



Provilan[®] **NORDIC**

**RESEARCH STUDY
PROBIOTIC INFECTION PREVENTION**



Probiotic Bacteria Have a Positive Effect Against E. Coli Bacteria **Plant-Based 'Good' Bacteria Eliminate Pathogenic Bacteria that Cause Infections**

KEY FINDINGS:

- **PLANT-BASED PROBIOTIC 'GOOD' BACTERIA ELIMINATED 100% OF PATHOGENIC E. COLI BACTERIA.**
- **BENEFICIAL IMPLICATIONS FOR INHIBITING E.COLI RELATED INFECTIONS IN FITNESS AND WELLNESS ENVIRONMENTS.**

The Study

Probiotic Group laboratory carried out a study to prove that non-pathogenic probiotic bacteria have a positive effect against pathogenic Escherichia coli bacteria. Two tests were made with four E. Coli petri film plates containing differing volumes of bacteria. A sample consortium of diatoms (algae from domestic use contaminated water) was blended with a sample of the probiotic bacteria, then added to each petri film containing the E. coli.

Test 1: 4ml probiotic bacteria and 4ml diatoms. 140 colonies (CFUs) counted on film plate pre-treatment.

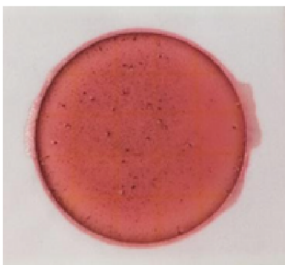
Test 2: 3ml probiotic bacteria and 5ml diatoms. 320 colonies (CFUs) counted on film plate pre-treatment.

The plates were incubated for 24 hours at 37°C and then visually examined. Standard laboratory methods were used for efficient detection and enumeration.

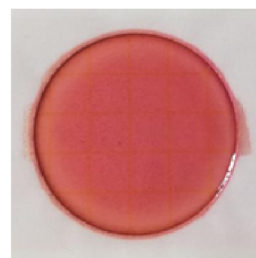
The Result

Test 1: The probiotic bacteria and diatoms had eliminated all of the 140 pathogenic colonies.

Test 2: The probiotic bacteria and diatoms had eliminated all of the 320 pathogenic colonies.



Test Two – Before
Petri film plate with 320 pathogenic colonies of E. coli bacteria before addition of probiotic bacteria



Test Two – After
Petri film plate with zero pathogenic colonies of E. coli bacteria after addition of probiotic bacteria

The Conclusion

These results prove that the non-pathogenic probiotic bacteria eliminated all E.coli colonies contained in the consortium of diatoms, even when the volume of probiotic bacteria was lower compared with the volume of diatoms. This significant result is particularly relevant to the presence of necrophagous bacteria (that eat dead and decaying flesh) and phage bacteria in the solution.



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LUCAA+ WOUND/DERMO CARE SPRAY - REDUCES MRSA BY 99% WITH PROBIOTICS AND WITHOUT ANIBIOTICS

KEY FINDINGS:

- **LUCAA+ PET WOUND CARE SPRAY REDUCED THE MULTI-DRUG RESISTANT BACTERIA OF THE SPECIES STAPHYLOCOCCUS AUREUS (MRSA) FROM 100,000 TO 100 COLONY FORMING UNITS (CFU) WITHIN 22 HOURS**
- **HIGHLY EFFECTIVE RESULTS WITH ZERO CONTRIBUTION TO ANTIMICROBIAL RESISTANCE**



The Study

The Luxembourg Institute of Science and Technology (LIST) carried out an independent laboratory study to measure the effectiveness of LUCAA+ Pet Wound/ Dermo Care Spray.

TEST 1: THE EFFECT OF A SPRAY ON THE PASSAGE & SUEVIVAL OF PROBIOTIC BACTERIA

Equal amounts of LUCAA+ Pet Wound/Dermo Care were extracted from the bottles:

- (a) Using the spray and
- (b) using an automatic pipette



The Result: there is no difference in Bacillus growth between (a) & (b)

TEST 2: THE COMPETITION BETWEEN BACILLUS CONSTITUTING BIOMASS (PROBITOICS) & A REFERENCE STRAIN OF STAPHYLOCOCCUS AUREUS

Bottles containing contaminated ingredients only (with no probiotics) were treated by filtration to remove contaminating bacteria. A pathogenic bacterium of Methicillin Resistant Staphylococcus Aureus (MRSA) (100,000 colony forming units per petri dish) was placed on a synthetic skin on top of petri dishes containing a nutrient-free Agar gel medium, and sprayed with:

- (a) 1x spray and (b) 3x sprays of LUCAA+ Pet Wound/Dermo Care. The petri dishes were incubated for 22 hours at 37 degrees to simulate real life temperature conditions of animal skin.

The Result

The contaminated ingredients alone without probiotics: no inhibition of pathogenic bacteria. ingredients sprayed with (a) 1x spray and (b) 3x sprays of LUCAA+ Pet Wound/Dermo Care: Both achieved a 99% reduction of the pathogenic bacteria within 22 hours.

The researcher states: The LUCAA+ products produce a very significant drop in Staphylococcus Aureus (>3 log unit CFU.m⁻¹). The study showed that the inhibitory effect of LUCAA+ is due to the probiotic agents.

LUCAA+ product is a high effective alternative to antibiotics for animals.