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Metastasis on-a-chip platform to follow in real-time the extravasation process and collect extravasated cancer cells

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► To cite this version:

Aude Sivery, Flavie Woesteland, F. Soncin, Xuefen Le Bourhis, A. Treizebre, et al.. Metastasis on-a-chip platform to follow in real-time the extravasation process and collect extravasated cancer cells. OncoLille Workshop, Jan 2024, Lille, France. hal-04547891

HAL Id: hal-04547891

<https://hal.science/hal-04547891v1>

Submitted on 16 Apr 2024

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Metastasis on-a-chip platform to follow in real-time the extravasation process and collect extravasated cancer cells

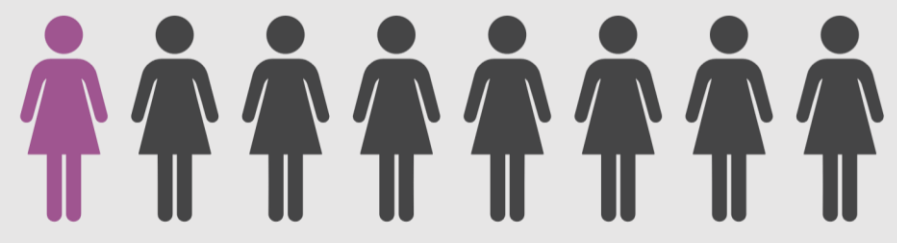
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 2: Univ. Lille, CNRS, Inserm, CHU Lille, Centre Oscar Lambret, UMR9020 - UMR1277 - Canther - Cancer Heterogeneity, Plasticity and Resistance to Therapies, F-59000 Lille, France.
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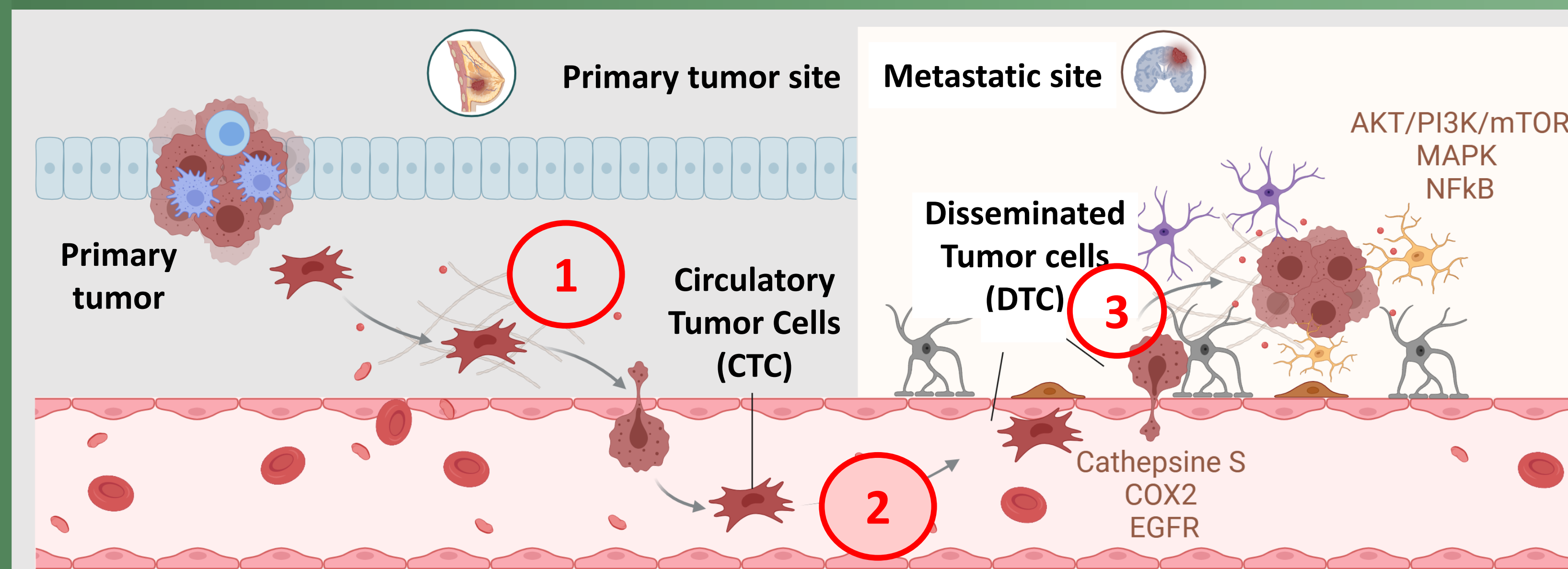
Background: Metastasis in breast cancer

