Sonoma™
PHARMACEUTICALS

Skin and Wound Care

Microcyn® Technology

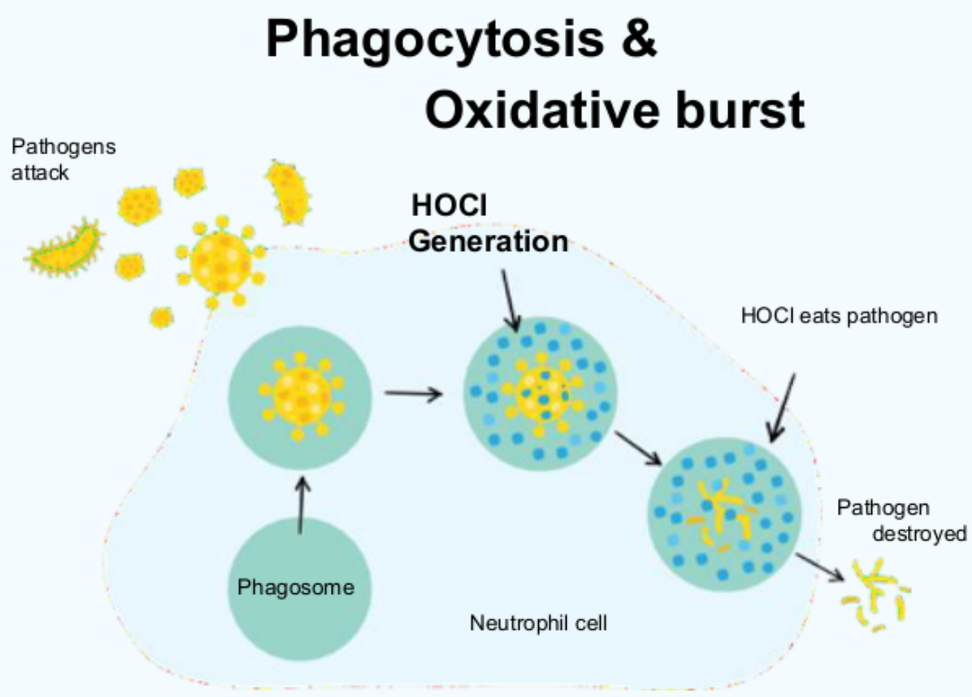
Natural Body Ingredients That Boost Your Immune System

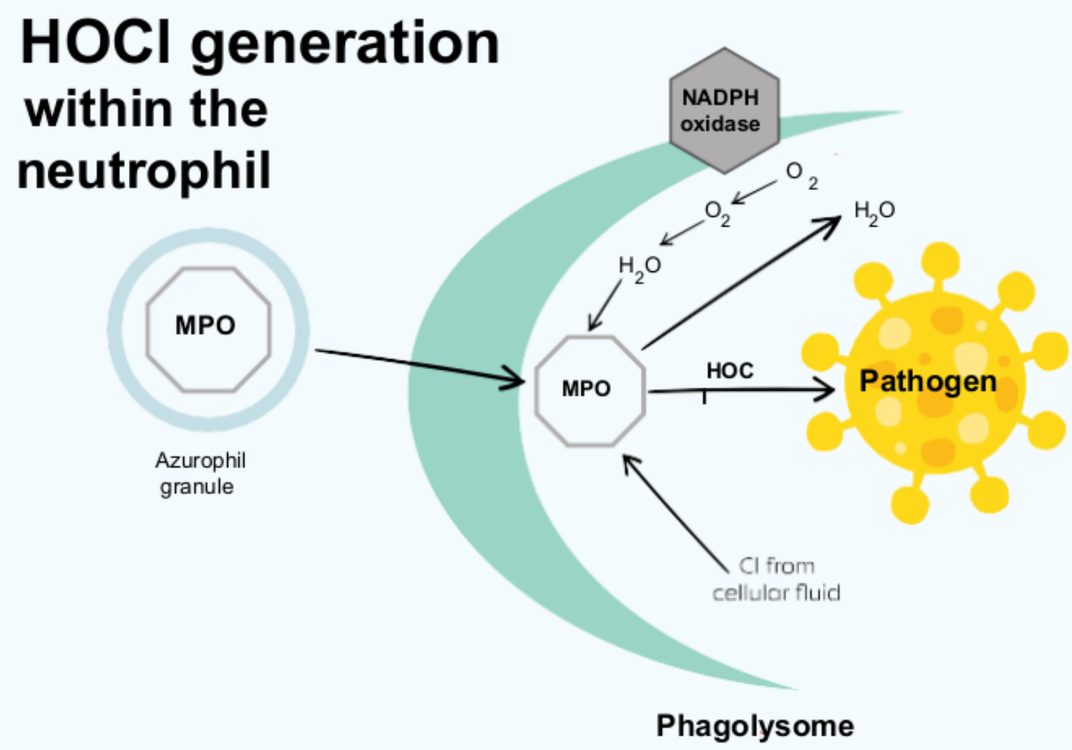
The Microcyn®-based family of products are formulated from an electrically charged oxychlorine compound of small molecules. The main component, hypochlorous acid (HOCl), is naturally produced as part of our immune system during phagocytosis. During the activation of neutrophils, 'respiratory bursts' generate hydrogen peroxide (H2O2) and the activated granule enzyme myeloperoxidase converts H2O2 into hypochlorous acid (HOCl).

