

Nano Colloidal Silver and Aloe Vera

Scientific Information

Our unique and 100% natural formula is specifically designed to support a healthy immune system. This formula is unique in many ways. First, it combines patented nano colloidal silver with patented aloe vera. Second, the nano colloidal silver and the aloe vera are both processed in unique ways in order to maximize the natural benefit from each ingredient. Third, the concentrated liquid solution (60 ppm) can easily be taken, orally, by squeezing 3 droppers directly into the mouth throughout the day.

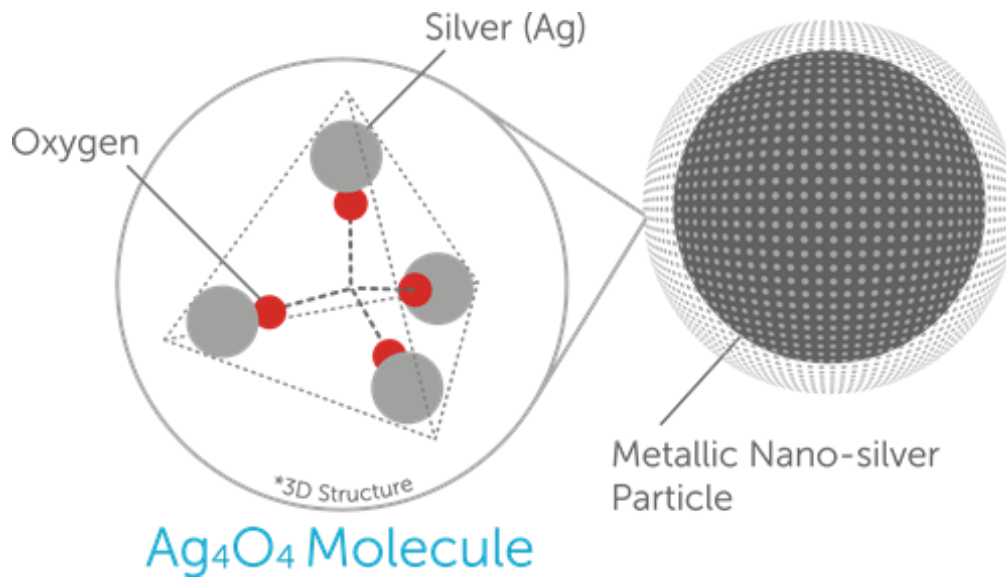
These healthy & natural ingredients are clinically proven, gluten free, non-GMO and safe for the entire family. Working together to support a healthy immune system, the nano-colloidal silver and the aloe vera also support digestive health - a real Win-Win!

Backed by hundreds of clinical and laboratory studies and dozens of safety studies, including 5 human ingestion studies, these ingredients are the best in the world!

Nano-Colloidal Silver

Why is our Nano-colloidal Silver unique? We have taken the old technology of colloidal silver and improved it by creating a safer and more effective natural product. Through a new and unique processing technology, patented under multiple patents, our advanced nano-silver solution has become the new standard to measure colloidal silver excellence.

Our unique ingredient has been put through rigorous studies and tests for efficacy and safety. In addition, this ingredient has been proven to be completely safe in human ingestion studies with no known side effects or negative reactions.



Researched in an FDA cleared, double blind human ingestion study, our nano colloidal silver particles leave the body within 24 hours.

Each nano particle can steal multiple electrons from a bacteria or bacterial biofilm. This results in a cascade of anti-bacterial benefit. Independent studies have shown this unique form of nano colloidal silver to be 10x more effective than products with up to 3,000ppm colloidal silver.

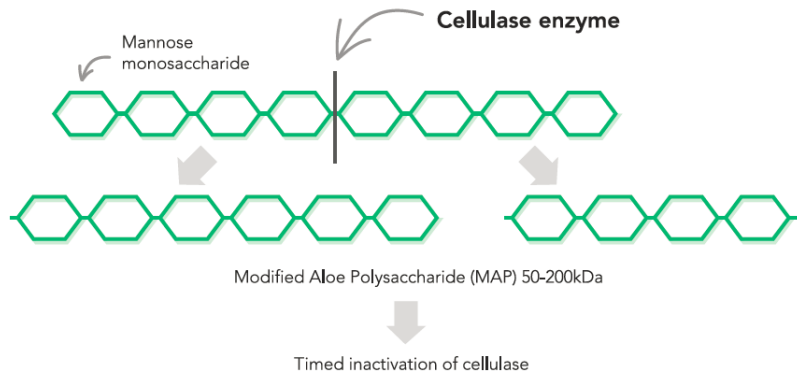
This unique nano colloidal silver is more Bioavailable: Continuous particle function while in the body. Particles are not neutralized in the body unlike other forms of silver.

Our nano colloidal silver is Probiotic friendly and does not inhibit the growth of good, healthy probiotics.

ALOE VERA

Aloe vera is known as “Nature’s Miracle Plant”. Iacel Aloe vera is carefully processed to retain the medium and high molecular weight acetylated polymannan polysaccharides, responsible for much of the biological activity found in Aloe vera.

