Advancing Personalised Medicine with Animal Models

INFRAFRONTIER / IMPC Stakeholder Meeting
November 14th -16th 2017
Athens, Royal Olympic Hotel
David Valle @ ILAR Roundtable

Model organisms and precision medicine:

- Confirm causation
- Understanding pathophysiology
- Surrogates for treatment studies
Models must reflect -omic variation in patients and discriminate causal from correlative factors at relevant efficiency

Effectively link -omic data with environmental, behavioral, and lifestyle information to identify actionable findings

Incorporate computational reasoning and semantic mapping efforts to enable cross-species phenotype comparisons
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Objectives - INFRAFROTIER/IMPC Stakeholder Meeting

- Raising awareness of INFRAFRONTIER / IMPC platforms among Personalised Medicine initiatives, funders and policy makers
- Share advances in CRISPR/Cas9 technology to model human conditions
- Present use cases for the utility of animal models for identifying targets for precision therapies
- Strengthen interactions with Personalised Medicine initiatives and Rare Disease consortia
- Responsible research: Discuss ethical aspects of genome-editing and data quality and reproducibility in preclinical research
Advancing Personalised Medicine with Animal Models

Organisers - INFRAFROTIER/IMPC Stakeholder Meeting

- BSRC “Alexander Fleming”
  INFRAFRONTIER partner
  Coordinator of INFRAFRONTIER-GR/Phenotypos
  Host of the Stakeholder meeting

- INFRAFRONTIER Research Infrastructure

- International Mouse Phenotyping Consortium
Advancing Personalised Medicine with Animal Models

Participants - INFRAFROTIER/IMPC Stakeholder Meeting

- INFRAFRONTIER-GR/Phenotypos partners
- INFRAFRONTIER partners / Evaluation Committee members
- International Mouse Phenotyping Consortium (IMPC)
- Panel of Scientific Consultants (IMPC)
- EU networks: EurOPDX, RD-Connect, CORBEL
- Regulator: European Medicines Agency
- Funders: NIH, IC-PerMed, IRDiRC
- Industry: Genentech, Metabolon, Sable Systems, Sonidel, Biomedcode, AYOXXA, EFPIA
- Travel grant recipients (Young Investigators)
Advancing Personalised Medicine with Animal Models

- 194 Participants
- 22 countries
- 5 continents
Advancing Personalised Medicine with Animal Models

Martin Hrabè de Angelis, Helmholtz Zentrum München
George Kollias, BSRC Fleming
Dimitris Kontoyiannis, BSRC Fleming
Jason Heaney, Baylor College of Medicine
Radislav Sedlacek, Czech Centre for Phenogenomics
Soren Warming, Genentech
Tomoji Mashimo, University of Osaka
Channabasavaiah Gurumurthy, University of Nebraska
Yann Herault, Phenomin-ICS
Nadia Rosenthal, JAX
Steve Brown, MRC Harwell
Damian Smedley, Genomics England
Rob Burgess, JAX
Cat Lutz, JAX
Jos Jonkers, Netherlands Cancer Institute
Enzo Medico, University of Torino
Andreas Roos, University of Newcastle
Jerry Lanfear, ELIXIR
Marisa Papaluca, European Medicines Agency
Colin Fletcher, NIH
Monika Frenzel, IC-PerMed
Paul Lasko, IRDiRC

First day only
Welcome address

Dr Maria Christoula

Head of Cabinet

Office of the Secretary General,
General Secretariat for Research & Technology
Program in a nutshell
The Stakeholder Meeting is structured into 3 main themes

1) Advancing Personalised Medicine with Animal Models
   • CRISPR/Cas9 based approaches to model human conditions
   • Use cases for the utility of animal models for identifying targets for precision therapies
   • Policy, regulatory and funder perspectives

2) International Mouse Phenotyping Consortium
   • IMPC CRISPR/Cas9 mouse production updates, and assessments of phenotyping pipelines and platforms
   • IMPC data and program integration, outreach and dissemination

3) Responsible Research
   • Editing mammalian genomes: ethical considerations
   • Reproducibility in experimental animal research
   • Stakeholder presentations
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