



Commercialization of Innovative
SELDOX®
Platform Antimicrobial Technology

selenbio.com

Company Purpose, Strategy & Vision

SelenBio, Inc. is an Austin, TX based biotechnology company specializing in the prevention of bacteria colonization and biofilm formation across medical, dental, consumer and industrial applications.

The strategy is to initially validate SELDOX technology in multiple commercial applications to build value and integrity, then license its use across a wide variety of applications.

We believe SELDOX platform antimicrobial technology is disruptive and can become the standard in bacteria prevention and biofilm control.



The Problem

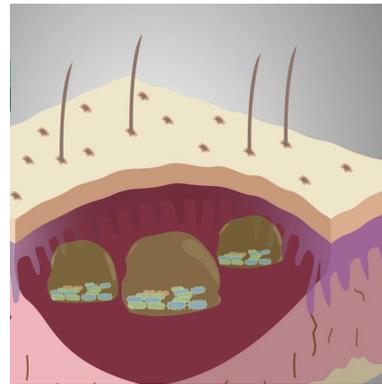
Bacterial biofilm forms when individual bacteria are allowed to colonize on a substrate. These bacteria form a complex matrix of millions of cells and are present everyday in the products we use, surfaces we touch, and our own bodies and health:



as dental plaque



on catheters & implants



on wound surfaces & dressings



in bathrooms, drains & piping



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on walls & other surfaces in numerous types of healthcare settings

Problem Validation

The presence of bacteria in healthcare, consumer and industrial applications is often harmful and costly.

*“Nearly 15% of Medicare beneficiaries (8.2 million) had at least one type of wound or infection (not pneumonia). Surgical infections were the largest prevalence category (4.0%), followed by diabetic infections (3.4%). Total Medicare spending estimates for all wound types ranged from \$28.1 to \$96.8 billion.” **An Economic Evaluation of the Impact, Cost, and Medicare Policy Implications of Chronic Nonhealing Wounds, Sept. 19, 2017***

*“According to a recent report, the typical Manhattan ATM is more bacteria-ridden than a wide range of other heavily used objects, including a subway pole, an NYC Wi-Fi hub and the handle of a public toilet at Penn Station.” **New York Post February 16, 2019***

*“...biofilm on urinary catheters results in persistent infections that are resistant to antimicrobial therapy.”
– **American Journal of Infection Control, 2004***



Current silver and copper-based antimicrobials used for treatment of bacterial growth are costly and carry harmful side effects due to their toxicity and leaching.

The Solution

SELDOX, developed at Texas Tech University and licensed and commercialized exclusively by SelenBio, Inc., is an innovative and proven antimicrobial compound derived from the element selenium. SELDOX works by generating superoxide radicals which destroy bacteria on contact, disrupting colonization and preventing the formation of biofilm.

While other antimicrobials exist on the market, various limitations prevent them from being practical, effective solutions to common bacterial control needs. Key attributes unique to SELDOX make it promising for a multitude of applications that currently lack a preventative solution.



Unique Aspects of SELDOX

SELDOX is unique in its qualities as an antimicrobial:

- **Catalytic** – as long as oxygen & sulfur/thiol groups (both ubiquitous) are present, SELDOX will not stop fighting bacteria – it's permanent and perpetual.
- **Non-leaching** – whereas other antimicrobials such as silver and copper leach into the environment, body or water supply, SELDOX remains covalently bound to a substrate with no reduction in effectiveness nor intrusion into the surrounding environment.
- **Potency** – Silver and copper-based antimicrobials lose potency and become increasingly less effective as they leach from their substrate. SELDOX perpetually fights bacteria at full strength.
- **Safe** – Unlike many competing antimicrobials, SELDOX is non-toxic, safe in and on the body, selenium is in fact nutritionally required by the body and will not cause discoloration of wounds and body parts.
- **Cost effective** – SELDOX is a fraction of the cost of silver and other antimicrobials.
- **FDA approved** – SELDOX has been cleared by the FDA and is commercially in use today.
- **Highly effective** – SELDOX has achieved 99.99% (and higher) effectiveness in killing numerous key bacteria, fungus and viruses, making it antibacterial, antifungal and viricidal.

SELDOX is positioned to be disruptive within the antimicrobial market and it offers treatments previously unavailable.