➤ Most diagnosed cancer in the world



➤ 90% of mortality in breast cancer is due to the formation of metastasis

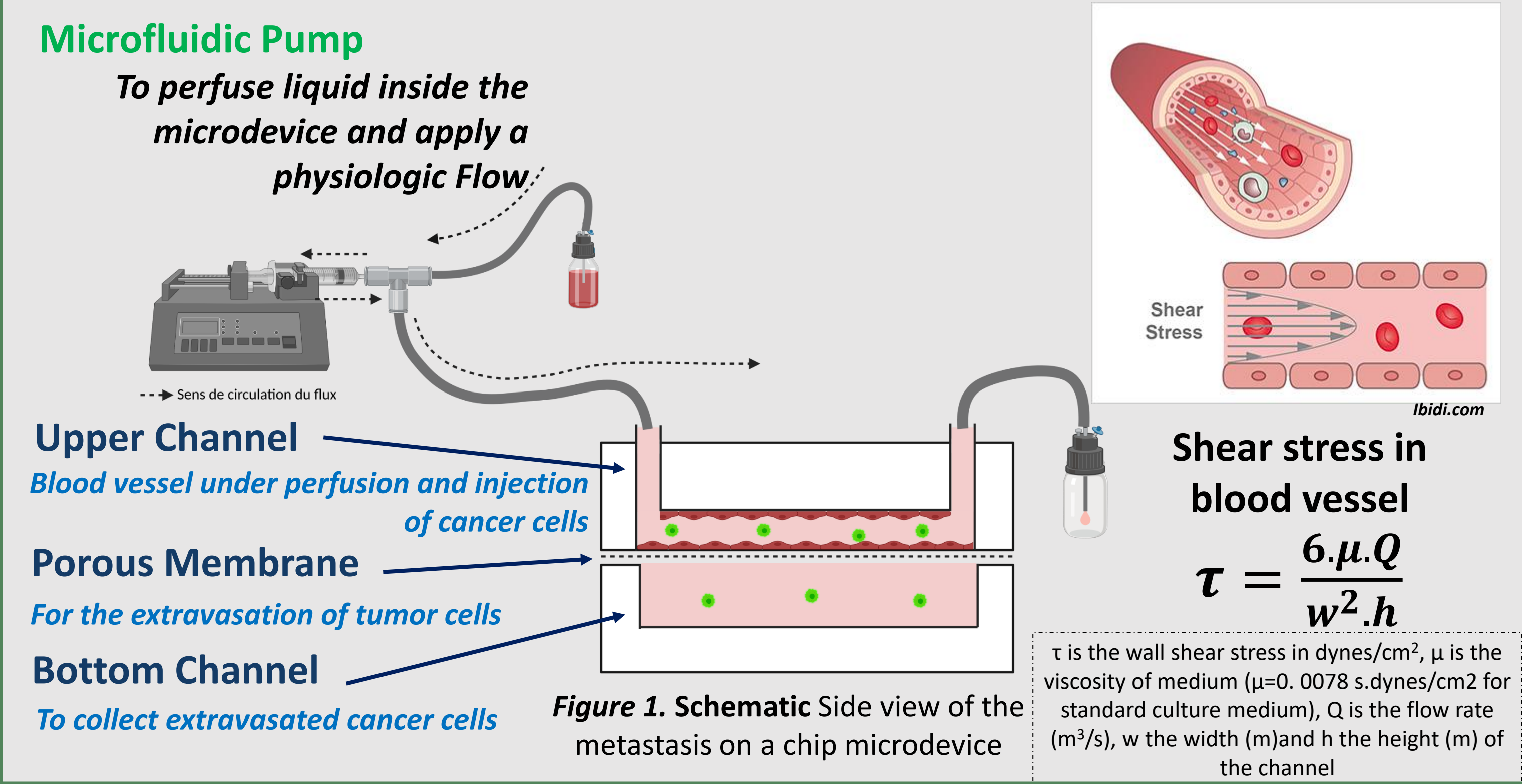
Cancer cells Extravasation: A Highly Dynamic Process



