

TM
THERUPTOR

BARRIER DRESSING

**SURGICAL
WOUNDS**

**EXUDING
WOUNDS**

**FIRST AND
SECOND
DEGREE
BURNS**

**VENOUS
ULCERS**

**PRESSURE
ULCERS**

**DIABETIC
ULCERS**

**WOUND
PACKING**



**Made in India by
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™ THERUPTOR

BARRIER DRESSING

Theruptor is an active advanced wound care product that provides significant benefit in wound healing. Its patented microbicidal technology provides continuous protection from infection while allowing the body to heal faster with superior exudate management and moisture management.

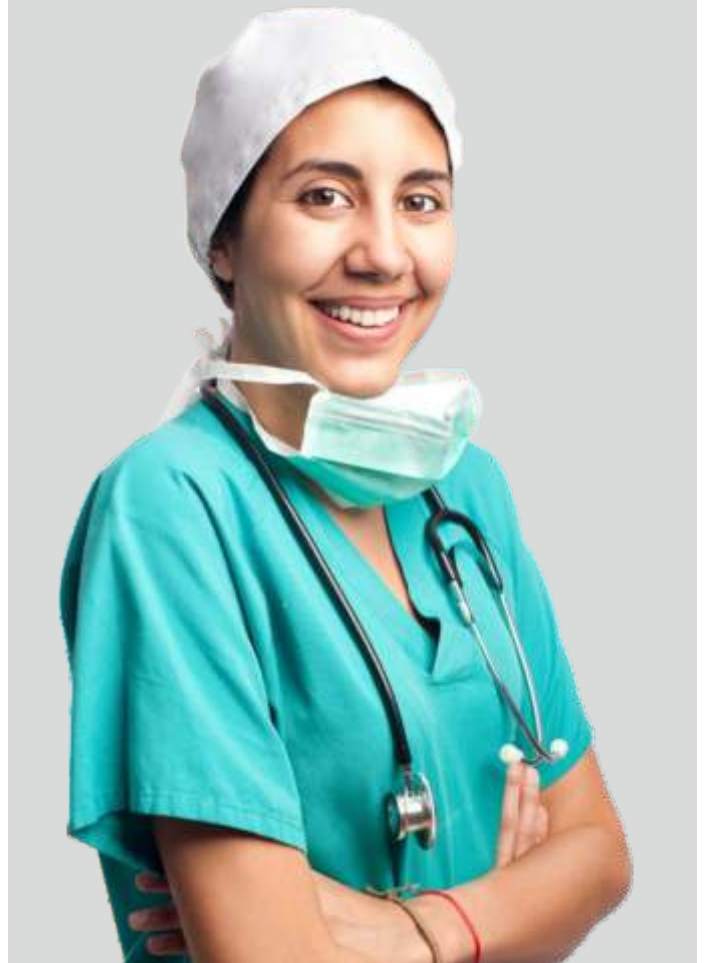
Non Leaching & Non toxic

Theruptor is intended for use on minor wounds, surgical wounds, trauma wounds, venous ulcers, Pressure ulcers, diabetic ulcers & chronic vascular ulcers

Theruptor family of wound dressings are available in different forms including Incision Dressing, IV Fixation Dressing, Surgical Dressing, Chronic wound dressing for infected wounds of Ulcers. They are also available with non adherence technology as well as Water proof dressings