Aloe vera polysaccharides have long been associated with the established health benefit of Aloe vera. These polysaccharides have been shown to support a healthy immune system and reduce recover time from inflammation. Our unique process results in medium and high molecular weight acetylated polymannan polysaccharides. This increases the active molecular weight fraction by as much as 300% and is the industry leading standard for excellence in Aloe vera purity and quality. Put simply, our Aloe Vera is the most effective Aloe vera ingredient in the world.



NANO COLLOIDAL SILVER CLINICAL STUDIES

Nanomedicine, 2013 June 28. Pii: S1549-9634 (13) 00335-3

In vivo human time-exposure study of orally dosed commercial silver nanoparticles.

Munger MA, Radwanski P, Hadlock GC, Stoddard G, Shaaban A, Falconer J, Grainger DW, Deering, CE.

ABSTRACT

Human biodistribution, bioprocessing and possible toxicity of nanoscale silver receive increasing health assessment. We prospectively studied commercial 10 ppm and 32 ppm nanoscale silver particle solutions in a single-blind, controlled, cross-over, intent-to-treat, design. Healthy subjects (n=60) underwent metabolic, blood counts, urinalysis, sputum induction, and chest and abdomen magnetic resonance imaging. Silver serum and urine content were determined. No clinically important changes in metabolic, hematologic, or urinalysis measures were identified. No morphological changes were detected in the lungs, heart or abdominal organs. No significant changes were noted to pulmonary reactive oxygen species or pro-inflammatory cytokine generation. In vivo oral exposure to these commercial nanoscale silver particle solutions does not prompt clinical important changes in human metabolic, hematologic, urine, physical findings or imaging morphology.

PROBIOTIC STUDY: VIRIDIS BioPharma, Ltd. - March 2004

1) Introduction and Purpose

Since the publication in Science Digest in March of 1978, in the article "Our Mightiest Germ Fighter", colloidal silver is emerging as a wonder of modern medicine. Colloidal Silver has been proven to kill hundreds of different types of organisms. This brings up the question as to the fate of colloidal silver in the digestive system as it travels through various zones of the digestive system.

All of us carry in our intestinal tracts a complex ecosystem of microbes. These bacteria are highly important to our health, providing us with protection against intestinal infection, supplying us with additional nutritional value from the food we eat, and contributing to the development of our immune system. In fact, repopulation of the gut microflora, after or during antibiotic therapy is accomplished thru OTC or prescription lactobacilli formulations.

2) To confirm the hypothesis that nano colloidal silver solutions are not toxic to Probiotics such as

- a. Lactobacillus & Bifidobacterium
- b. Multistrain Oral Preparations
 - i. Lactisyn (Manufactured by Laboratories Griffon)
Composition:
Lactobacillus lactis
Lactobacillus acidophilus
Streptococcus lactis
Streptococcus thermophilus
 - ii. Kyo-Dophilus (Manufactured by Wakunaga of America for GNC)
Composition:
Lactobacillus acidophilus
Bifidobacterium bifidum
Bifidobacterium longum

Name	Medium Used	Nano Colloidal Silver at 10 ppm	Nano Colloidal Silver at 22 ppm
Lactobacillus acidophilus	GYEA	No Inhibition	No Inhibition
Bifidobacterium longum	GYEA	No Inhibition	No Inhibition
Lactisyn	GYEA	No Inhibition	No Inhibition
Ky-Dophilus	GYEA	No Inhibition	No Inhibition

- GYEA: Glucose Yeast Extract Agar
- TA Agar Plates

3) Conclusion

Nano colloidal silver particles at both 10 ppm and 22 ppm concentrations have not demonstrated anti-probiotic activity. The results bring forth Nano colloidal silver as an “antibiotic of choice”, a natural antibiotic with no side effects such as diarrhea and, in fact, will not disturb the body’s host defense mechanism. It indeed compliments therapy by sparing essential host microflora as well as concomitant oral lactobacilli therapy normally given as an adjunct.

NANO COLLOIDAL SILVER: Studies Related to Anti-Bacterial and Anti-Viral Activity

Life Sciences, August 2019

Bacterial Membrane Destabilization With Cationic Particles of Nano-Silver to Combat Efflux-Mediated Antibiotic Resistance in Gram-negative Bacteria

[Samir A Anuj¹](#), [Harsukh P Gajera²](#), [Darshna G Hirpara²](#), [Baljibhai A Golakiya²](#)

Abstract

Aims: With the purpose of exploring combinatorial options that could enhance the bactericide efficacy of linezolid against Gram-negative bacteria, we assessed the extent of combination of nano-silver and linezolid.

Main methods: In this study, we selected *Escherichia coli* MTCC 443 as a model to study the combinatorial effect of nano-silver and linezolid to combat efflux-mediated resistance in Gram-negative bacteria. The acting mechanism of nano-silver on *E. coli* MTCC 443 was investigated by evaluating interaction of nano-silver with bacterial membrane as well as bacterial surface charge, morphology, intracellular leakages and biological activities of membrane bound respiratory chain dehydrogenase and deoxyribonucleic acids (DNA) of the cells following treatment with nano-silver.