When neutrophils encounter bacteria or other pathogens, the neutrophils engulf it, generate HOCl and instantly destroy the microorganism.

This process is called the "oxidative burst".

- **Unique, patent protected, cutting-edge, manufacturing process**
- **Tightly controlled and unmatched chemistry resulting in unmatched stability**
- **Based on one of the body's most important molecules: Hypochlorous acid (HOCl)**
- **The first stable patented HOCl formulation in a bottle**
- **Evidence based stable, safe & effective technology**



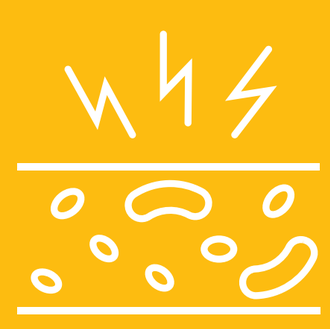


Triple Mode of Action

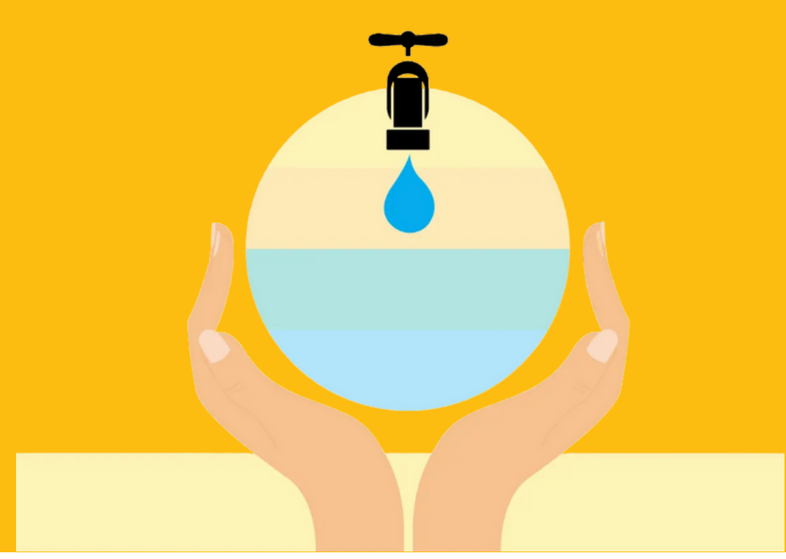
Based on one of the body's most important molecules, Hypochlorous acid (HOCl), Microcyn® Technology has a Triple Mode of Action and profound impact on infection, inflammation and scarring.