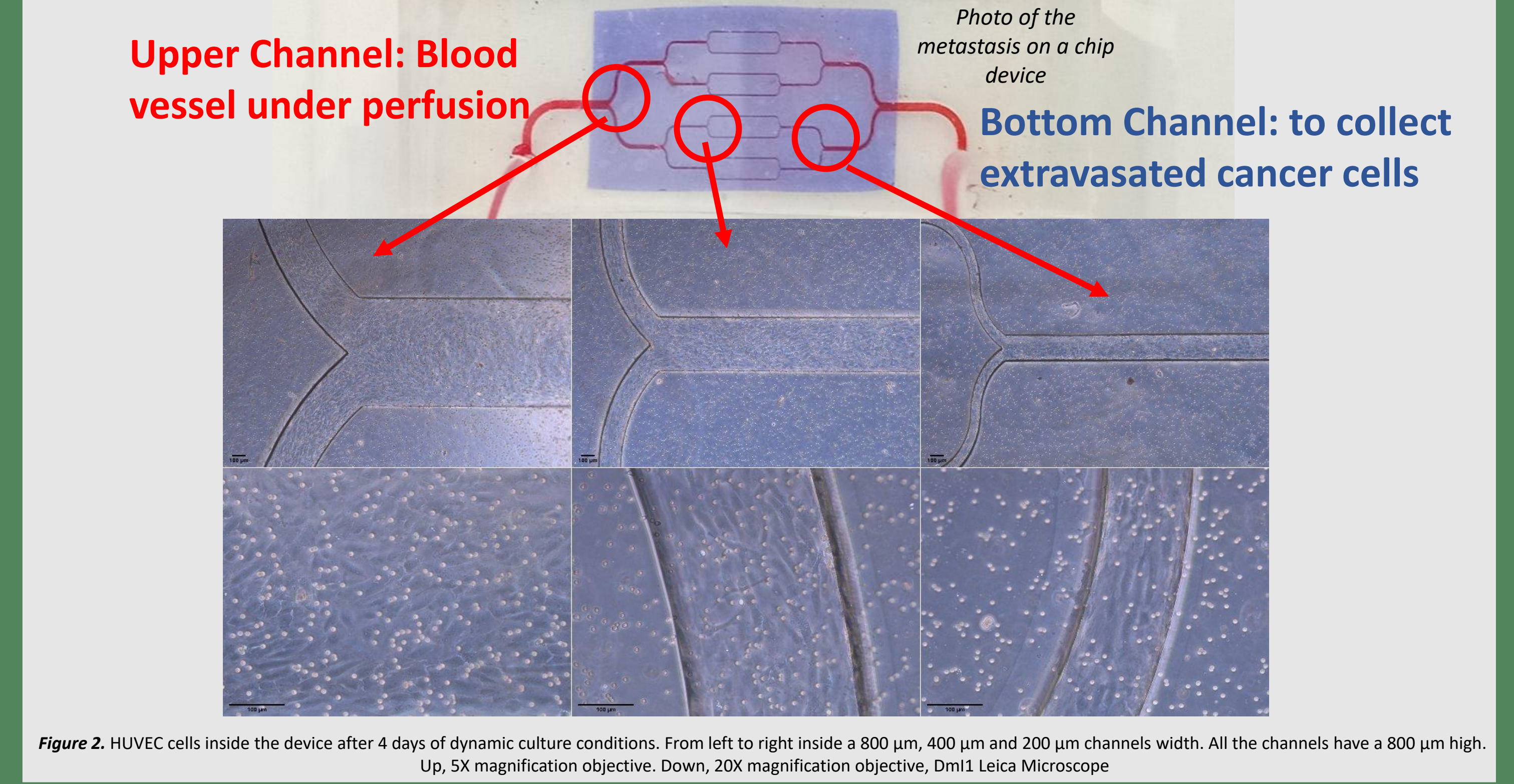
- 1. Intravasation:** Detachment from the primary tumor and entrance in blood circulation
- 2. Distribution:** Flowing inside blood circulation to distant targeted organs
- 3. Extravasation:** Migration through the endothelium wall and exit from blood vessels

