

GELITA-CEL[®]



**Antibacterial
properties**



GELITA[®]
MEDICAL

Complete Care! Completely Safe!

GELITA-CEL®

GELITA-CEL® is GELITA MEDICAL's superior range of proven natural and safe hemostats made of biodegradable 100 % organic-oxidized cellulose extracted from natural alpha-grade cotton. GELITA-CEL® hemostats are for general use. They stop capillary, venous and arteriole bleeding effectively where conventional methods are either ineffective or impractical. Oxidized cellulose (OC) exhibits hemostatic and antimicrobial activity when applied to the surface of a wound. In addition, the low pH exhibits antibacterial properties, hence minimizing the risk of infection.

BACKGROUND

The GELITA-CEL® product range of STANDARD, FIBRILLAR and X-SORB variants has demonstrated significant antibacterial efficacy against a wide range of Gram-positive and Gram-negative organisms. Extensive investigations have confirmed a statistically significant reduction in the growth of antibiotic-resistant bacteria such as MRSA, VRE and PRSP of more than 99.99 %. The investigations were performed on more than 30 bacterial strains including staphylococcus, streptococcus, pseudomonas, klebsiella, E. coli and a number of others. Overall, the results of the studies have proven the clear antibacterial effect of the GELITA-CEL® products on a wide range of bacteria.

METHODS

The tests were carried out according to ASTM E2149 "Standard Test Method for Determining the Antimicrobial Activity of Immobilized Antimicrobial Agents under Dynamic Contact Conditions, Method 11".

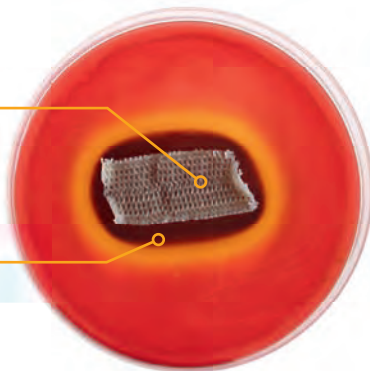
Five parallel tests were carried out on each test organism. The efficacy criterion was a reduction factor ≥ 3.00 after a contact time of 24 hours. The reduction factors (RF) were calculated in relation to the colony-forming units (CFU) per mL of the inoculum: $RF = \log_{10}(\text{inoculum cfu per mL}) - \log_{10}(\text{cfu per mL after 24 h in suspension})$.

TESTED SAMPLES:

GELITA-CEL® STANDARD: Batch number 540 039/12, 507 049/12c
GELITA-CEL® X-SORB: Batch number 610 005/12c
GELITA-CEL® FIBRILLAR: Batch number 708 010/12c, 710 011/12c

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Antimicrobial Activity



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TEST CONDITIONS:

Growth medium, bacteria (TSA): Trypticase-soy agar
Growth medium, fungi (MEA): Malt extract agar

A clear antibacterial effect was demonstrated against the following microorganisms:

Staphylococcus aureus	Staphylococcus aureus MRSA
Staphylococcus epidermidis	Streptococcus pneumoniae PRSP
Micrococcus luteus	Acinetobacter baumannii
Streptococcus pyogenes Group A	Bacillus cereus
Streptococcus salivarius	Enterococcus hirae
Escherichia coli	Lactobacillus plantarum
Klebsiella pneumoniae ESBL	Lactococcus lactis
Serratia marcescens	Moraxella cartarrhalis
Corynebacterium xerosis	Morganella morganii
Clostridium perfringens	Propionibacterium acnes
Bacteroides fragilis	Proteus hauserii
Enterococcus faecium	Shigella boydii
Enterococcus faecium VRE	Streptococcus algalactiae
Enterobacter cloacae	Stenotrophomonas maltophilia*
Pseudomonas aeruginosa	Streptococcus uberis**
Pseudomonas stutzeri	Brevundimonas diminuta
Proteus mirabilis	

RESULTS:

The organisms were significantly inactivated ($RF > 3.00$) by the test preparation.

CONCLUSION:

According to test report No. L12/262.A***, the results showed antimicrobial activity after an exposure time of 24 hours. Significant antibacterial efficacy against a wide range of Gram-positive and Gram-negative organisms can be considered proven.

***Full test results available on request.

