

Personalised Medicine Seminar

Wednesday 5 May 2021 at 10.00 – 11.00



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Title:

Multiscale imaging of basal cell dynamics in the lactating mammary gland.

Abstract:

Breast milk has been referred to as the first personalized medicine. In addition to supplying the newborn with fats, minerals, proteins and carbohydrates for optimal growth, a mother's milk also contains immune cells, antibodies, prebiotics and other factors that help to shape infant's immune development. Despite its importance for human health and mammalian survival, however, the biology of lactation remains poorly understood.

Using multi-scale imaging and novel genetically-engineered mouse models, my team has been able to observe alveolar contractions in the functionally mature mammary gland. We have shown that specialized epithelial cells, which possess the ability to behave like smooth muscle cells, undergo calcium-dependent contractions. Our work demonstrates that individual oscillators can be electrically coupled to achieve global synchrony, a phenomenon that has not yet been observed in this tissue. By imaging activity across scales, our research is providing a window into the organization, dynamics, and role of epithelial calcium oscillations in the organ principally responsible for sustaining neonatal life in mammals. By characterizing how these cells function under physiological conditions, our research is also providing new insights into how signal transduction may be altered in disease and offers a new framework to explore this.

Online via Zoom

Please find Zoom link via the Outlook calendar invitation. If you haven't received the invitation, please write an e-mail to: anne@biomed.au.dk.