Markets and Applications

With the ability to be applied as a coating or covalently bound and integrated into a material or product itself, any product or place that would benefit from safe, permanent bacteria or biofilm protection is a potential application for SELDOX:

Healthcare
<ul style="list-style-type: none">• Bandages & wound dressings• Catheters• Implants• Surgical equipment• Gloves• Stents• ...etc.

Dental
<ul style="list-style-type: none">• Sealants• Dentures• Crowns• Adhesives• Veterinary sealants• ...etc.

Industrial
<ul style="list-style-type: none">• Marine bottom paint• Water filters• Water piping• Hospital paints & coatings• ...etc.

Consumer
<ul style="list-style-type: none">• Contact lenses & cases• Bathroom grout & tile• Door handles• Cutting boards• Household paint• ...etc.



All with built-in antimicrobial protection.

Competitive Advantage & Scaling Opportunity

SELDOX platform antimicrobial technology provides competitive advantage and scaling opportunities in the following ways:

- **Multiple Revenue Sources:** revenue will be realized both from royalty and fees charged for sublicensing and also from the sale of SELDOX antimicrobial compound. Ultimately, as the technology matures, revenue can also be received from fees charged for Research & Development services to prospective sublicensee's.
- **Recurring Revenue:** once a sublicense has been executed for an application(s) in a particular industry, SelenBio, Inc. will receive ongoing royalties and fees for the remaining life of the patent (2030).
- **Platform Based Instead of Single Product:** the countless number of applications that can benefit from an antimicrobial enhancement mitigates the investment risk.
- **Network Effect In Action:** the value of the technology (company) increases with the number of users (sublicensee's).
- **Virality:** not the same as "network effect" in that users invite (attract) other users.

Dental Application

In 2018 SelenBio Dental launched the **DenteShield™** line of sealants with SELDOX technology.



DenteShield has been well received by the dental and orthodontic communities for its unique properties and ability to prevent plaque formation, decay, and demineralization (white spot lesions). Now commercially proven & successful, SelenBio has identified an exclusive distributor and additionally will begin the licensing process with various dental manufacturers.



Progress & Status of Company Strategy

Now that SELDOX has been successfully integrated and commercially proven in the human dental market and now launched in the veterinary market, SelenBio, Inc. plans to continue its business development strategy by completing the following 6 projects within the next 12-18 months.

Project Title:	Distribution Agreement(s) with Dental Supply Companies
Status:	Discussion is underway with human dental supply company. Veterinary supply companies are being identified.
Estimated time to complete:	3 - 6 months
Estimated cost to complete:	\$10,000

Project Title:	Wound Care Bandage
Status:	SELDOX integration with bandage material completed successfully. Final microbiology remaining. Regulatory approval and marketing by sublicensee to follow.
Estimated time to complete:	6 - 10 months
Estimated cost to complete:	\$25,000



(Progress & Status Continued Next Slide)

Progress & Status (cont'd)

Project Title:	Silicone Integration
Status:	Term sheet for joint development and sublicense presented to medical-grade silicone manufacturer. Upon execution, R & D and commercialization to follow.
Estimated time to complete:	12 - 18 months
Estimated cost to complete:	\$250,000

Project Title:	Polyurethane, Polyethylene & other Polymers
Status:	Water/liquid tubing completed, others at various stages of R & D. Manufacturers/suppliers (i.e. sublicensee's) identified. Execution of sublicense agreement(s).
Estimated time to complete:	3 - 6 months
Estimated cost to complete:	\$50,000

Project Title:	Paint
Status:	Initial legal documents executed. R & D to begin within 1-2 months. Early test results indicate success.
Estimated time to complete:	6 - 10 months
Estimated cost to complete:	\$50,000

Progress & Status (cont'd)

Project Title:	Addition to other products through manufacturers
Status:	In various stages of discussion and final agreement execution on inclusion of SELDOX compound in manufacturing process of other products.
Estimated time to complete:	6 - 12 months
Estimated cost to complete:	15,000

SelenBio, Inc. conducts ongoing assessments and evaluations of new application opportunities. Each potential application is gauged by the ***Product Development & Licensing Strategy*** described on the following slide.

