Release of pro-inflammatory cytokines IL-1α and IL-23 by Labskin after colonization with several microbes

LabSkin
SKIN SCIENCE

Objective:

To quantify the release of Interleukins IL-1α and IL-23 by Labskin. Comparisons will be made between uncolonised Labskin and Labskin colonised with *S. aureus* (after 6 and 24h post-inoculation), *S. epidermidis*, *C. albicans*, *P. acnes*, 3x mix Normal microflora and wounds infected with Interkingdom Biofilms.

Method:

- Unwounded Labskin were colonised with *S. aureus*, *S. epidermidis*, *P. acnes*, *C. albicans* or a mix of normal skin microflora and incubated for 24 hours. Labskin medium was taken after 24 hours and the amount of cytokines assessed by ELISA.
- Wounded Labskin were infected with 3 mixes containing different numbers of *S. aureus* and *C. albicans*. Labskin medium was taken after 24 and 48 hours for cytokine assessment.

Results:

- A small amount of **IL-1α** was detected after 24 hours but only in those Labskin colonised by *C. albicans* or *P. acnes* A small amount of **IL-23** was detected after 24 hours when Labskin was colonized with individual microbes. However, when Labskin was colonized by the mix of three microbes that amount was increased from less than 10 pg/mL up to 40 pg/mL.
- All wounded Labskin produced high levels of **IL-1α** increasing with the number of microbes added. A small amount of **IL-23** was detected in uninfected wounds. All infected wounds produced high levels of **IL-23** increasing with the number of microbes added.

Results cont.:

Figure 1 - Comparison between **IL-1α** and **IL-23** production by Labskin[1,1] colonised with several microorganisms.

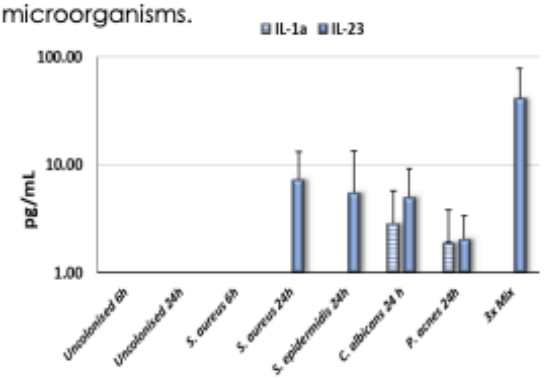
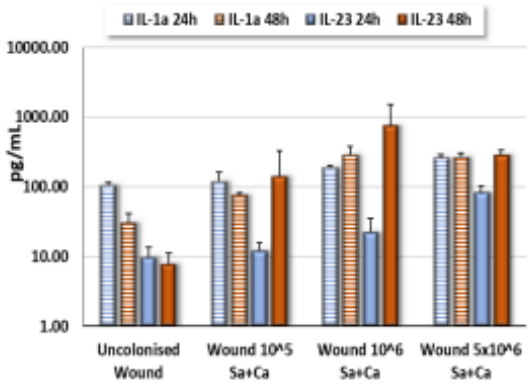


Figure 2—Comparison between **IL-1α** and **IL-23** production by wounded Labskin4.5 infected with a mix of *S. aureus and C. albicans*.



Summary:

In conclusion, **IL-23** production has shown to be regulated by the number and species of micro-organisms in contact with Labskin, whereas **IL-1α** is more likely regulated by a different type of insults.

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