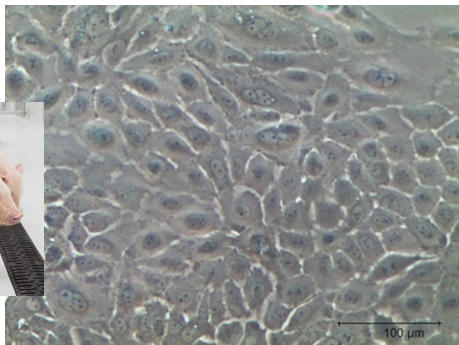


PRIMARY CULTURES OF GÖTTINGEN MINIPIGS MAMMARY EPITHELIAL CELLS AS *IN VITRO* MODEL TO STUDY EPITHELIAL BARRIER FUNCTIONALITY

Objective Develop an *in vitro* model to conduct drug permeability studies through epithelial barrier, in compliance with the 3Rs principle [1].

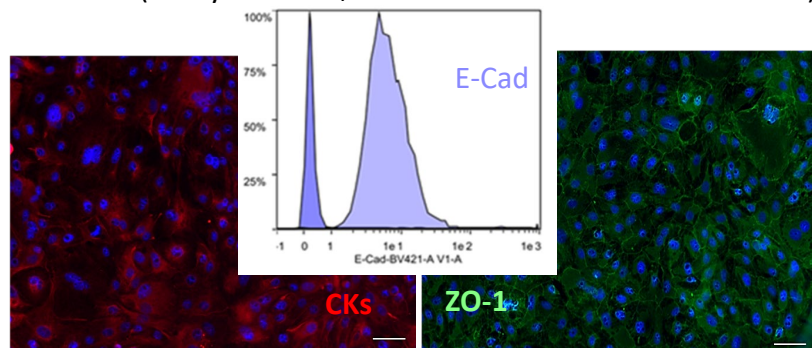
Materials and Methods The epithelial monolayer formed by primary cell lines isolated from Göttingen Minipigs mammary gland (mpMEC)s [2] was tested for integrity by trans-epithelial electrical resistance (TEER) and sodium fluorescein transport (SF).

Results

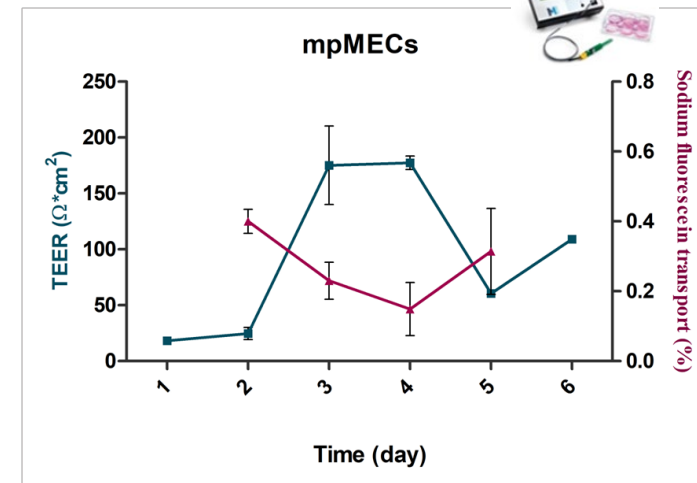


mpMECs isolated showed an epithelial cobblestone-like morphology and growth in adherent clusters.

The cells were confirmed to express epithelial and junctional markers (i.e. cytokeratin, zonula occludens-1 and E-cadherin).



mpMECs were able to form a compact epithelial monolayer in days 3 and 4 of culture



Conclusions The culture conditions allow to conduct mammary epithelial barrier studies useful for the rapid screening of drugs in the minipig.

Future Proposal A more complex 3D *in vitro* culture system, providing a more physiology-relevant model microenvironment will be developed.

Period Abroad/at Company Three months (march-may) 2022 – KU Leuven University (Belgium).

References

[1] Russel and Burch. The Principle of Humane Experimental Technique, 1959.

[2] Bernardini C. et al. Development of a Pig Mammary Epithelial Cell Culture Model as a Non-Clinical Tool for Studying Epithelial Barrier—A Contribution from the IMI-ConcePTION Project, Animals, 2021

