

ACEMANNAN

I. Acemannan - What is it?

- Nature's most powerful immune-optimizing molecule.
- Acemannan is a polysaccharide that naturally occurs in the gel of the aloe vera plant.
- Approximately 95% of the total saccharides in Acemannan are mannose, which is responsible for its unique immune-optimizing effect on the body.
- Human breastmilk is the only other place in nature that you find high mannose-containing polysaccharides that have such a dynamic impact on the immune system.
- The Acemannan molecules are naturally broken down within 24 to 48 hours from the time the aloe leaf is harvested. If Acemannan is not stabilized within that time frame, it loses its ability to influence the immune system.
- An estimated 99% of all aloe products sold do not contain stabilized Acemannan.
- The Acemannan polysaccharides in the aloe gel, naturally occur in the short chains, medium chains, and long chains with an average molecular weight of 2 million daltons (a unit of measurement for carbohydrate molecules).

II. How and when was Acemannan discovered and stabilized?

Acemannan was discovered in the fresh gel of the Aloe vera plant by a group of research pharmacologists who recognized the enormous potential that immune optimization would contribute to the healthcare industry. The Acemannan molecule was identified and a process was developed for stabilizing it for the very first time resulting in the granting of over 30 process and use patents from the U.S. patent office. One of the original use patents, issued in 1993 stated, "Acemannan has been shown to be effective in supporting the recovery from a number of conditions, where the principal mechanism of resolution requires intervention by the patients immune system." Knowing that every poor health condition requires immune system intervention for recovery, they were ecstatic with the broadness of that language. A pharmaceutical company, Carrington Labs, was founded to commercialize stabilized Acemannan. After over \$100 million of research, defining Acemannan mechanisms of action, safety, and efficacy, the company began to seek approval from the US regulatory agencies for product usage. The USDA approved Acemannan as an immunostimulant for the treatment of cancer in small animals and as a vaccine adjuvant for the prevention of cancer in poultry. It was then approved for use in topical wound care systems. In the early 1990s Carrington submitted a new drug application for Acemannan's use in human disease treatment with the FDA. Carrington believed that disapproval would help usher into healthcare an entirely new type of treatment modality for drug usage, instead of the old paradigm of one drug/one disease. Acemannan's proven effect on immune optimization, could crossover into almost every type of condition treatment, with the added benefit of being non-toxic. Optimizing the bodies normal healing processes would be revolutionary to the pharma industry with the potential of greatly diminishing the need for some existing pharmaceuticals. But all that optimism sank, when in 1993, the FDA rejected their new drug application on the basis that Acemannan research had not shown a drug effect. Drugs have to alter the physiology of a disease process. Acemannan does not alter normal physiology, it supports and enhances it. Carrington would fight this rejection for

another 20 years, but to no avail. Dr. Santiago, Rodriguez, President of Carrington aloe processing plant in Costa Rica, was instructed to develop a dietary supplement containing their patented Acemannan extract. In 1994 entrepreneur Sam Caster licensed the exclusive rights for global product distribution and in 1999 Sam was granted the global rights to this Acemannan supplement for nonprofit, children's health, distribution, that he facilitated through MannaRelief, a 501-C3 charity. In 2016 Sam began collaborating with Dr. Rodriguez, who had left Carrington to start his own Acemannan research and development company. Dr. Rodriguez had just created a new extraction process that increased the level of immune optimizing fractions of Acemannan 4 to 5 times higher, per gram, than the original patented products. Sam was again granted exclusive marketing rights to this new extract for MannaRelief and in 2020 Sam founded The Social Business Alovéa to make this new Acemannan extract available to the world.

III. Acemannan - How does it work?

- Acemannan is a polysaccharide that naturally occurs in the fresh gel of the aloe vera plant in a wide range of molecular weights that must be stabilized in order to generate their wide range of health benefits.
- There are three different distinct benefits that are size dependent.
 1. Small chains of Acemannan can be absorbed through the intestinal walls and into the bloodstream. This provides the body with a supply of mannose that is essential in proper cell to cell communication.
 2. Medium chains of Acemannan between 50,000 and 400,000 daltons, optimize the immune system and its function of modulating inflammatory responses through the cell surface activation of macrophages, the master regulators of defense, repair and regeneration. Activated macrophages help regulate both pro and anti-inflammatory responses in the body. Activated macrophages also help regulate T cell function, and a subset of pro and anti-inflammatory T cells called Th1 and Th2 cells. During the COVID pandemic, research showed that the greater the imbalance between Th1 and Th2 activity, the greater the risk was of hospitalization and death. An imbalance of Th1 and Th2 cells has also been identified in mild to severe brain diseased patients.
 3. Large chains of Acemannan above 400,000 daltons, feed the friendly bacteria in the gut. The bacteria then ferment's the Acemannan and it is then converted into short-chain fatty acids. SCFA's are the main source of nutrition for the cells that line the colon and create a protective barrier to the rest of the intestinal tract. A deficiency of SCFA's have been linked to diarrhea, inflammatory bowel diseases, leaky gut syndrome, and colon cancer.
- The cell surface activation of macrophages has been shown to enhance:
 1. Stem cell production by 300% - 400%
 2. The bodies production of Glutathione by 50%
 3. The immune systems ability to detect and destroy infected and diseased cells
 4. The modulation of the proper pro and anti-inflammatory responses in the body.

