

## Session 1 or 2

- **Cancer biomarkers using liquid biopsies**
- **Placenta-on-a-chip to measure impact of endocrine disrupting chemicals**

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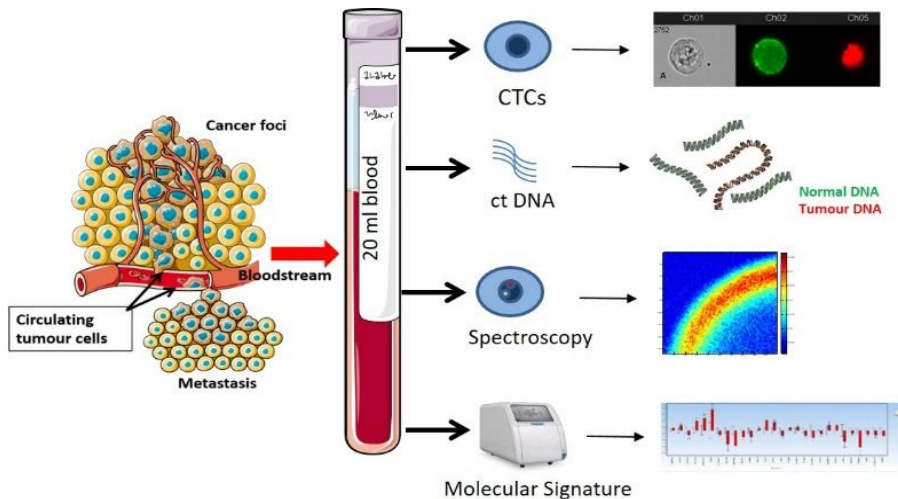
Cancer Biomarker and Cellular Endocrinology Lab

- Published 56 research manuscripts (h-index: 24.0) and presented over 100 research abstracts in leading national and international conferences.
- Dr Karteris' research group (CBCEL) is studying how to use **liquid biopsies as non-invasive biomarkers for diagnostic** or prognostic value for lung and ovarian cancer.
- His group also investigates **responses of steroids and involvement of endocrine disrupting chemicals (EDCs) in female reproduction and cancer**, with emphasis in the mechanistic target of rapamycin (mTOR) pathway.

The main areas of seeking partnerships are:

- a) Development of cancer biomarkers using liquid biopsies
- b) Develop a placenta-on-a-chip to measure impact of endocrine disrupting chemicals

**SC1-BHC-06-2020: Digital diagnostics – developing tools for supporting clinical decisions by integrating various diagnostic data**



**Figure 1. Multiple uses of Liquid Biopsies for Diagnostic or Prognostic Purposes**

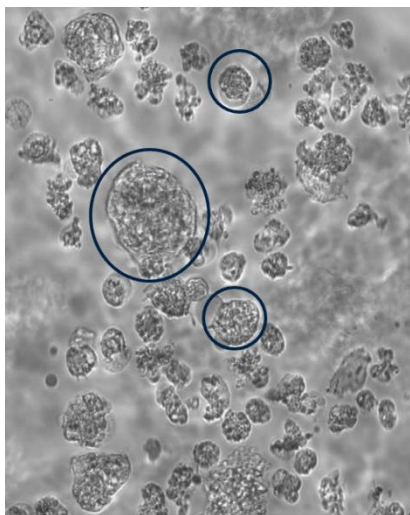
Chudasama *et al.*, *Cancers* (Basel). 2019

- Liquid biopsies offer a promising alternative to tissue samples, providing non-invasive diagnostic approaches or serial monitoring of disease evolution.
- However, certain challenges remain, and the full potential of liquid biopsies has yet to be reached.
- In our lab we use a “holistic” approach to interrogate liquid biopsies using multiple readouts.

- I can offer expertise on high-definition imaging of circulating tumour cells (CTCs)
- I have access to two large clinical trials for ovarian and lung cancer patients in the UK
- We seek partners for a consortium that brings diagnostic testing and clinical decisions together

## SC1-BHC-11-2020: Advancing the safety assessment of chemicals without the use of animal testing

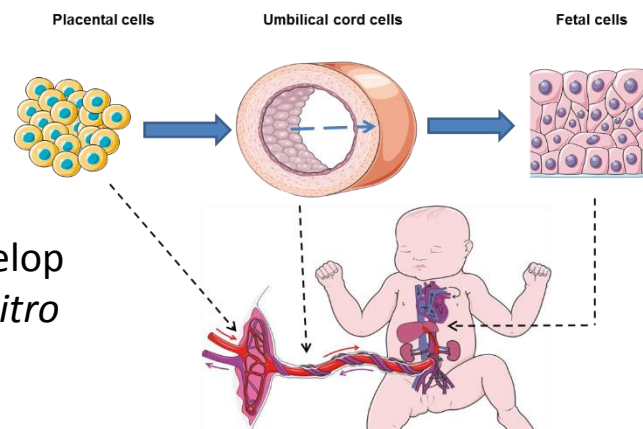
We propose to use a method that utilises human placental cells (or explants) on a 3D bio-scaffold, to provide a good representation of the human placenta to test adverse effects of endocrine disrupting chemicals (EDCs)



Placental cells grown in 3D hydrogel, resembling 3<sup>rd</sup> trimester placenta

- I can offer expertise on setting-up placental explants and placental cells on 3D bioscaffolds
- Expertise on bioinformatics on microarray data analyses from placental cells

- Seeking partners to develop a human fetal-placental *in vitro* model for chemical testing.



# Contact details



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**...on behalf of principal investigator**

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