Assessment of Bactericidal Potential of Askina® Calgitrol® Ag Dressings

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Objective
To test the bactericidal potential of Askina® Calgitrol® Ag dressings on the following microorganisms: Staphylococcus aureus, Escherichia coli and Candida albicans

Method
To visualise bacteria and assess their growth characteristics, cell populations were stained using the LIVE/DEAD® BacLight™ bacterial viability kit (Molecular Probes; Invitrogen). The kit consisted of two fluorescent dyes, SYTO 9 (green) and Propidium Iodine (red), pre-aliquoted in sealed plastic pipettes. The bacteria (Candida albicans ATCC2091; Escherichia coli ATCC 8739 and Staphylococcus aureus ATCC 6538P) were stained with the dye mixture and incubated on Askina® Calgitrol® Ag.

When the bacteria are alive or viable they fluorescence green; they change to red if the bacteria wall is damaged; hence dead or dying bacteria are stained red. At specific time intervals (0, 1, 2, 3, 4, 12 and 24 hours) the dressing was observed and scanned using a Leica TCS AOBS confocal laser scanning microscope.

Cell counts for live (green) and dead (red) micro-organisms were performed using Image J Software and were based on 10 images per time point. The values are expressed as percentage viability for each time point.

Results
After a 12 hour incubation period there were high levels of bacterial mortality, at 24 hours there was close to 100% cell death in all cultures.

Conclusion
Askina® Calgitrol® Ag wound dressings are able to immobilize bacteria within a 24 hour period.

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<th>Micro-organism viability (%) on Askina® Calgitrol® Ag dressings</th>
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<tr>
<td>C. Albicans</td>
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<td>E. Coli</td>
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<td>S. Aureus</td>
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Improved wound healing
Antimicrobial Activity
Tolerability and Cytotoxicity