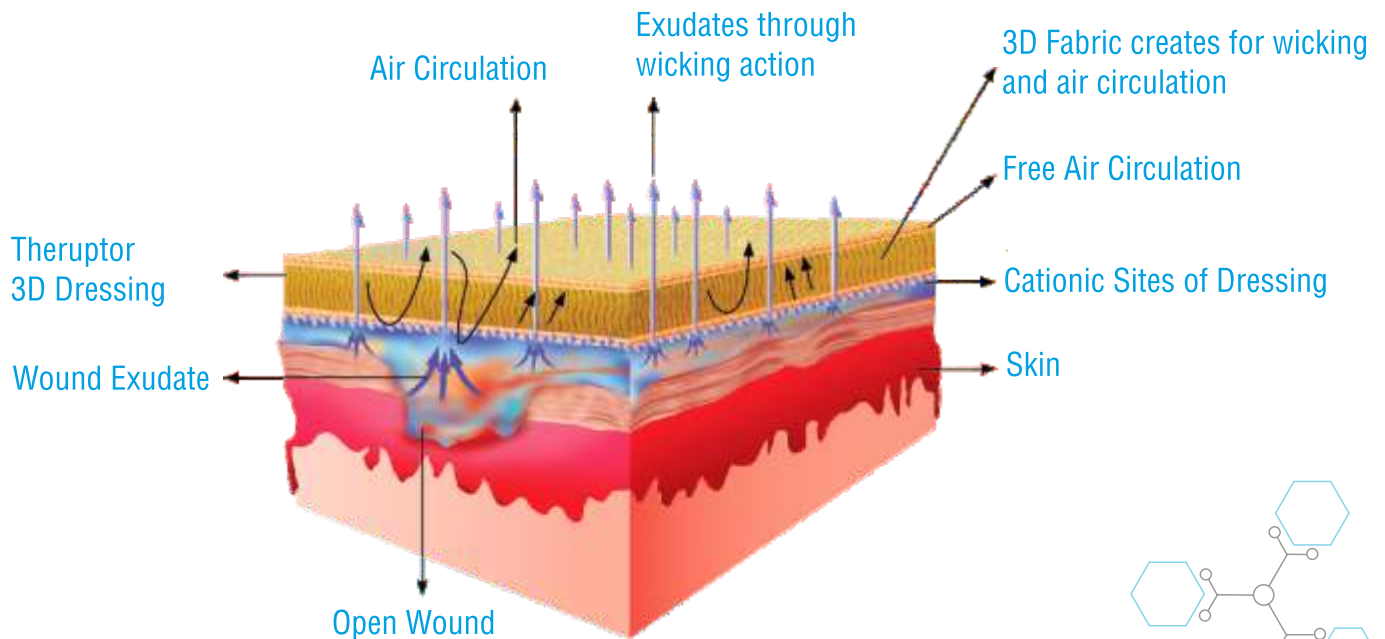
Wounds are a growing challenge

Chronic wounds are very receptive to many harmful microbes. They represent a significant obstacle to faster wound healing and in some cases lead to complications. The type of microbes as well as the general health of the patient determine to what degree the wound healing is influenced. 1 in 4 families has a patient with chronic wound and they are strongly correlated with age and diseases such as diabetes. Surgical interventions, which provide an improvement to patient lives also produce wounds and may become vulnerable to infection. A wound care product that provides protection from infection and helps the body in healing without frequent changes is the need of the hour.



Theruptor Sterile Barrier Wound Dressing

Theruptor is an active wound care system that achieves infection control by continuously inhibiting growth of pathogen without depletion of kill mechanism. It provides both as barrier for pathogens and sanitizes the wound by actively killing the pathogens.



Best in Class Exudate & Moisture Management

Theruptor consists of a 3-D Knitted Hydrocellular textile substrate made of PET and PU that allows for superior exudate management through wicking while providing moisture on the wound surface for faster healing

Non Leaching & Non Toxic

The 3D substrate is permanently bound and cross polymerized –cross linked with “Dimethyl tetradecyl [3-(trimethoxy silyl) propyl] ammonium chloride” (DTAC) that is immobilized on the substrate and does not leach out of the dressing. The device acts as a physical barrier to outside contaminants and does not act on the surface or interior of the wound nor does it contain antimicrobial agents that act on the body

99.99% Anti-Microbial activity

Theruptor has a 4 log reduction against Gram +ve, Gram -ve bacteria, fungi and yeast. It has a proven efficacy against MRSA and is Non-Resistant to opportunistic pathogens

Healing the World

**40%
Faster**

THERUPTOR

BARRIER DRESSING



Animal study was conducted for Theruptor on small animals (Sprague Dawley Rats) for Excision wounds as well as infected wounds with S.aureus. Comparator dressings of Bioguard (product of DermaSciences (3M) and 3-D Therabond Anti-microbial Silver Dressing (product of Argentum Medical LLC) were also studied. Theruptor achieved 90% wound contraction over the control group at the end of 14 days.

