LorAnd LABORATORIES™ *The Perfection of Aloe Vera Processing™*

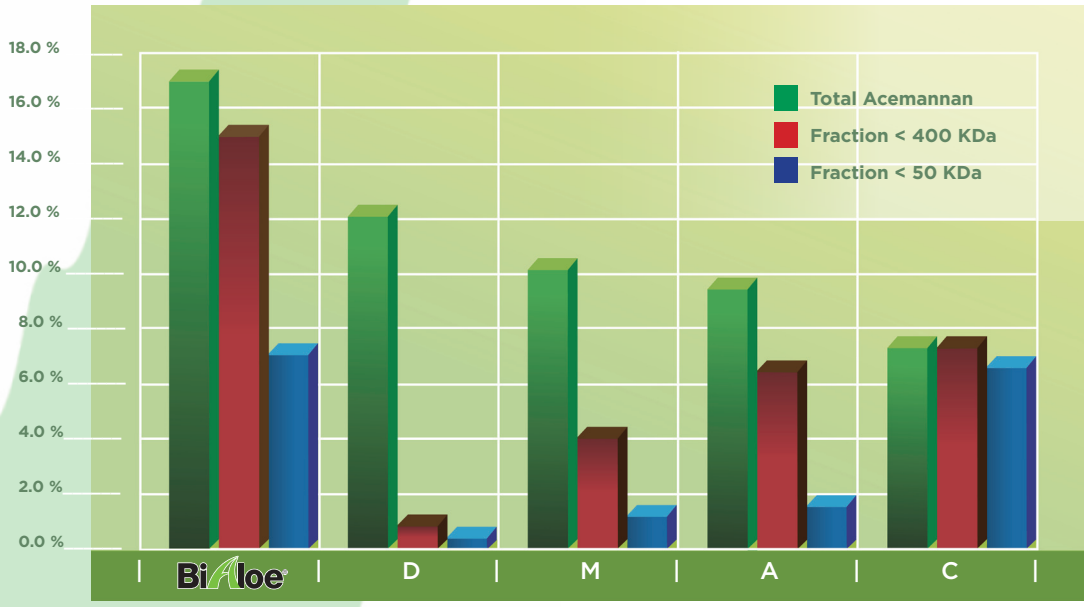
BiAloe® Fact Sheet

BiAloe® is the highest quality, most bio-available, most immunomodulatory Aloe vera L. made. Farming, harvesting, processing, and packaging affect Acemannan content and the bio-availability of the Acemannan.

This allows 160 mg of BiAloe® to be more efficacious than 3 to 10 times the amount of other commercially available Aloe vera.

BiAloe® is Organic Aloe vera Inner Leaf Freeze Dried Powder.

- **HIGHEST Total Acemannan – On Average 18%**
- **HIGHEST Immunomodulatory Acemannan < 400 KDa**
- **HIGHEST Bio-available Acemannan < 50 KDa**
- **FULL SPECTRUM of Molecular Weight Polysaccharides**
- **HIGHEST Polysaccharide Content – On Average 20%**



	BiAloe	D	M	A	C
Total Acemannan	17.4%	12.1%	10.2%	9.9%	7.4%
Fraction < 400 KDa	15.1%	1.2%	4.0%	6.3%	7.4%
Fraction < 50 KDa	7.1%	0.3%	1.7%	1.8%	6.4%

Samples A, B, C, D & M were put into Total Acemannan order. Only Sample "C" did not exhibit high molecular weight material. For each sample listed, the Total Acemannan was calculated using the "wet chemistry method" then checked against the SEC (size exclusion chromatography) for accuracy using total polysaccharides as the marker. The SEC data was also used to determine the Fraction < 50 KDa and the Fraction < 400 KDa. Both tests were performed by different independent laboratories using "blind" samples.