Product Development & Licensing Strategy

This is how we bring our revolutionary technology to the world:

1. SelenBio, Inc identifies industries and applications in which its SELDOX platform antimicrobial technology can offer either an improved clinical outcome or significantly reduced cost.
2. We then consider each potential application's market opportunity, barriers to entry, and existing competitive landscape to determine whether a SelenBio branded product entry or strategic sublicense partnership is more appropriate.
3. SelenBio directly approaches targeted industries or partners with a competitive advantage and value driven proposition. Commercialized applications are sold through distributors, manufacturer sales organizations or through established direct sales channels of sublicensee, with support and supplemental marketing activity provided by SelenBio.
4. SelenBio will be the sole and exclusive provider of SELDOX compound to all sublicensee's.
5. We maintain an active web and social media presence and participate in industry-relevant trade shows, expos, and conferences nationwide to educate consumers and business partners of the availability and advantages of our products.

Sublicensed integration of SELDOX into raw materials to reach downstream product applications is an area of particular interest – this will allow us to maintain a lean operation while reaching broader markets.



Traction & Milestones

GingiShield™ veterinary sealant product launched – **Jul 2019**

Sublicense Agreement for textile (cotton) application – **Jun 2019**

Integration and testing successful with paint application – **Apr 2019**

Work begins on development of antimicrobial glaucoma tube – **Oct 2018**

SelenBio begins co-development of silicone products – **Jun 2018**

DenteShield™ dental products launched – **2018**

SELDOX patents & licenses acquired – **Jul 2017**

SelenBio Team

Executive Management Team



Kenny Gallagher, CEO

- 30 years of startup, growth, and C-level executive management experience
- 4 years prior experience as CEO working with selenium technology in dental applications
- Led FDA 510(k) clearance efforts and organized business development for Element34 Technology, Inc



Karl Doenges, JD, President

- 15 years executive management experience in startups, SME's, and corporations
- 9 years in biotech new product commercialization
- 20 years experience in government, regulatory, and international affairs



Matt Belsole, Director of Business Development

- 15 years experience in sales management and strategy for healthcare and medical device products
- 7 years previous experience working with SelenBio CEO in strategic partner and distributor account development

Research & Development Team

Dr. Ted Reid, PhD, Chief Science Officer

- Co-inventor of SELDOX® technology
- Professor, Texas Tech University Health Science Center, Departments of Ophthalmology and Visual Sciences, Chemistry and Biochemistry, Immunology and Molecular Microbiology and Biotechnology

Dr. Rob Hanes, PhD

- Director of Chemical Services, Sparx Engineering
- Lead chemist – SELDOX® development

Dr. Phat Tran, PhD

- Microbiology Testing
- Research Instructor, Texas Tech University Health Science Center

SelenBio, Inc also maintains a Professional Advisory Board and Industry Consultants -- trusted experts in dental, veterinary, chemistry, and regulatory fields.

IP Summary

PATENT NO	COUNTRY	TITLE	EXPIRATION
2006269657	AUS	SELENIUM-BASED BIOCIDAL FORMULATIONS AND METHODS OF USE THEREOF	5/24/2026
8,236,337	USA	ANTI-MICROBIAL ORTHODONTIC COMPOSITIONS AND APPLIANCES AND METHODS OF PRODUCTION AND USE THEREOF	7/17/2026
9,370,187	USA	SELENIUM-BASED BIOCIDAL FORMULATIONS AND METHODS OF USE THEREOF	2/3/2030
1,898,706	EPO	SELENIUM-BASED BIOCIDAL FORMULATIONS AND METHODS OF USE THEREOF	5/24/2026

TRADE SECRETS

Trade Secrets within Licensed Technology include:

- 1.Trade Secret #1 Titled: Formulation and Synthesis Preparation of Organoselenium Compounds (SA 1, 2 and derivatives)
- 2.Trade Secret #2 Titled: Formulation and Synthesis Preparation of Organoselenium Zinc Salt Compounds
- 3.Trade Secret #3 Titled: Preparation of a Universal Diselenide Capable of Derivitization to Functional, Active Antimicrobials for Attachment to Surfaces, Copolymerization and Attachment to Molten Polymers
- 4.Trade Secret #4 Titled: Methods for Preparing Diselenides from Akyl and Benzyl Halides

TRADEMARKS

SELDOX, DenteShield, GingiShield

For investment opportunity or to request copies of the SELDOX™ research and data referenced in this presentation please contact:

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