With respect to infected wounds, Theruptor achieved a wound contraction of 60% as compared to the control group. In both excision wound and infected wound dressings, Theruptor achieved at least 40% faster healing than the comparators.

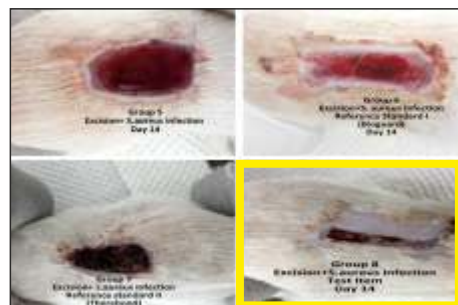
Theruptor Wound Dressing is highlighted in yellow



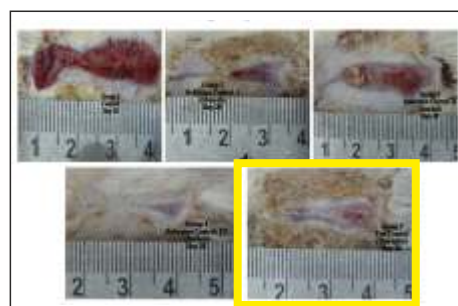
Excision Study at Day 0



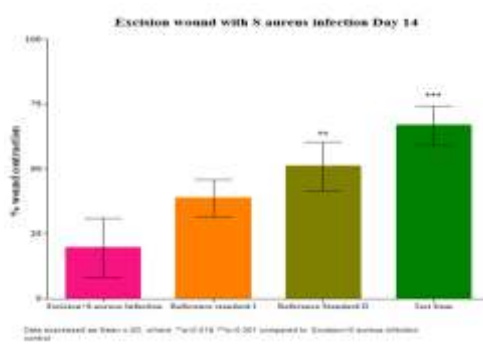
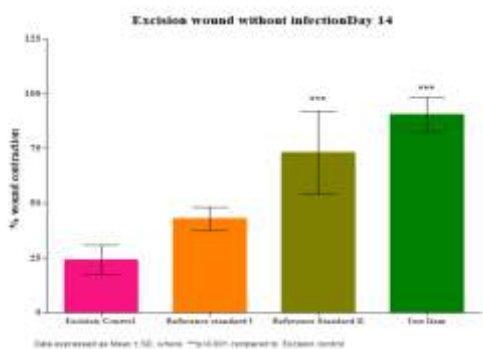
Excision Study at Day 14



Infected Wound Study at Day 14



Diabetic Wound Study at Day 28



Diabetic Wounds

A study on wound healing effect of Theruptor was conducted on an experimentally induced diabetic rat model. Comparators were Maxorb Ag (Medline), Kendall pHMB (Covidien) and Purilon gel (Coloplast). Theruptor was significantly superior in its efficacy (12.%, 49.7%, 83.4% & 98.8%) on days - 7, 14, 21 & 28 respectively, as compared to untreated control. Its efficacy was comparable to Purilon gel & Maxorb while superior to Kendall dressings.

99.99% reduction of a broad spectrum of pathogens including MRSA

Method of Action

Theruptor consists of cationic sites bound to it permanently. The cationic sites are present in all directions and attract -vely charged pathogen. The cationic shields attracts pathogen cells and bind rapidly to the cellular envelope & physically dirrupt the cell wall structures. This leads to lysis and disruption of the cell leading to the killing of pathogen.

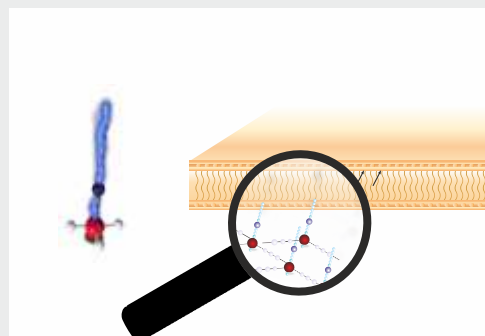
The cation structure is made of a long chain of carbon atoms attached to a positively charged nitrogen which in turn is attached to a Silica that is cross linked and covalently bonded. Cationic Sites are created because of the covalent bond formation and cross linking of DTAC and the 3-D substrate using a novel method of manufacturing. This bonding makes DTAC immobilized on the substrate and provides continous reduction of microbial load on the surface of the wound as well as on the exudates.