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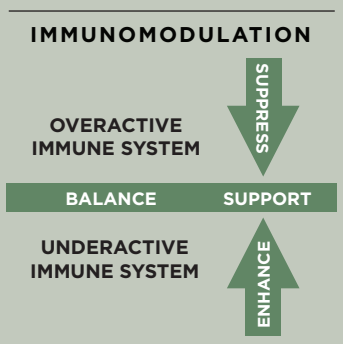
Aloe vera L. Facts

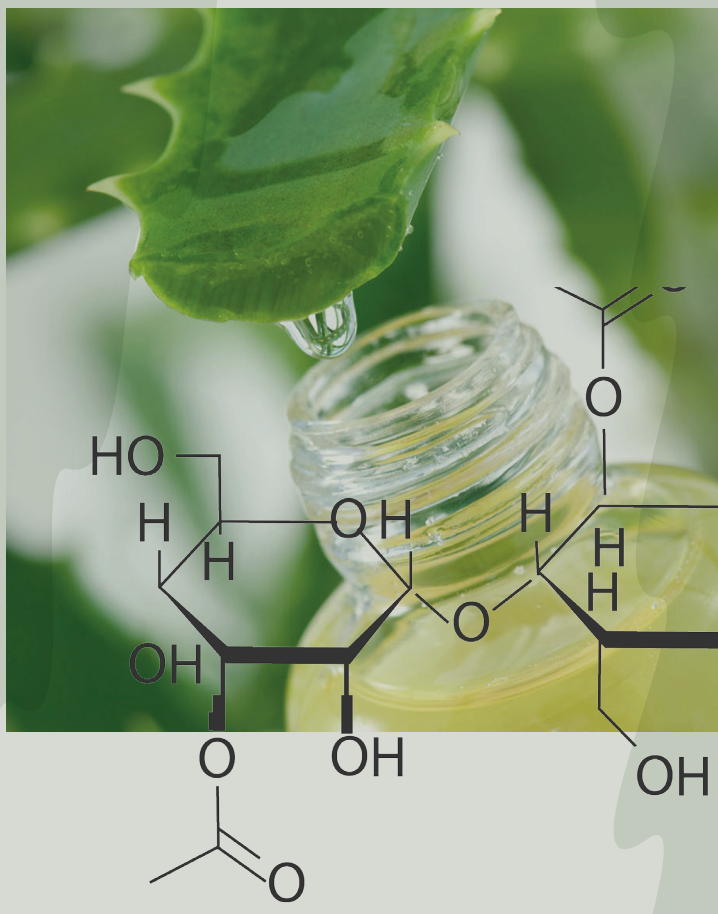
Acemannan. In a recent study thirty-two products representing most of the world's suppliers of aloe demonstrated a lack of consistency in Acemannan content. The amount and molecular weight of the Acemannan component varied widely. The molecular weight ranged from 10.59 to 1330.33 KDa.[1]

Bioavailability. Intestinal epithelial cells "IEC's" form a monolayer covering the inside surface of the intestinal tract. These cells facilitate absorption. The mechanisms used are paracellular transport for small molecular compounds, transcellular passive diffusion and intracellular transcytosis for high molecular compounds.[2] The villus epithelial of the small and large intestine readily absorb properly prepared substances with a molecular weight less than 50 KDa.

Immunomodulation. Smaller molecular weight molecules are usually preferred to higher molecular weight molecules due to bioavailability issues. Acemannan must be the correct size to be detected and engulfed by macrophages.



Aloe polysaccharides larger than 400 KDa have only marginal immunomodulatory activity, while polysaccharides smaller than 400 KDa have potent immunomodulatory activity.[3]



References:

1. Turner CE, Williamson DA, Stroud PA, Talley DJ. Evaluation and comparison of commercially available Aloe ver L. products using size exclusion chromatography with refractive index and multi-angle laser light scattering detection. International Immunopharmacology. 2004;4(14):1727-1737.

2. Shimizu M, et al. Interaction between Food Substances and the Intestinal Epithelium. Department of Applied Biological Chemistry, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Bunkyou-ku, Todyo 113-8657, Japan. 2010;Online Publication, February 7, 2010.

3. Im SA, Oh ST, Song S, et al. Identification of optimal molecular size of modified Aloe polysaccharides with maximum immunomodulatory activity. International Immunopharmacology. 2005;5(2):271-279.

LorAnd LABORATORIES™

17400 El Camino Real, Suite 700
Houston, TX 77058
p: 281.480.8811
f: 281.480.5590
e: info@lorandlabs.com
www.lorandlabs.com

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