

## Assessing different wound dressings on wounded and infected LabSkin

### Objective:

To determine whether an iodine or a silver impregnated wound dressing will cease the penetration of *S. aureus* into the dermal layer in infected and wounded LabSkin.

Additionally, to assess the wound healing properties of the iodine and silver impregnated wound dressing.

### Method:

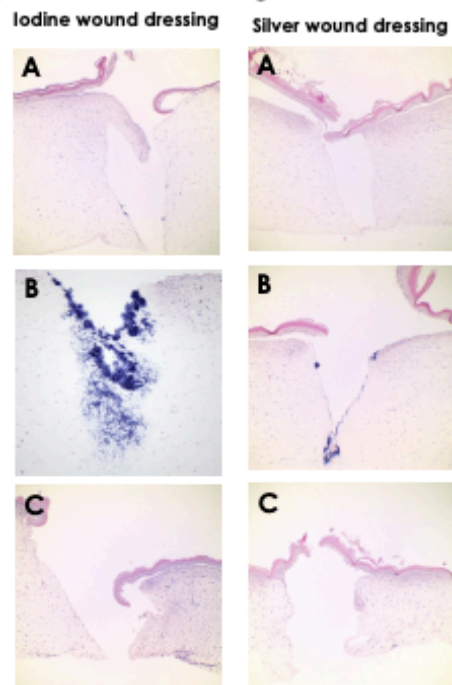
- Each LabSkin sample was wounded with a scalpel blade, some samples were then immediately infected with *S. aureus*.
- All samples were incubated for 24h.
- After 24h, some samples had wound dressings applied directly on top of the wound site and then incubated for another 24 h ready for analysis.
- Samples were assessed by histology where they were sectioned (5 µm) and stained with haematoxylin and eosin (H&E).

### Results:

- Both the iodine and silver impregnated wound dressing reduced the *S. aureus* penetration into the dermis after 24h incubation compared to the samples without the wound dressing.
- The iodine wound dressing prevented keratinocyte migration into the wound site whereas, the silver impregnated wound dressing did not affect keratinocyte migration.

### Results cont.:

**Figure 1** - H&E images of LabSkin inoculated with *S. aureus* for 24 h and then a wound dressing applied for 24 h. (A) H&E images of LabSkin inoculated with *S. aureus* and treated with wound dressing, (B) H&E images of LabSkin inoculated with *S. aureus* and (C) H&E images of LabSkin cultured with just the wound dressing.



### Summary:

Both types of wound dressing did reduce the *S. aureus* infection into the dermal layer thus, reducing the cytotoxic effect of the bacteria.

The iodine wound dressing hindered keratinocyte migration compared to the silver impregnated wound dressing.

Therefore, the silver wound dressing may be more beneficial to aiding the wound healing process in an infected wound environment.