Key findings: The alternation of zeta potential due to the interaction of nano-silver towards bacterial membrane proteins was correlated with enhancement of membrane permeability, which allows the penetration of linezolid into the cells. In addition, the binding affinity of nano-silver towards bacterial membrane depressed biological activities of membrane bound respiratory chain dehydrogenases and DNA integrity.

Significance: Our findings suggested that nano-silver could not only obstruct the activities of efflux pumps, but also altered membrane integrity at the same time and thus increased the cytoplasmic concentration of the linezolid to the effective level.

William Beaumont Army Medical Center in El Paso, Texas

The *In Vitro* Activity of Nano Colloidal Silver Anti-microbial Agent (called AGX-32) against Leishmania Promastigotes

L.J. Martinez, BC Veit, R Smiley, S McIntyre, S Baum at the William Beaumont Army Medical Center in El Paso, Texas USA

BACKGROUND

Leishmaniasis is caused by a group of protozoan parasites belonging to the genus *Leishmania*. The parasite is transmitted in the promastigote stage, but once phagocytized by tissue macrophages it becomes an amastigote. Treatment failures are common with clinical Leishmaniasis, and the toxicities of current treatment options are high. For these reasons, it is important to find alternative treatments for Leishmaniasis that are effective and well tolerated.

METHODS

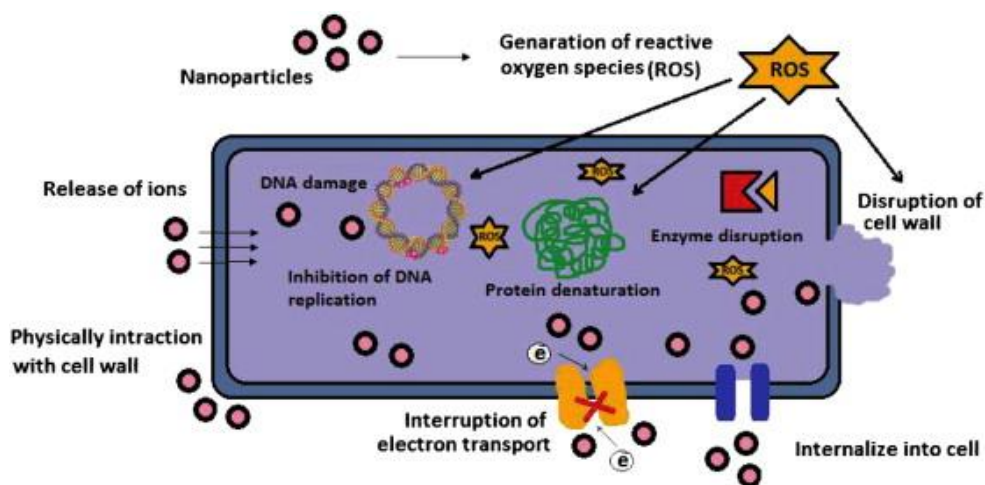
The three most common species of *Leishmania* were evaluated (*L. Mexicana*, *L. major*, *L. tropical*). The growth curves the promastigotes for these strains were established. Promastigote drug susceptibility was established for nano colloidal silver and compared with two known Leishmaniasis treatment agents.

RESULTS

AGX-32 showed activity against the promastigotes of all three species tested.

CONCLUSION

The nano colloidal silver (AGX-32) has been found to have growth inhibitory activity against *Leishmania* promastigotes *in vitro*. This has promise as an alternate treatment method, but must be established with further *in vivo* studies.



International Forum of Allergy & Rhinology, January 2014

Colloidal Silver: A Novel Treatment for Staphylococcus Aureus Biofilms?

[Rachel Goggin](#)¹, [Camille Jardeleza](#), [Peter-John Wormald](#), [Sarah Vreugde](#)

Abstract

Background: Colloidal silver is an alternative medicine consisting of silver particles suspended in water. After using this solution as a nasal spray, the symptoms of a previously recalcitrant Staphylococcus aureus (S. aureus)-infected chronic rhinosinusitis patient were observed to have improved markedly. The aim of this study was to determine whether colloidal silver has any direct bactericidal effects on these biofilms in vitro.

Methods: S. aureus biofilms were grown from the ATCC 25923 reference strain on Minimum Biofilm Eradication Concentration (MBEC) device pegs, and treated with colloidal silver. Concentrations tested ranged from 10 to 150 μL colloidal silver diluted to 200 μL with sterile water in 50 μL cerebrospinal fluid (CSF) broth. Control pegs were exposed to equivalent volumes of CSF broth and sterile water. The sample size was 4 biomass values per treatment or control group. Confocal scanning laser microscopy and COMSTAT software were used to quantify biofilms 24 hours after treatment.

Results: Significant differences from control were found for all concentrations tested bar the lowest of 10 μL colloidal silver in 200 μL . At 20 μL colloidal silver, the reduction in biomass was 98.9% (mean difference between control and treatment = $-4.0317 \mu\text{m}^3 / \mu\text{m}^2$), $p < 0.0001$). A maximum biomass reduction of 99.8% was reached at both 100 and 150 μL colloidal silver (mean differences = -4.0681 and $-4.0675 \mu\text{m}^3 / \mu\text{m}^2$), respectively, $p < 0.0001$).

