

THE EVOLUTION OF OPTI-SILVER™

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SUMMARY

The end result of the colloidal silver manufacturing process is where the science and manufacturing process of Opti-Silver begins. Colloidal silver consists of metallic, atomic, inert silver, which may be accompanied by some amount of silver ions (the only bioactive form of silver) bound up in the form of silver oxide and/or silver hydroxide. Opti-Silver, on the other hand, is manufactured using reagent-grade silver oxide as one of the raw materials. The silver ion is removed from the silver oxide and deliberately incorporated into a complex with citrate and potassium through precise chemical formulation. Citrate has been found to be the ideal carrier for transporting silver ions into the body and releasing them on a controlled, gradual-release basis. The introduction of potassium as the counter-ion makes the silver citrate water-soluble and thus soluble in the blood, and gives the complex the equilibrium constant needed for optimal performance in the body.

DEVELOPMENT OF OPTI-SILVER™

Colloidal silver has, for more than a century, been used in medical and alternative-medicine applications due to its reputation for killing germs in the body. It has also been used to help the body heal skin.

While there is, as yet, no substantial scientific data that would confirm the extent to which any colloidal silver product – or, for that matter, Opti-Silver – does or does not kill any given type of pathogen in the body, we can, for the sake of discussion here, assume that in general colloidal silver does indeed kill germs in the human body to some extent when ingested orally.

Given that assumption, the bottom-line conclusion that is inescapable is that the only method through which colloidal silver performs this function is by yielding some of its silver content as silver ions once it's in the blood system. A simple understanding of basic chemistry makes this clear. It is generally accepted by chemists and biochemists that only in the ionic state can silver have any bioactive effects. Only silver in the ionic state can kill germs or heal tissue. Silver atoms are what make up metallic silver and are entirely inert. In fact, only silver in the ionic state can contribute towards the build-up of silver that can eventually cause a skin discoloration known as argyria if irrationally excessive quantities are consumed. Silver atoms can't directly interact with the biology of the body at all in any way – only silver ions can do that.

Numerous recent news stories and press releases from major industrial and medical companies describe the use of silver for its bioactive benefits, which clearly spell out that it is the ionic form of silver that provides those benefits. A number of these news stories and press releases can be seen on SilverFacts.com at the following link: <http://www.silverfacts.com/efficacy.html>.

The fact that only silver in the ionic state exhibits any bioactive effects is a well-recognized premise that must inevitably serve as the basis for any comparison of various products that claim to deliver in a beneficial way to the human body.

The next fact that is an inescapable basic foundation for any discussion about the use of silver ions to benefit or assist the body is the fact that silver ions are extremely unstable. In order to be of use in the body they must first be combined with a stabilizing agent to get them past the oral mucosa and the gut – otherwise they would be captured by chloride ions and other agents that would bind up with them, were it not for that stabilizing agent. Then, after being transported into the body by that agent, the silver ions must be released in the blood as free silver ions in order to provide any bioactive benefits. The transporting agent should carry stabilized silver ions into the body and then provide a gradual yet thorough release of the silver ions once in the blood, thereby enabling most of the silver ion content to bypass the chloride ions and other agents that might otherwise capture them – not only in the mouth and digestive tract but also in the blood – and allowing them to be available where they might be most beneficial.

While some of the silver ion will inevitably still be captured by chloride ions and other agents in the body before those silver ions can be of benefit to the body, a controlled, gradual release of silver ions after they are successfully transported into the blood should dramatically reduce this phenomenon and thereby make some or most of the silver ion available to kill germs in the body.

However it's achieved, the most viable way to gain the potential benefits of silver in the body is through such a controlled delivery-and-release mechanism – stabilization of the silver ions, transporting them into the body, and then gradual release of the silver ions in the blood system.

Colloidal silver is a long-established substance that provides a means of achieving this – although some manufacturers and promoters of colloidal silver products still seem unaware that this is what it does. Opti-silver is a far more modern and drastically more advanced method of doing the same thing.

Both Opti-Silver and colloidal silver achieve the identical end result, which is to deliver silver ions to the body. Opti-Silver does so in a far more deliberate, efficient and controlled manner.

