



NC3Rs Workshop: Human tissue models for cancer research

1-2 March 2017; Central London

Human tissue derived from tumour resection, clinical trial, non-transplantable donation and post-mortem sources represents a vital resource for biomedical research and pharmaceutical development. The rate of progress in developing new drugs to treat cancer has been slow, in part due to over reliance on animal models which are not sufficiently predictive of drug responses in man. The adoption of methods using human tissue has the potential to replace some of these animal models, improving predictivity and reducing animal use.

Chair: Professor Gareth Thomas, University of Southampton

Aims of workshop:

- Bring together cancer researchers working with human tissue and other models to discuss how human tissue is used and what barriers exist to increased uptake.
- Use examples of successful human tissue research to inform participant consideration and discussion on routes to improving predictivity to man
- Define activities for the future which will advance the use of human tissue in cancer research as an alternative to animal modelling.

Themes:

- Engineering the microphysiology of cancer with human tissue
- Fresh human tissue
- Fixed human tissue for research and drug development

Draft agenda - Day 1	
08:30 – 09:00	Registration and Coffee
09:00 – 09:30	Welcome and Introduction <i>Professor Gareth Thomas, University of Southampton (Chair)</i>
09:30 – 10:30	Keynote Lecture - Exploratory approaches to modeling human cancer: examples from the NCI IMAT portfolio <i>Dr Tony Dickherber, Innovative Molecular Analysis Technologies (IMAT) Program, NIH National Cancer Institute</i>
10:30 – 11:00	Coffee and poster viewing
Theme 1: Engineering the microphysiology of cancer with human tissue	
11:00 – 11:30	Tumour on a chip – application of human tissue to replace animal studies <i>Professor John Greenman, University of Hull</i>
11:30 – 12:00	3D bioprinting for brain tumour research <i>Professor Will Shu, University of Strathclyde and Dr Nick Lesley, Heriot-Watt University</i>
12:00 – 12:30	Towards the next-generation of cancer cell lines: derivation of an organoid biobank <i>Dr Hayley Francies, Wellcome Trust Sanger Institute</i>
12:30 – 13:30	Lunch and poster viewing
Theme 2: Fresh human tissue	
13:30 – 14:00	The collection and provision of human tissue for pharmaceutical development in cancer research <i>Mr John Spaul, GlaxoSmithKline</i>
14:00 – 14:30	The application of living tissue to improve predictivity over animal models in cancer research and drug development <i>Dr David Bunton, ReproCELL Europe</i>
14:30 – 15:00	<i>In vitro</i> techniques to reduce the number of animals used in PDX mouse modelling during drug discovery <i>Dr Larrisa Carnevalli, AstraZeneca</i>
15:00 – 15:30	Coffee and poster viewing
Breakout Session 1	
15:30 – 17:00	Current status and definition of barriers to increased use of human tissue in cancer research
17:00 – 17:25	Feedback from breakout session
17:25 – 17:30	Wrap-up of day 1 and overview of day 2 <i>Professor Gareth Thomas, University of Southampton</i>
17:30 ~	Networking reception and voting on topics to take forward to day 2

Draft agenda - Day 2	
08:30 – 09:00	Registration and Coffee
09:00 – 09:10	Welcome and Introduction <i>Professor Gareth Thomas, University of Southampton (Chair)</i>
09:10 – 09:40	Cancer tissue provision in the UK and the role of BBMRI-ERIC <i>Dr Philip Quinlan, UK Clinical Research Collaboration and BBMRI-ERIC</i>
09:40 – 10:10	Edinburgh CRUK centre – human tissue for drug screening consortium <i>Professor Neil Carragher, University of Edinburgh</i>
Theme 3: Fixed human tissue for research and drug development	
10:10 – 10:40	Applying bioinformatics to reduce animal use in cancer research <i>Dr Christopher Woelk, University of Southampton</i>
10:40 – 11:10	Molecular pathology/mass spectrometry imaging in cancer research <i>Professor Malcolm Clench, Sheffield Hallam University</i>
11:10 – 11:30	Coffee and poster viewing
Breakout Session 2	
11:30 – 12:30	Discussion of the barriers to development and implementation of human tissue models for cancer research
12:30 – 12:55	Feedback from breakout session
12:55 – 13:00	Meeting wrap-up <i>Professor Gareth Thomas, University of Southampton</i>
13:30 ~	Lunch and poster viewing