Conclusion: Colloidal silver directly attenuates (*reduces the force or value of*) in vitro S. aureus biofilms.

The Indian Practitioner, Volume 63, No 9 (September 2010)

Nano Colloidal Silver Completely Removes Parasites from the Blood of Human Subjects in an Average of 5 Days: A Review of Four Randomized, Multi-Centered, Clinical Studies Performed in Africa.

Pederson, G, Hegde BM

INTRODUCTION

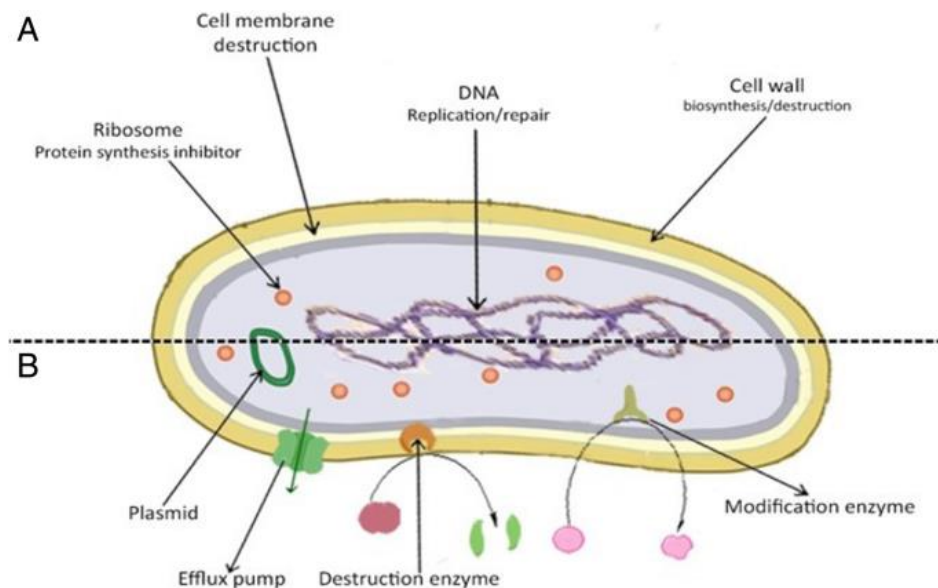
Certain blood born parasites are endemic to 106 nations and threaten half of the world's population. In 2008 there were more than 500 million cases that led to over a million deaths. This infectious disease is typically transferred by mosquitos and is caused by a eukaryotic protist of the genus Plasmodium. It is most prevalent in tropical and sub-tropical regions of the world.

ABSTRACT

Certain parasites afflict half of the world's population. Fifty-six human subjects from four separate study groups were used to determine the most effective dose. The optimal dose of nano colloidal silver was determined to be 15 mL (10 ppm) twice daily. The fastest cure rate was found to be 2 days. The most days required to achieve full recovery was found to be 10 days.

CONCLUSION

It is concluded that nano colloidal silver can be taken daily to eliminate certain parasites from the blood of infected human subjects in an average of 5 days.



Journal of Alternative and Complimentary Medicine:

March 2013

Spectrum of Antimicrobial Activity Associated With Ionic Colloidal Silver

[Kira Morrill](#)¹, [Kathleen May](#), [Daniel Leek](#), [Nicole Langland](#), [La Deana Jeane](#), [Jose Ventura](#), [Corey Skubisz](#), [Sean Scherer](#), [Eric Lopez](#), [Ephraim Crocker](#), [Rachel Peters](#), [John Oertle](#), [Krystine Nguyen](#), [Scott Just](#), [Michael Orian](#), [Meaghan Humphrey](#), [David Payne](#), [Bertram Jacobs](#), [Robert Waters](#), [Jeffrey Langland](#)

Abstract

Objectives: Silver has historically and extensively been used as a broad-spectrum antimicrobial agent. However, the Food and Drug Administration currently does not recognize colloidal silver as a safe and effective antimicrobial agent. The goal of this study was to further evaluate the antimicrobial efficacy of colloidal silver.

Design: Several strains of bacteria, fungi, and viruses were grown under multicycle growth conditions in the presence or absence of ionic colloidal silver in order to assess the antimicrobial activity.