Anti-microbial

Anti-Inflammatory



Regenerative



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Microcyn® Technology

Microbial Load Reduction and Infection Control

Patented Technology Supported By More Than 100 Clinical Papers

Country	Clinical Paper Title	Source	Subject Focus	Control Product
USA	Super-Oxidized Dermacyn in Lower-Extremity Wounds	Wounds (IWJ)	DFU	n.a.
IT	Super-Oxidized Solution (SOS) Therapy for Infected Diabetic Foot Ulcers	Wounds (IWJ)	DFU	P.I.
USA	The Science behind stable, Super-Oxidized water, Exploring the various applications of SOW	Wounds (IWJ)	DFU, LU, PU, Burns	
USA	Superoxidized Water Improves Wound Care Outcomes in Diabetic Patients	DMCT	DFU, burns, other	n.a.
USA	Nonsurgical Management of Chronic Wounds in Patients with Diabetes	JVU	DFU, LU, PU, Burns	n.a.
IT	Super-Oxidized Solution (SOS) Therapy for Infected Diabetic Foot Ulcers	IWJ, AAWC	DFU	P.I.
IT	Treatment of Diabetic Foot Ulcer: An Overview Strategies for Clinical Approach	CDR	DFU	
IT	Clinical Outcome of Wide Postsurgical lesions in the Infected Diabetic Foot Managed with 2 different local treatment regimes compared using Quasi Experimental Study Design: A preliminary comm.	LEW	DFU	P.I.
IT	A Randomized Controlled Trial to examine the efficacy and safety of a new Super-Oxidized Solution for the management of wide Postsurgical lesions of the Diabetic Foot	IJLEW	DFU	P.I.
ES	Super-Oxidized Solution (Dermacyn Wound Care) as Adjuvant Treatment in the Postoperative Management of Complicated Diabetic Foot Osteomyelitis	IJLEW	Diabetic Foot Osteomyelitis	P.I.
USA	Dermacyn: A novel superoxidized water facilitates wound healing. Early experience in lower extremity wounds and limb salvage	SAWC	DFU	TWC
IT	Use of Dermacyn, a new antiseptic agent, for the local treatment of Diabetic Foot Ulcers	EWMA	DFU	P.I.
IT	Clinical Outcome of Wide Postsurgical lesions in the Infected Diabetic Foot Managed with 2 different local treatment regimes compared using Quasi Experimental Study Design: A preliminary comm.	LEW	DFU	P.I.
IT	Clinical Results about an antimicrobial solution in the treatment of infected chronic wounds	EWMA	Chronic Wounds	P.I.

DFU = Diabetic Foot Ulcer LU = Leg Ulcers PU - Pressure Ulcers TWC = Traditional Wound Care PI = Providone Iodine

IN-VITRO MICROBICIDAL PERFORMANCE STUDIES

Catagory	Microorganisms	Standerd/Method	Type	Exposure Time (Minutes)	Microbial Load Reduction
Bactericidal	*Pseudomonas aeruginosa*	AOAC Use Dilution BSEN13727:1999	Carrier Suspension	10 15	> 4.7 log > 5.4 log
	Staphylococcus aureus	AOAC Use Dilution BSEN13727:1999	Carrier Suspension	10 15	> 4.7 log > 5.1 log
	Salmonella choleraesuis	AOAC Use Dilution	Carrier	10	> 5.7 log
	Enterococcus hirae	BS EN 13727:1999	Suspension	15	> 5 log
	Escherichia coli	AOAC Use Dilution	Carrier	1	> 5 log
Bactericidal (Resistant Strains)	*Methiciline resistant Staphylococcus Aureus (MRSA)*	AOAC Use Dilution	Carrier	10	> 5.9 log
	Vancomycin resistant Enterococcus Faecalis (VRE)	AOAC Use Dilution	Carrier	10	> 6.1 log
Tuberculocidal	*Mycobacterium bovis*	Tuberculocidal Suspension	Suspension	5	> 6.4 log
Virucidal	Human Immunodeficiency Virus type I (HIV-I)	acc. U.S. EPA guidelines	Carrier	10	> 3.7 log
Fungicidal	*Trichophyton mentagrophytes*	Fungicidal Use Dilution	Carrier	10	> 6.3 log
Sporicidal	*Bacillus atrophaeus*	BS EN 14347:2002	Suspension	5	> 6.5 log

There are no known drug interactions or contraindications with Microcyn®-based products. Independent laboratory tests have demonstrated the technology to be non-irritating, non-sensitizing and non-toxic.