Aim of this study: Develop a metastasis on-a-chip platform to follow, collect and characterize tumor cells that are able to extravasate

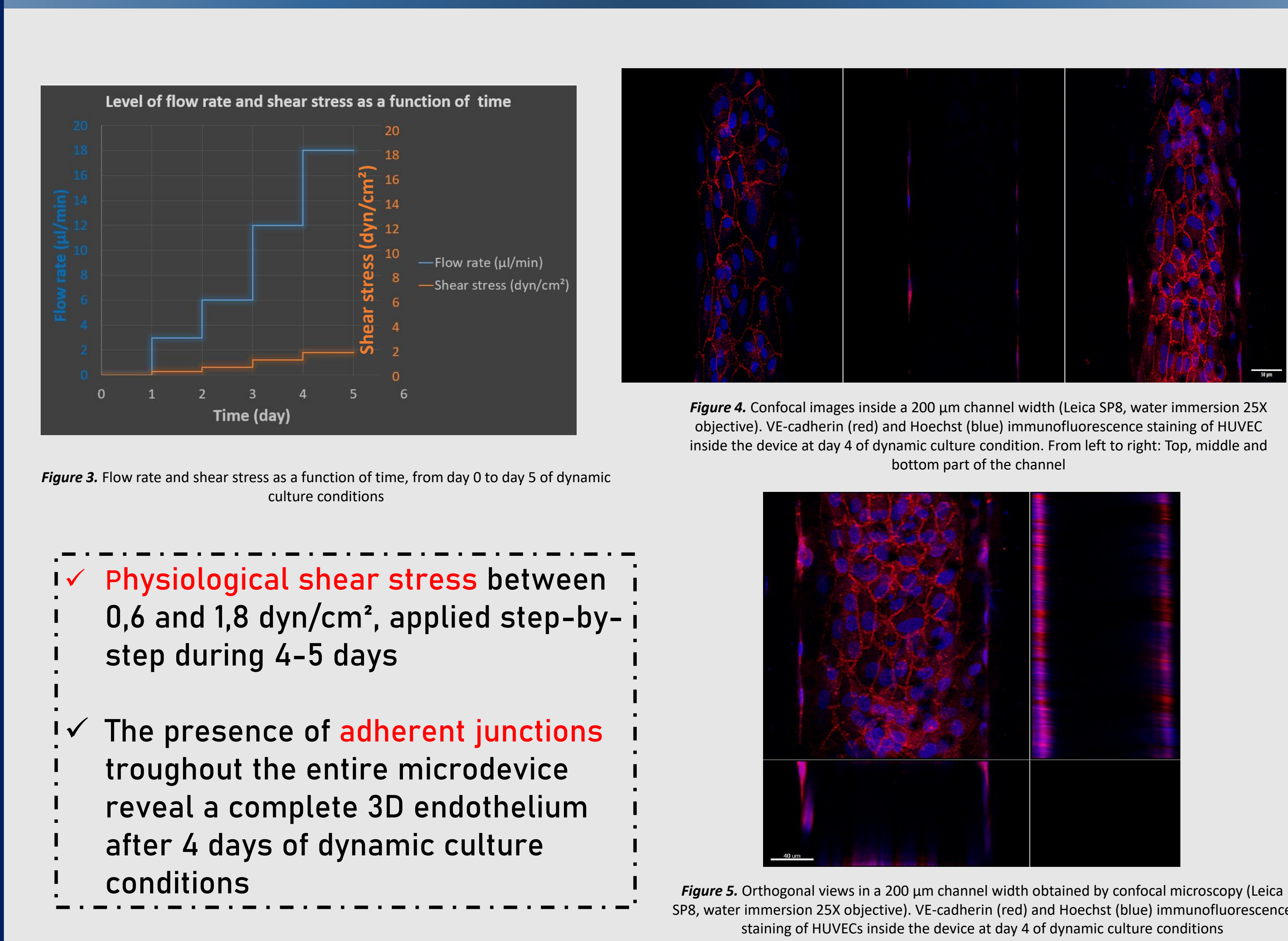
Metastasis on a chip device and microfluidic platform



