

Application Note | Microbiology of tampons

Assessing the safety of hygienic tampons through effects on the growth of the normal vaginal microflora and the production of TSST-1 by *Staphylococcus aureus*

OBJECTIVE

An *in vitro* safety assessment of tampon material evaluated by the effect on the growth of the normal vaginal commensal *Lactobacillus acidophilus* and the growth and TSST-1 production by pathogenic *Staphylococcus aureus*.

RESULTS

Figure 1 - Growth of *Staphylococcus aureus* in the presence of test tampon material

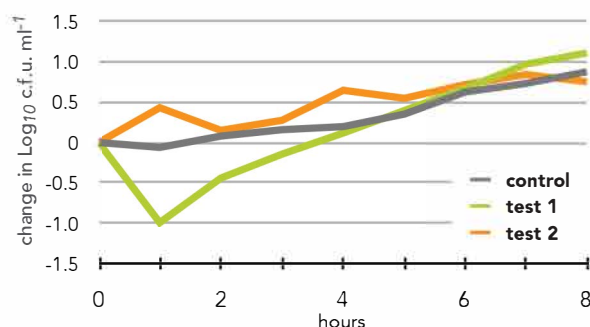
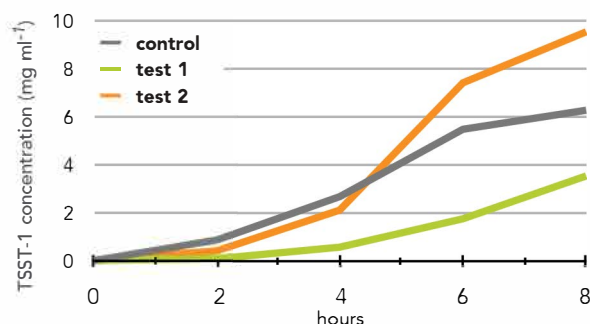


Figure 2 - TSST-1 in culture supernatants of *Staphylococcus aureus* in the presence of test tampon material



METHODS

- Materials were incubated in liquid cultures of *Lactobacillus acidophilus* and *Staphylococcus aureus* for 24 hours.
- Growth was assessed at regular intervals by culture optical density and viable cell counts. The effect of growth on culture pH was also monitored.
- Samples were taken at regular intervals and processed for the assessment of Toxic Shock Syndrome Toxin 1 (TSST-1).
- TSST-1 was quantified using a validated in-house ELISA.

Figure 3 - Growth of *Lactobacillus acidophilus* in the presence of test tampon material

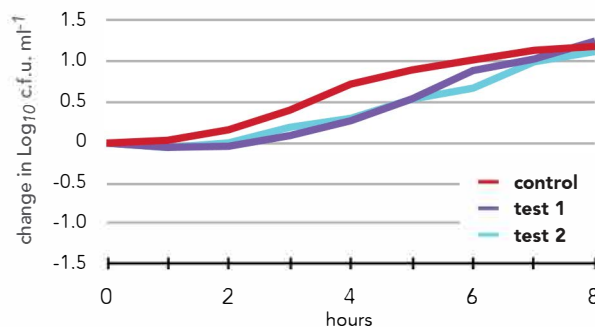
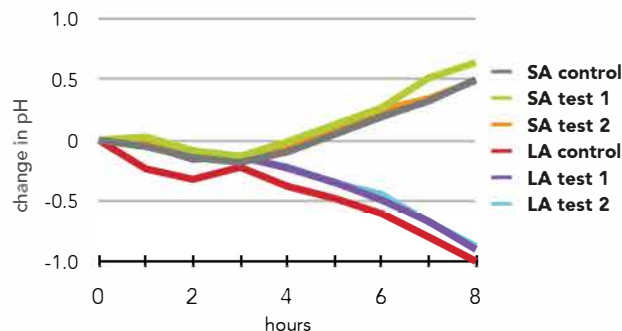


Figure 4 - Change in growth medium pH for *S. aureus* (SA) and *L. acidophilus* (LA) in the presence of test tampon material



SUMMARY

Assessment of the growth and bioactivity of vaginal commensal and pathogenic microorganisms can be used to support safety claims for hygienic tampons benchmarked against existing products.

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