IN-VITRO MICROBICIDAL PERFORMANCE STUDIES

Category	Sub-category	Standard / method	Result
Toxicity	*Genotoxicity*	ISO 10993-3:2003	Pass
	Cytotoxicity	ISO 10993-5:1999	Pass
	Acute oral toxicity	ISO 10993-11:1996	Pass
	Acute dermal toxicity	ISO 10993-11:1996	Pass
	Acute inhalation toxicity	ISO 10993-11:1996	Pass
Sensizitation	Dermal sensitization	ISO 10993-10:2002	Pass
Irritation	Skin irritation	ISO 10993-10:2002	Pass
	Ocular irritation	ISO 10993-10:2002	Pass

HOCl Time Kill in Solution

99.999% REDUCTION OR HIGHER IN 30 SECONDS

Acinetobacter baumannii	7.0488 Log	*Micrococcus yunnanensis*	5.6137 Log
Bacteroides fragilis	3.3565 Log	*Propionibacterium acnes*	5.2967 Log
Candida albicans	6.4699 Log	*Proteus mirabilis*	6.7477 Log
Corynebacterium diphtherieae	5.2778 Log	*Pseudomonas aeruginosa*	6.5867 Log
Clostridium difficile (spores)	4.6085 Log	*Serratia marcescens*	6.5811 Log
Enterobacter aerogenes	6.7200 Log	*Staphylococcus aureus-MRSA*	6.7032 Log
Enterococcus faecalis-VRE MDR	5.6085 Log	*Staphylococcus aureus*	6.5008 Log
Escherichia coli	6.5272 Log	*Staphylococcus pyogenes*	6.4214 Log
Haemophilus influenzae	5.4107 Log	*Trichophyton mentagrophytes*	4.6752 Log
Klebsiella oxytoca	6.7810 Log	*Vibrio vulnificus*	5.1888 Log
Klebsiella pneumoniae ozaenae	6.8086 Log		
Malassezia furfur	5.3953 Log		

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Microcyn®

Skin and Wound Care Family of Products

In order to heal wounds as quickly as possible, effectivity and safety (non-toxicity) must be united. The use of natural body ingredients will speed up the healing process by stimulating the body's immune system. Discover what makes our wound care solution unique.

Key Features

- **Safe -** Water based solution (no alcohol, Iodine, antibiotics, or steroids). Neutral pH, non-cytotoxic, non-irritating, non-sensitizing, and can be used on all ages.
- **Convenient -** Ready-to-use, no mixing or diluting required. 24 to 36 month shelf life, and is easily disposed of without biohazard precautions. Multiple modes of dispense including: hydrogel, spray, and flip cap to best suit all treatments.
- **High Compatibility -** Can be used prior, post or in conjunction with a wide variety of wound healing products. No contraindications or drug/treatment interactions.
- **Powerful -** Formulated from Microcyn® patented and clinically proven hypochlorous acid technology. Removes microorganisms, irritants, and destroys biofilm. Relieves pain, itch, inflammation, and Increases granulation. Anti-Allergenic, anti-inflammatory and antipruritic.

Benefits

- **Does not develop bacterial Resistance.**
- **Breaks down biofilm in 30 seconds.**
- **Improves healing time by 30%.**
- **Destroys wound odor.**
- **Increases blood and oxygen flow to wound.**
- **Significant itch relief in first 24 hours.**
- **Safe for use on exposed joints, cartilage, ligaments, and tendons.**
- **Most stable HOCl on the market.**

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Microcyn® Solution

Indications For Use:

Microcyn® Solution is intended to be used by healthcare professionals in the management, via debridement of wounds such as stage I-IV pressure ulcers, partial and full thickness wounds, diabetic foot ulcers, post surgical wounds, first and second degree burns, grafted and donor sites.