Colloidal silver was initially created more than a century ago and, apparently by sheer trial-and-error, was shown to provide a way to introduce silver into the body in such a way that at least some portion of that silver would provide bioactive benefits in the body. It is reasonable to presume that when colloidal silver was first created, the developers were not aware of why or how it provided benefits in the body. Today, biochemists know that it is a means for transporting silver into the blood and then ultimately releasing some of that silver as free silver ions, which are then available to provide bioactive benefits.

In the past hundred years, minor tweaks have been made to the colloidal silver manufacturing process employing many variations, but the overall approach has remained essentially unchanged and is by nature limited to being what it is. Only so much tweaking can be done. On the whole, the process is identical to what it was a hundred years ago, as is the end-result product. To be sure, many colloidal silver products appear to perform remarkably well. They always have. With

an understanding of chemistry, however, it becomes clear that the manner in which colloidal silver releases silver ions in the body is very inefficient. The production process and resultant colloidal silver product inherently have enormous limitations that cannot be improved upon without completely abandoning the entire premise of colloidal silver and starting over from scratch with a completely different and much more scientifically informed approach.

Opti-Silver is the modern-day answer to bridging the gap and overcoming the limitations inherent in colloidal silver. The designers went back to the drawing boards, picking up where colloidal silver leaves off. The creators of Opti-Silver were formerly colloidal silver manufacturers. The advisory team that assisted in the creation of Opti-Silver included some of the most experienced colloidal silver researchers in the world, who had spent decades mastering virtually everything that is known about the field. The developers of Opti-Silver additionally took full advantage of expertise in what we know today about modern chemistry, about ions, about equilibrium constants, and about the specific challenges involved in delivering silver ions to the human body – little of which was understood when colloidal silver was created and the production method through which it is still made to this day, called “electrolysis,” was devised.

Opti-Silver, comprised of silver citrate and potassium in pure water, is specifically designed to achieving the key goals of stabilization and controlled release of silver ions in the body in the optimal, most efficient manner possible.

The U.S. and foreign patents on Opti-Silver are unprecedented, each covering huge categories of potential complexing agents and counter-ions. From within those broad categories of available options covered under the patents, citrate and potassium were chosen by the manufacturer as the optimal choices for a silver ion delivery mechanism after exhaustive research and testing. The evolution of the technology spanned a number of years and more than a million dollars in development by the creators of the Opti-Silver complex.

After the sale of more than a hundred thousand bottles by the manufacturer of a consumer-line dietary-supplement product, Silver 100, Opti-Silver has, Silver 100 with Opti-Silver has apparently earned a reputation for dramatically outperforming any colloidal silver product in existence, based on the vast majority of the feedback I’ve seen from the doctors, resellers and end users who have experience with it.

To me, as a chemistry professor, this is to be expected and can be easily explained scientifically.

From the point of view of a chemist, Opti-Silver, by utilizing an understanding of basic chemical equilibrium, is an ingenious method of keeping silver ions in a soluble, stabilized form and then making them available to the body as active silver ions through a gradual, controlled release.

While most colloidal silver is reputed to provide remarkable results, the chemistry involved with colloidal silver allows for only a very small fraction of the performance that the Opti-Silver technology provides when comparing equal amounts of silver from one product to the other.

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ABOUT THE AUTHOR

Dr. Baird is an Associate Professor in the Department of Chemistry at [Nova Southeastern University](#). He has served as Chairman of the Department of Chemistry at Florida Atlantic University, where he was responsible for the development and initiation of the chemistry Ph.D. program. He has taught college chemistry for over 20 years. Dr. Baird received his Ph.D. in chemistry from the State University of New York-Buffalo in 1981. He has taught undergraduate courses in chemistry at Western Illinois University and Florida Atlantic University. Dr. Baird has published a number of research papers in chemical education journals as well as a chemistry study guide to accompany a popular textbook. He is a member of the [Silver Safety Committee](#).

DISCLOSURE/DISCLAIMER

Dr. Baird holds a minor shareholder interest in Invision International Health Solutions, Inc., which manufactures and markets Silver 100 and ProSilver 240, both of which contain Opti-Silver as the key ingredient. Dr. Baird is also a member of the Board of Advisors of Invision International.