PERCENTAGE KILL RATE OF MICROORGANISM AS PER STANDARD ASTM 6329-98

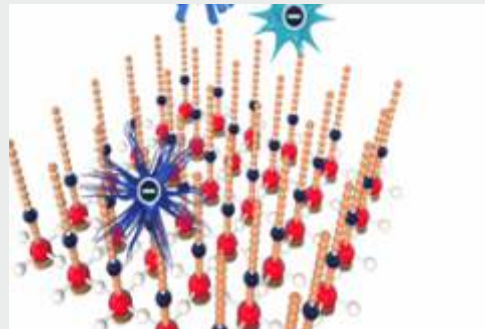
TEST STRAINS	INOCULUM STRENGTH	TEST MATERIAL Area	1 min	10 min	30 min
Staphylococcus Aureus	1.06×10^6 CfU per 0.5 ml	1 sq inch	99.47%	99.9 %	99.99%
Escherichia Coli	1.06×10^6 CfU per 0.5 ml	1 sq inch	99.48%	99.98%	99.99%
MRSA - Methicillin Resistant Staphylococcus Aureus	1.02×10^6 CfU per 0.5 ml	1 sq inch	99.52%	99.98%	99.99%

BIOCHEMICAL PROPERTY OF THERUPTOR CONDUCTED USING ASTM E2315-03

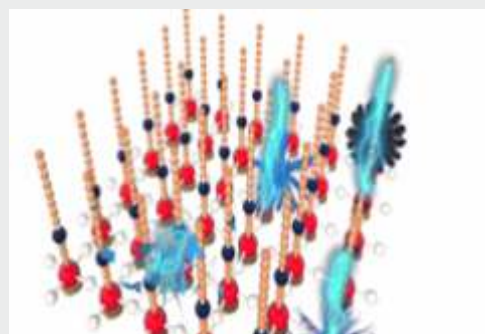
S.NO	Test Organisms	% of Reduction			
		1 hour	4 hour	24 hour	48 hour
1	Staphylococcus aureus ATCC 6538	99.99	99.99	99.9999	99.9999
2	Listeria monocytogenes ATCC 19115	99.99	99.99	99.9999	99.9999
3	Enterococcus faecalis ATCC 29212	99.99	99.99	99.9999	99.9999
4	Escherichia coli ATCC 25922	99.99	99.99	99.9999	99.9999
5	Pseudomonas aeruginosa ATCC 15442	99.99	99.99	99.9999	99.9999
6	Klebsiella pneumoniae ATCC 4352	99.99	99.99	99.9999	99.9999
7	Candida albicans ATCC 10231	90	90	99.9999	99.9999
8	Aspergillus niger ATCC 6275	90	90	99.9999	99.9999



Theruptor consists of +vely charged cationic sites with a long chain of carbon atoms attached to +vely charged nitrogen



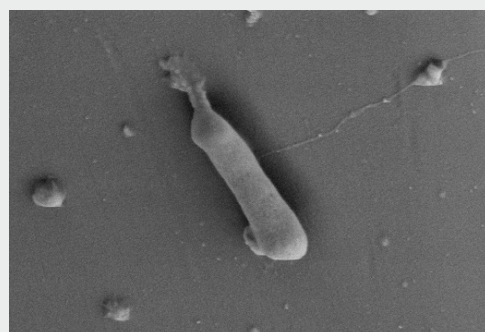
-vely charged pathogens are attracted by the cations on Theruptor



The cell membranes of pathogens are disrupted & destroyed by lysis



Electron Microscope of Bacteria on Theruptor



Electron Microscope of lysis of Bacteria on Theruptor