**INTRODUCTION**

The microbial species that inhabit the vaginal tract play an important role in the maintenance of health and prevention of infection. The microbiota of healthy premenopausal women is generally dominated by lactobacillus species, that help to protect the vaginal mucosa against infections. The vaginal microflora regulates the epithelial innate immunity in a species- and strain-specific manner, and topically applied microbicides may alter both the bacterial and epithelial components of this homeostatic interaction. The use of intimate products containing surfactants may alter the vaginal microflora and the tissue homeostasis [1-3].

**AIM**

The aim of this study was to develop an original in vitro model of reconstituted human vaginal epithelium able to mimic the in vivo vaginal tissue and its commensal flora, providing a realistic model in terms of physiological response to intimate hygiene products exposure. This model is proposed as a predictive assay for the safety assessment of surfactants and cosmetic products intended for use in the external intimate hygiene, in order to comply with the Cosmetic Regulation (EC) No 1223/2009.

**MODEL SETUP: BACTERIA-HOST INTERACTION**

The bacterial colonization and the maintenance of tissue homeostasis after inoculum was analyzed up to 72 h. Cellular viability by Alamar blue, barrier function and fence properties by Trans Epithelial Electrical Resistance (TEER), barrier permeability flux by modification of Lucifer Yellow paracellular passage were assessed. A bacterial load count was also evaluated (data not shown).

**MODEL VALIDATION WITH INTIMATE HYGIENE PRODUCTS: MILDNESS ASSESSMENT**

After complete colonization, tissues were treated with two different intimate hygiene formulations (Product A and B) having different mildness properties (A more aggressive than B). The products were diluted at 5%, to mimic realistic use conditions by simple wash. To evaluate the mildness of tested products both at bacterial or tissue level, the products were tested 16 h after inoculum (homeostatic status).

**CONCLUSIONS**

Results demonstrated that this model is able to discriminate cosmetic formulations in terms of mildness and bacteria-host interaction. In conclusion, we propose *Lactobacillus* sp. colonized RHV as a promising model to assess the tolerance and safety of intimate hygiene cosmetic products not only at the mucosal epithelium level, but also in respect to the bacterial ecosystem.