monolaurin is a substance that has shown some interesting results in published studies.

Monolaurin is a naturally-derived medium chain fatty acid that can be extracted from glycerin and lauric acid [Ref #3]. Monolaurin can be synthesized from coconut and palm kernel oils. While this substance has been used in food and cosmetic production, some studies have begun to explore the use of monolaurin for other health uses.

species.

- **Straphylococcus Aureus** – This bacteria can cause skin infections, pneumonia, endocarditis, sepsis, meningitis, osteomyelitis, and more. The species have also been associated with toxic shock syndrome. One study [Ref #4] found the extracts of Monolaurin from coconut oil, combined with an agent known as lactic acid, may be effective in the inactivation of bacterial infections caused by the Staphylococcus aureus species. The study explains that Monolaurin resulted in a loss of membranes and cytoplasm in Staphylococcus aureus bacteria cells.

  > *The effects of lauric acid + lactic acid and monolaurin + lactic acid combinations were synergistic against both strains [of Staphylococcus aureus], exhibiting FBCIs of 0.25 and 0.63, respectively. In time-kill studies, lauric acid and monolaurin + lactic acid combinations added at their minimum inhibitory concentrations produced a bactericidal effect. The induction of stress in non-stressed cells was dependent on the type and concentration of antimicrobial. This resulted in a loss and change of the cytoplasm and membrane in cells of the bacterium." [Ref #4]*

- **Enteroccocus** – A group of bacterium species that often causes wound infections, as well as infections in soft tissue within the

significant when the effects of this extract were tested on Staphylococcus aureus, Enterobacter spp, Enterococcus spp, E. vulneris, and Streptococcus spp. All of the tests performed in these studies were performed on samples obtained from skin infections.

> *Monolaurin has statistically significant in vitro broad-spectrum sensitivity against Gram-positive and Gram-negative bacterial isolates from superficial skin infections. Most of the bacteria did not exhibit resistance to it. Monolaurin needs further pharmacokinetic studies to better understand its novel mechanisms of action, toxicity, drug interactions, and proper dosing in order to proceed to in vivo clinical studies. [Ref #5]*

- **Escherichia Coli** – Often referred to as E. coli, when pathogenic, these bacteria can cause infections to develop in the intestines, leading to gastrointestinal discomfort, pain and other accompanying symptoms. Studies have suggested monolaurin concentrations of 20mg/ml to be effective in reducing colony growth density in culture isolates from skin infections. [Ref #5]

> *"Sensitivity rates of Gram-positive Staphylococcus aureus, Streptococcus spp., and coagulase-negative Staphylococcus, Gram-negative E. vulneris, Enterobacter spp., and*

> *"The interaction with commonly used antimicrobials revealed that monolaurin and nisin acted synergistically against the test microorganisms, monolaurin in combination with sodium dehydroacetate or ethylenediaminetetraacetic acid was synergistic against* ***E. coli*** *and B. subtilis but not S. aureus, and monolaurin combined with calcium propionate or sodium lactate showed no synergistic effects against any test microorganism." [Ref #6]*

Conclusion

Infections caused by bacteria can cause life-threatening complications. Antibiotics are the conventional treatment option used to eliminate the presence of a bacterial infection, but with an increased prevalence of antibiotic resistance, the world is looking for alternative methods to help treat these infections. Monolaurin has the potential to assist with the fight against certain bacterium species, but additional research is needed to study the relationship, if any, between monolaurin and bacteria in the human body.

Lean more about the different bacterium studies and associated monolaurin research on the Research Page.

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