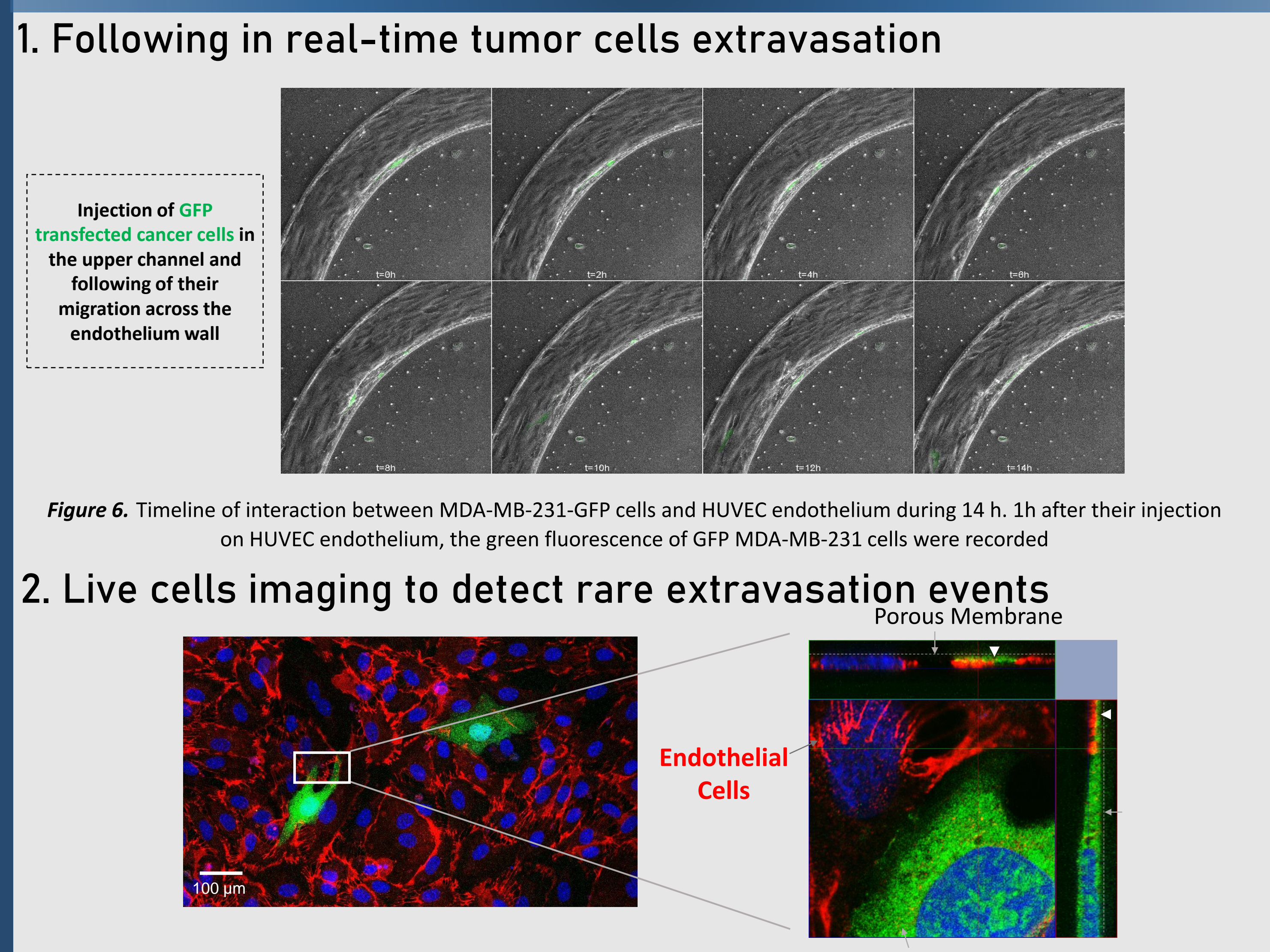
3D Blood vessel in the Metastasis on-a-chip device



Complete 3D endothelium



Follow in real time the extravasation events



Outlooks

- ➔ Modify the collecting channel to a more complex micro-environment in order to mimic specific targeted organs
- ➔ Complete characterization of extravasated cancer cells (stemness, migration, profil...)

CONTACT

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