- Solution comes in a spikeable cap bottle, spray bottle or squeeze bottle to best suit all wound care treatments.
- Safe to use around nose, mouth and eyes.
- Solutions comes in different sizes to provide optimal treatment for all sized wounds and treatment options.

Microcyn® Skin and Wound Hydrogel

Indications For Use:

Under the supervision of a healthcare practitioner, Microcyn® Skin and Wound Hydrogel is intended for management of wounds including itch and pain relief associated with dermal irritation, sores, injuries and ulcers of dermal tissue. Intended for use on first and second-degree burns, exuding wounds such as leg, pressure, or diabetic ulcers and for the management of mechanically or surgically debrided wounds.

- Gel solution provides user with maximum moisturizing power. Optimal for wound packing and creating a moist yet sterile wound environment.
- Use on dry or slightly moist wounds, necrotic or nonviable tissue wounds such as skin tears, abrasions and superficial lacerations, radiation skin damage.

Microcyn® Negative-Pressure Wound Therapy Solution

Indications For Use:

Microcyn® Negative Pressure Wound Therapy Solution is intended to be used by healthcare professionals in the management, via debridement of wounds such as stage I-IV pressure ulcers, partial and full thickness wounds, diabetic foot ulcers, post surgical wounds, first and second degree burns, grafted and donor sites.

- Effective cleansing, disinfecting, and decontamination of V.A.C.® machines and associated parts
- Seamless and quick use with all negative pressure therapies, such as V.A.C.®

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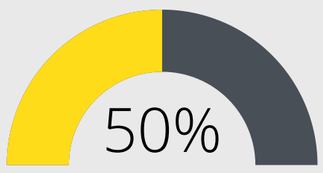
Microcyn® Technology

Proven results of skin and wound care family of products

Open label, single arm study over 7 days

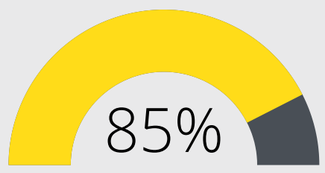
Hypochlorous Acid was shown to rapidly reduce pruritus in mild to moderate atopic dermatitis.