IV. What is the difference between “Immune Booster” and “Immune Optimization”?

- During the COVID-19 pandemic over 1000 dietary supplements were launched or promoted as “immune boosters”. But according to Micheal Starnbach, a professor of microbiology at Harvard medical school, “the very idea of boosting the immune system is flawed. If there were a wholesale boost to the immune system, it could trigger auto immunity and other problems,” because the immune system is a complex network of organs, tissues, proteins, and cells that are modulated back-and-forth between pro and anti-inflammatory responses to pathogens, trauma, and diseased and damaged cells. The key to an optimally functioning immune system is proper balance and function.
- Toxins, poor nutrition, stress, and poor gut health are the major disruptors to the immune system, which creates a higher susceptibility to poor health and disease.
- Nutritional products that claim to boost the new system fall into 2 primary categories.
 1. **Mega doses of synthetically made vitamins and/or minerals**

This comes from the idea that if the recommended amounts of vitamins can provide proper support to the immune system, then mega-doses should boost your immune system. Synthetically made chemical isolates are not in a form that the body was designed to utilize, so only a portion of these isolates gets converted in the body into a usable nutrition. The body must then eliminate the remainder. Excess water soluble isolates, including ascorbic acid (Vit C) and all the B vitamins, can be eliminated in the urine, but high levels of these unused water soluble isolates have been shown to cause digestive problems. Excess fat soluble vitamin isolates, including vitamins A, D, E, and K, get stored in fat tissues and the liver and can become toxic and inflammatory. A meta-analysis of 46% independent peer reviewed studies, published in the Journal of American Medical Association (JAMA), showed that in every study, the supplementation of higher than normal doses of fat soluble synthetic vitamins, increased the risk of disease and death by double digit margins.
 2. **Herbal Supplements**

These types of products typically cause pro-inflammatory activity in the body. That’s because herbs and some plants contain chemicals that trigger an inflammatory defense response. These supplements can be useful in helping to fight the early stages of infections, but can be detrimental to the immune system’s need to self regulate.
- Immune optimizing Acemannan does not stimulate a particular immune response, like an herb, it enhances the immune system’s overall regulatory functions through the cell surface activation of macrophages, the master regulators of defense and immune system modulation.

Most Commonly Asked Questions about Alovea and Acemannan

1. Do all aloe products contain Acemannan?

Only one percent of all aloe products sold actually show Acemannan on their Certificates of Analysis (COA).

2. Do Aloe Vera products contain a toxic substance?

The aloe leaf, which is used in the production of many whole leaf aloe vera juices, contains a yellow sap called Aloin. Aloin is stored in the pulp of the leaf itself and protects the leaf from infestation. Aloin is a strong laxative that can cause severe cramping, and is therefore considered toxic. The stabilization and extraction of Acemannan, which comes from the gel and not the pulp, contains no Aloin, which is disclosed in the extracts certificate of analysis.

3. Can I increase my intake of Acemannan, and is there any risk in doing that?

Yes, you can, and there is no risk. One to two capsules of Alovéa IMMUN is adequate for good immune support. If an individual is already health challenged, the immune system has become compromised and can benefit from a higher intake. There is a dose response with Acemannan, but every individual is different. Excess Acemannan beyond your immune system's need, will be utilized in the gut as prebiotic food for friendly, gut bacteria.

4. Why hasn't my doctor recommended Acemannan?

Acemannan is not a drug and is therefore not considered as a standard of care treatment. Doctors are required to only use standard of care therapies in the treatment of disease. However, a growing contingency of healthcare providers are beginning to use an integrative approach with their patients. Integrative medicine combines the best science-based allopathic, alternative, and nutritional therapies in order to achieve best patient outcomes.

5. Can I take IMMUN in conjunction with my medications?

We recommend that you consult your doctor about any type of intervention. Acemannan is a plant polysaccharide, is non toxic, and has not shown to negatively interact with drug therapies. Acemannan is a food ingredient.

6. Where is the Aloe used to make the IMMUN product grown and processed?

In the volcanic soil in Mexico. Aloe Vera grows best in a climate that does not freeze, has adequate rain fall and mineral rich soil.