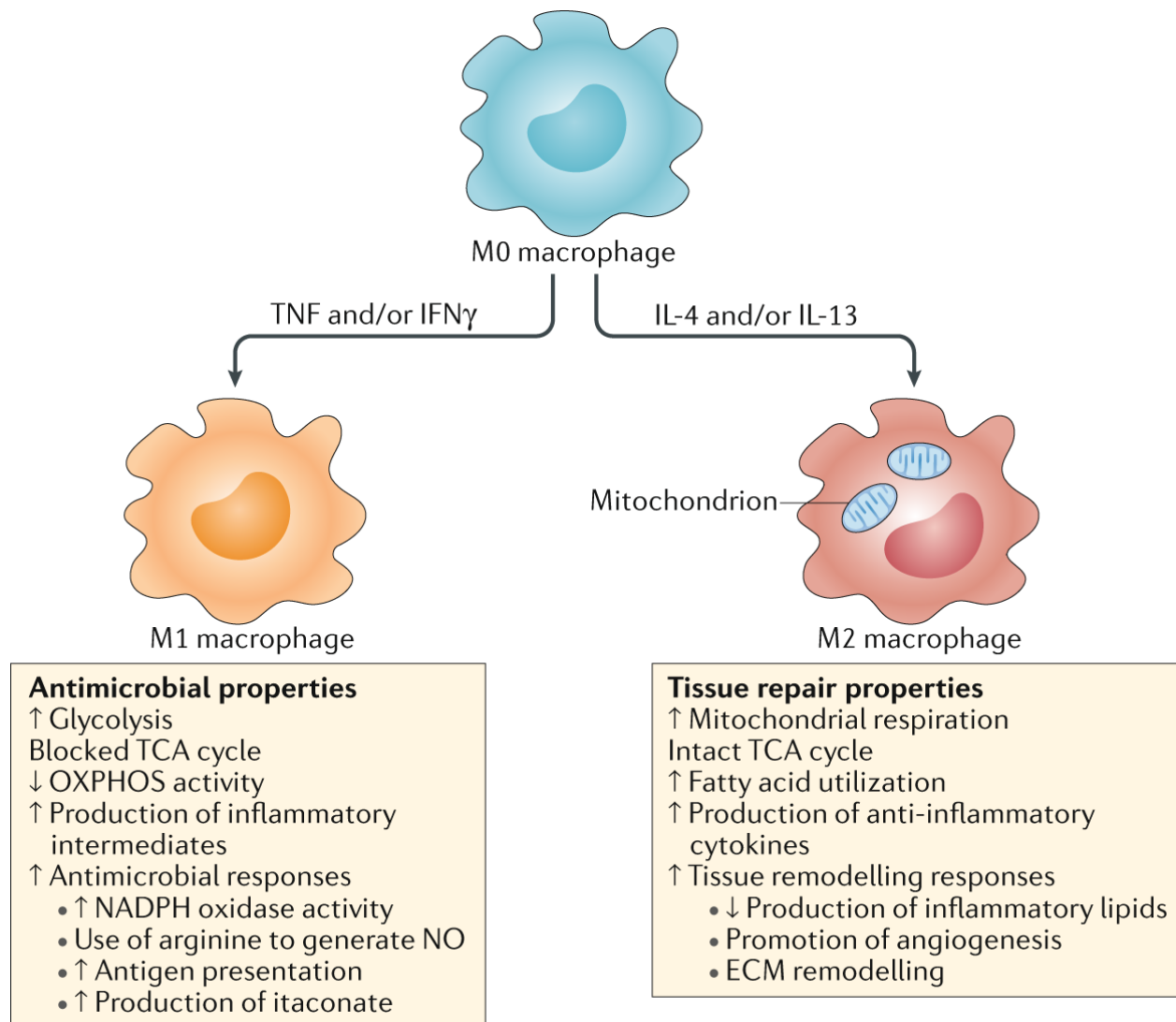
Results: For bacteria grown under aerobic or anaerobic conditions, significant growth inhibition was observed, although multiple treatments were typically required. For fungal cultures, the effects of ionic colloidal silver varied significantly between different genera. No viral growth inhibition was observed with any strains tested.

Conclusions: The study data support ionic colloidal silver as a broad-spectrum antimicrobial agent against aerobic and anaerobic bacteria, while having a more limited and specific spectrum of activity against fungi.

Antibiotiki: # 55 (9 – 10) (2010)

Bactericidal Activity of Nano Colloidal Silver against Gram-positive and Gram-negative Bacteria.

Abstract It was shown that colloidal silver solution prepared in cooperation with the A. F. Ioffe Physical Technical Institute of the Russian Academy of Sciences, had significant bactericidal activity. Stable bactericidal effect on gram-negative microorganisms was observed after their 2-hour exposition in the solution of colloidal silver at a concentration of 10 ppm. Gram-positive capsule-forming microorganisms were less susceptible to the colloidal silver solution: their death was observed after the 4-hour exposition in the solution.



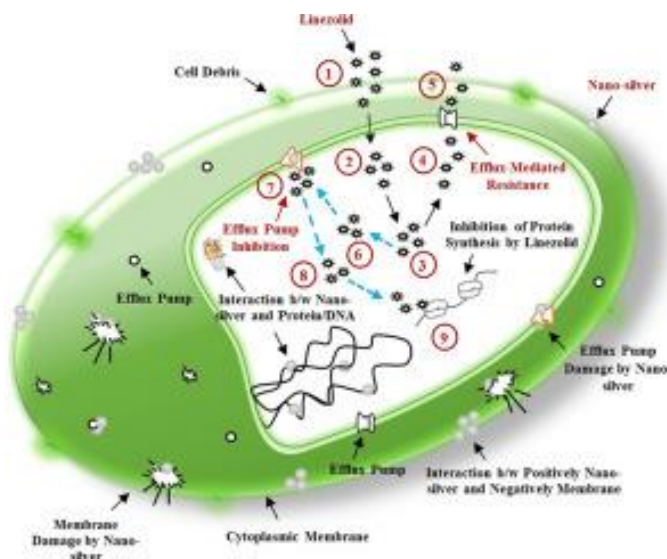
Bacterial Membrane Destabilization With Cationic Particles of Nano-Silver to Combat Efflux-Mediated Antibiotic Resistance in Gram-negative Bacteria