Day 1



Reported significant improvement initch

Day 3

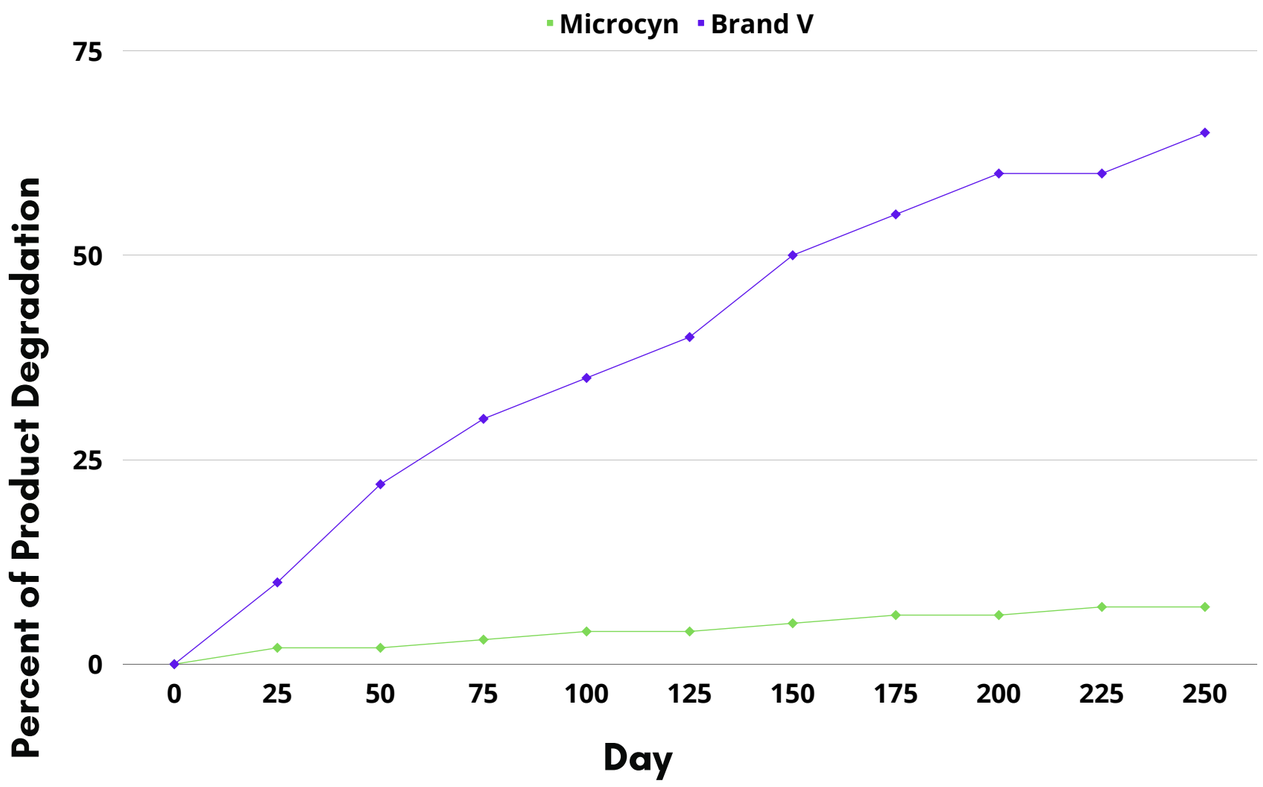


Reported significant improvement initch

Proven Under Clinical Conditions

in a controlled prospective-study, 90% of patients had a distinct increase in granulation and improvement in the surrounding skin

Stability Comparison of 500 mL Brand V and Microcyn



As shown, competitors HOCL solutions degrade at a seven times rate compared to Microcyn solution. As a result Brand V and others manufacture HOCL products at cytotoxic levels to secure a minimal level of shelf life.

(A) 7 year old patient with chronic eczema, complaining of extreme pain and itchiness. with extreme discharge

(B) Patient was given steroidal cream and symptoms dramatically worsened.

(C) Patient was switched to hydrogel HOCL treatment for 5 weeks symptoms dramatically improved.

Breaks Down Biofilm

30 Seconds

Biofilm formation is recognized as a serious problem in chronic wound infections. HOCl has antibiofilm activity and actively breaks down biofilm and kills microorganisms within the biofilm.

(A) 48 year old woman with severe diabetic foot infection. Initial assessment assigned patient to below the knee amputation.

(B) 2 weeks after Microcyn treatment. Demonstrates an increase in granulated tissue and improvement of skin condition around ulcer

(C) 9 weeks after Microcyn treatment. Granulating tissue, wound contraction and growth of healthy skin.

(D) Demonstrates completely healed wound 4 months later.

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Microcyn®

Skin and Wound Care Family of Products

Skin and Wound Care

Product	Item #	Case Quantity	UPC
Irrigation Solution 33.5oz / 990ml	84781	6	189116000781
Irrigation Solution 16.9oz / 500ml	84798	12	189116000798
Spray Bottle 8oz / 237ml	84507	12	189116000507
Spray Bottle 2oz / 59ml	84871	6	860439002095
Squeeze Bottle 8.5oz / 250ml	84491	12	189116000699

Skin and Wound Hydrogel

Product	Item #	Case Quantity	UPC	HCPCS
Hydrogel 3oz / 86g	84804	12	189116000804	A6248
Hydrogel 1.5oz / 43g	84750	12	189116000750	A6248

Negative Pressure Wound Solution

Product	Item #	Case Quantity	UPC
Solution 33.8oz / 1000ml	84804	12	189116000804
Solution 15.2oz / 450ml	84842	12	189116000842

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