

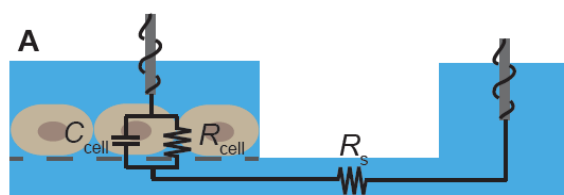


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A breast-on-a-chip as a model system for studying cancer growth and metastasis



Background

Breast cancer imposes the highest healthcare costs (€6.7 billion, 13%) and second highest economic burden (€15 billion, 12%) of all cancers. Cancer metastasis causes 90% of all cancer deaths. However, the biology behind it is not clear because the standard two-dimensional cell culture does not represent the real *in-vivo* microenvironment crucial for metastasis.

Goal of the project

To overcome this technological bottleneck, we will combine Lebanon-made organoid (Mhanna Group) and an electrochemical tool developed in Switzerland (Sugihara Group) for fabricating the first prototype of a “breast-on-a-chip”. The novelty is that we carefully mimic the shape and the mechanics of the milk duct structure using non-traditional circular porous membranes where metastasis is allowed. We also couple the visually assessable ducts to electrochemical measurement to obtain quantitative outcomes of cell metastasis.

How to apply

Please contact Kaori Sugihara if you are interested in the project for your internship or Master thesis.