[Samir A Anuj](#)¹, [Harsukh P Gajera](#)², [Darshna G Hirpara](#)², [Baljibhai A Golakiya](#)²

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Synthesis and Antimicrobial Effects of Silver Nanoparticles Produced by Chemical Reduction Method

[S Kheybari](#)¹, [N Samadi](#), [S V Hosseini](#), [A Fazeli](#), [M R Fazeli](#)

Abstract

Background and the purpose of the study: The most prominent nanoparticles for medical uses are nanosilver particles which are famous for their high anti-microbial activity. Silver ion has been known as a metal ion that exhibit anti-mold, anti-microbial and anti-algal properties for a long time. In particular, it is widely used as silver nitrate aqueous solution which has disinfecting and sterilizing actions. The purpose of this study was to evaluate the antimicrobial activity as well as physical properties of the silver nanoparticles prepared by chemical reduction method.

Methods: Silver nanoparticles (NPs) were prepared by reduction of silver nitrate in the presence of a reducing agent and also poly [N-vinylpyrrolidone] (PVP) as a stabilizer. Two kinds of NPs were synthesized by ethylene glycol (EG) and glucose as reducing agent. The nanostructure and particle size of silver NPs were confirmed by scanning electron microscopy (SEM) and laser particle analyzer (LPA). The formations of the silver NPs were monitored using ultraviolet- visible spectroscopy. The anti-bacterial activity of silver NPs were assessed by determination of their minimum inhibitory concentrations (MIC) against the Gram positive (*Staphylococcus aureus* and *Staphylococcus epidermidis*) as well as Gram-negative (*Escherichia coli* and *Pseudomonas aeruginosa*) bacteria.

Results and conclusion: The silver nanoparticles were spherical with particle size between 10 to 250 nm. Analysis of the theoretical (Mie light scattering theory) and experimental results showed that the silver NPs in colloidal solution had a diameter of approximately 50 nm. Both colloidal silver NPs showed high anti-bacterial activity against Gram positive and Gram negative bacteria. Glucose nanosilver colloids showed a shorter killing time against most of the tested bacteria which could be due to their nanostructures and uniform size distribution patterns.

Antimicrobial Efficacy of Nano Colloidal Silver Against Vaginal Pathogens.

August 2004

Journal of Nanobiotechnology

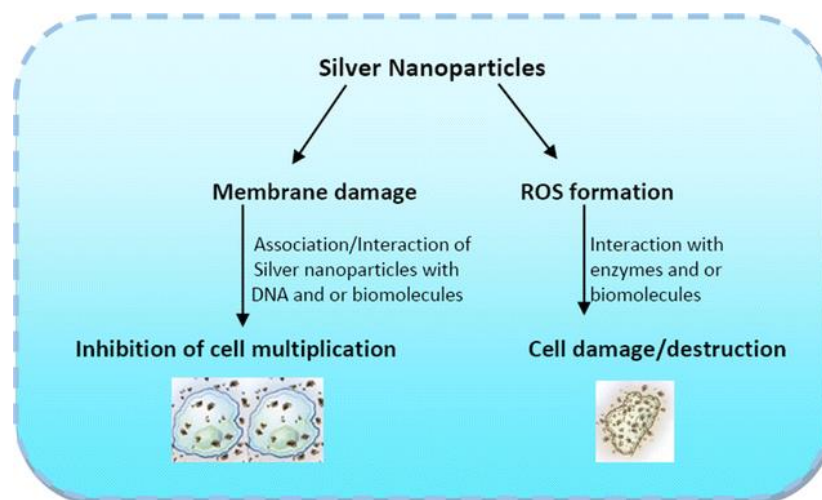
February 2018

A Review of Biosynthesis of Silver Nanoparticles and Their Biocidal Properties

- K. Alahuddin, A. Husen, R. Rao

Abstract

Use of silver and silver salts is as old as human civilization but the fabrication of silver nanoparticles (Ag NPs) has only recently been recognized. They have been specifically used in agriculture and medicine as antibacterial, antifungal and antioxidants. It has been demonstrated that Ag NPs arrest the growth and multiplication of many bacteria such as *Bacillus cereus*, *Staphylococcus aureus*, *Citrobacter koseri*, *Salmonella typhi*, *Pseudomonas aeruginosa*, *Escherichia coli*, *Klebsiella pneumonia*, *Vibrio parahaemolyticus* and fungus *Candida albicans* by binding Ag/Ag⁺ with the biomolecules present in the microbial cells. It has been suggested that Ag NPs produce reactive oxygen species and free radicals which cause apoptosis leading to cell death preventing their replication. Since Ag NPs are smaller than the microorganisms, they diffuse into cell and rupture the cell wall which has been shown from SEM and TEM images of the suspension containing nanoparticles and pathogens. It has also been shown that smaller nanoparticles are more toxic than the bigger ones. Ag NPs are also used in packaging to prevent damage of food products by pathogens. The toxicity of Ag NPs is dependent on the size, concentration, pH of the medium and exposure time to pathogens.



