

KET*

Focus on (*) Key Enabling Technologies - nanotechnologies, advanced materials, advanced manufacturing and processing

360

INNOVATE
TOGETHER

27th June 2019 - Strasbourg - FRANCE

Project idea/ Field of expertise:

Chronic Inflammation On-Chip

Organisation Name:

Tampere University
Faculty of Medicine and Health
Technology

Adressed challenge(s)/ PPP(s):

n/a

Adressed topic(s) in Work Programme:

DT-NMBP-23-2020: Next generation organ-on-chip (RIA)

Tampere University – Body-on-Chip Center of Excellence

- Tampere University is 2nd biggest university in Finland (formed 1.1.2019, www.tuni.fi)
 - Faculty of Medicine and Health Technology -> BioMediTech institute
- AoF CoE www.bodyonchip.fi
 - Consortium of cell biologists, engineers and clinicians: in vitro and in vivo tissue engineering related applications
- **Our main expertise covers:**
- Biology:
 - Human pluripotent stem cell derived cardiomyocytes, neural cells, hepatocytes
 - Human mesenchymal cells, osteogenesis, adipogenesis
 - Endothelial cells; vascularization
- Engineering:
 - Micro- and nanosystems, microfluidics, sensor technology
 - Biomaterial synthesis, production and characterization
 - Bio-imaging and computational modeling
- **Combined in applications:**
- 2D and 3D cell models, organs on chips, disease modeling, precision medicine, drug development and screening, etc.
- **Previous funding:**
- Since 2003, joint funding for the consortium (Academy of Finland, Business Finland, EU FP7, FET, Horizon 2020 etc.) for over 30 M€, including commercialization projects

Chronic Inflammation On-Chip

- We plan to have a consortium to develop chronic-inflammation-on-chip technologies and biology
- Chronic inflammation is a significant condition as it relates to many tissues and diseases
- Body-on-chip offers us a versatile tool to understand and model e.g.
 - Diseases
 - Influence of drugs
 - Joint actions of cells and tissues to stimuli
- Body-on-chip systems enable technological development, e.g.
 - Miniaturization
 - Biomaterial and sensor development
 - Cell characterization methods
 - Computational analysis
- We offer expertise in our scientific and engineering areas (previous slide)
- Requested expertise (next slide)

Consortium partner possibilities

Partners in fields	Academic and enterprise partners welcome!
Chip technologies	
Novel chip/chamber materials	
3D imaging	
Antibody and RNA sensors	
Sensor integration	
Drug development and screening	
Bioinformatics	
Immuno-engineering	
Immunology	
Proteomics	
Gut / intestine (on-chip biology)	
Brown fat (on-chip biology)	

Contact details

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