ALOE VERA CLINICAL STUDIES

Phytomedicine: July 2019

Therapeutic Potential of Aloe vera – A Miracle Gift of Nature

[Ramesh Kumar](#)¹, [Amit Kumar Singh](#)¹, [Ashutosh Gupta](#)¹, [Anupam Bishayee](#)², [Abhay K Pandey](#)³

Abstract

Background: Aloe vera is commonly used in the primary health care of human beings since time immemorial. It is an herb widely used in various traditional systems of medicine worldwide. Systematic and scientific investigation on A. vera as a medicinal plant has drawn considerable attention, and many laboratories are involved in isolation, characterization and evaluation of phytoconstituents for their nutraceutical and pharmaceutical applications.

Purpose: The aim of this study was to provide an overview of the phytochemical, biological and medicinal attributes of A. vera against various diseases with special emphasis on underlying mechanisms of action.

Methods: PubMed, EBOSCO host, Science Direct, Scopus, and Cochrane library databases were utilized to search literature published between 1977 and 2019 (till March). Major keywords used in various combinations included: Aloe vera, phytochemistry, metabolism, pharmacological activity, prevention, treatment, health, disease, in vivo, in vitro, and clinical studies.

Results: Various biological and pharmacological activities of A. vera, such as antioxidant, anti-inflammatory, immuno-modulatory, antimicrobial, antiviral, antidiabetic, hepatoprotective, anticancer, and skin-protective and wound-healing responses, have been attributed to the presence of many active compounds, including anthraquinones, anthrones, chromones, flavonoids, amino acids, lipids, carbohydrates, vitamins and minerals.

Conclusion: Based on various preclinical studies, A. vera constituents have enormous potential to prevent and treat various diseases. Randomized clinical trials are needed to understand the full therapeutic potential of this unique medicinal plant.

PLANT FOODS FOR HUMAN NUTRITION: September 2019

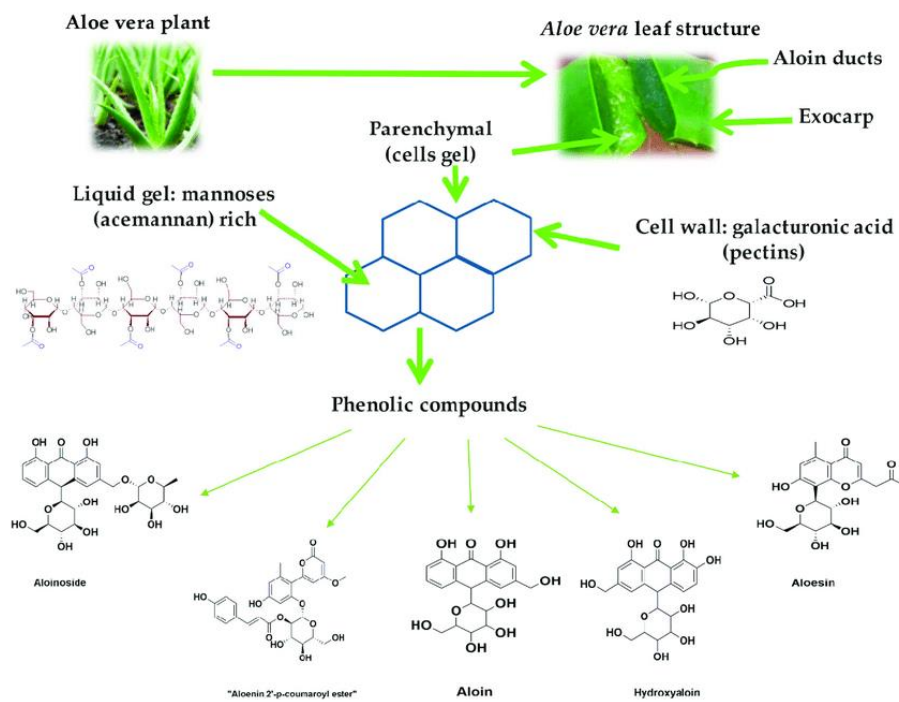
Aloe Vera (L.) Webb.: Natural Sources of Antioxidants - A Review

Marzanna Heś¹, Krzysztof Dziedzic^{2,3}, Danuta Górecka¹, Anna Jedrusek-Golińska¹, Elżbieta Gujska⁴

Abstract

Many studies have proved that bioactive components of Aloe vera have an anti-inflammatory effect and support lipid and carbohydrate metabolism, helping to maintain normal sugar and cholesterol levels in blood and normal body weight. When aloe is applied externally, it accelerates the regeneration of the damaged skin. Aloe contains antioxidants, which may increase the shelf-life and nutritional value of food; therefore, it is widely used in cosmetic, pharmaceutical and food industry. An antioxidant activity was shown for leaf's skin, flowers and gel of aloe. In this work the future of A. vera as effective antioxidants is primarily discussed and expected trends are summarized. Furthermore, the bioactive components and the health-promoting effects of A. vera are investigated.

Keywords: Aloe vera; Antioxidative activity; Bioactive components; Natural antioxidants.



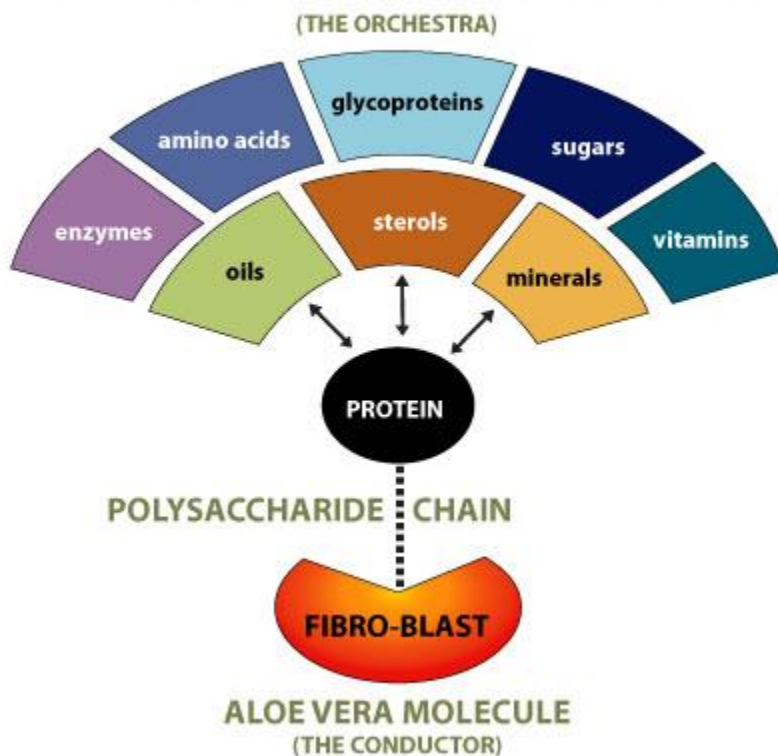
The Conductor – Orchestra Concept of Aloe Vera

- Dr. Robert Davis, PhD, University of Pennsylvania School of Medicine

The Conductor – Orchestra Concept was developed to better explain the relationships that exist among over 200 biologically active compounds within Aloe Vera. One of these molecules, a polysaccharide, acts as a conductor that leads a symphony composed of the 200+ biologically active compounds. The polysaccharide molecule consists of mannose molecules joined by beta 1 – 4 linkages to create a polysaccharide chain. As a conductor, the polysaccharide modulates the biological activity between surrounding orchestra molecules to work synergistically.

“Specialized molecules in Aloe Vera interact with special receptor substances that are embedded into the outer membrane of our immune system cells. The result is that the immune system cells are galvanized into action. In particular, the class of cells known as phagocytes increases the activities by which they attack and then engulf bacteria, waste products and debris.”

ALOE VERA ACTIVE COMPONENTS SYMPHONY



Immunomodulatory Effects of Aloe Vera and Its Fractions on Response of Macrophages Against *Candida Albicans*

[Zohreh Farahnejad](#)¹, [Tooba Ghazanfari](#), [Roya Yaraee](#)

Abstract

Natural products are important resources in traditional medicine and have been long used for prevention and treatment of many diseases. Medicinal plants have immunomodulatory properties. Aloe is one of the herbal medicines widely used in natural treatment and alternative therapy for various types of diseases. Aloe vera has been shown to modulate the immune response. Macrophages have been shown to play an essential role as the first line of defense against invading pathogen. *Candida albicans* is a communal and opportunistic pathogen in humans. In this study, we investigated the effect of *A. vera* extract and its fractions on infected macrophages with *C. albicans*. Viability of intraperitoneal macrophages was evaluated by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl tetrazolium bromide (MTT) test. Cell viability of infected macrophages was increased by the extract and dose of some isolated fractions dependently.

The extract as well as R100, R50, R30, and R10 fractions of *A. vera* significantly increased cell viability of macrophages in most doses. Further studies in animal models and human are necessary to clarify the modulatory effects of *A. vera* on macrophage function.



Macrophage Activation by Polysaccharide Biological Response

Modifier Isolated From Aloe Vera - C. Liu, M Leung, J Koon, L Zhu, Y Hui, K Fung

Abstract

A mannose-rich polysaccharide biological response modifier (BRM), derived from Aloe vera, was demonstrated to be a potent murine B- and T-cell stimulator in our previous study. We here report the stimulatory activity of PAC-I on murine peritoneal macrophage. The polysaccharide when injected into mice enhanced the migration of macrophages to the peritoneal cavity. Peritoneal macrophage when treated by PAC-I in vitro had increased expression of MHC-II and Fc γ R, and enhanced endocytosis, phagocytosis, nitric oxide production, TNF- α secretion and tumor cell cytotoxicity. The administration of PAC-I into allogeneic ICR mice stimulated systemic TNF- α production in a dose-dependent manner and prolonged the survival of tumor-bearing mice. PAC-I is thus a potent stimulator of murine macrophage and the in vitro observed tumoricidal properties of activated macrophage might account for the in vivo antitumor properties of PAC-I. Our research findings may have therapeutic implications in tumor immunotherapy.

IMMUNE RESPONSE