Objective

Cardiovascular diseases including myocardial infarction (MI), which entails the irreversible loss of heart muscle tissue, constitute a major socio-economic burden in global healthcare. With whole organ transplantation as the only treatment option for end-stage heart failure, MI patients could particularly benefit from advanced cell therapies aimed at the functional reconstitution of damaged hearts. Human induced pluripotent stem cells (hiPSCs) can be derived by reprogramming patients’ somatic cells. In contrast to adult (stem) cells e.g. from blood, bone marrow or the heart, hiPSCs have unlimited expandability and differentiation potential into all relevant cell types including cardiomyocytes, endothelial cells, pericytes and connective tissue-forming cells, making them highly attractive as a universal cell source for organ repair. However, technologies for the robust therapeutic scale production of hiPSC-derived progenies in line with GMP standards and at reasonable cost are currently lacking.

TECHNOBEAT’s ultimate objectives are 1) to advance therapeutic scale cell
production through innovative bioreactor technologies and novel cell monitoring tools, and 2) to develop regulatory compliant bioprocessing of innovative iPSC-based cardiac μ-tissue. The clinical translation of cardiac μ-tissue will require 3) the development and application of tools for improved cell delivery and longitudinal in vivo monitoring of cell grafts, and 4) proof-of-concept for safety and functional integration in physiologically relevant preclinical models of cellular heart repair. Through its interdisciplinary excellence, TECHNOBEAT’s consortium of leading European stem cell researchers, clinicians, tissue-, bioprocess-, and technical-engineers in industry and academia is ideally positioned to address these ambitious objectives. It will provide new treatment options for suffering patients and increase Europe’s attractiveness as a hub for innovative medical technologies.

Field of science

/medical and health sciences/medical biotechnology/cells technologies/stem cells
/medical and health sciences/clinical medicine/transplantation
/engineering and technology/environmental biotechnology/bioremediation/bioreactor
/medical and health sciences/clinical medicine/cardiology/cardiovascular diseases

Programme(s)

Topic(s)

Call for proposal

H2020-PHC-2015-two-stage

Funding Scheme

RIA - Research and Innovation action

Coordinator

MEDIZINISCHE HOCHSCHULE HANNOVER

Address

Carl-neuberg-strasse 1
30625 Hannover

Activity type

Higher or Secondary Education Establishments

EU contribution

€ 1 245 950

Website

Contact the organisation
## Participants (7)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Country</th>
<th>EU contribution</th>
<th>Address</th>
<th>Activity type</th>
<th>Website</th>
<th>Contact the organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACADEMISCH ZIEKENHUIS LEIDEN</td>
<td>Netherlands</td>
<td>€ 649 750</td>
<td>Albinusdreef 2, 2333 ZA Leiden</td>
<td>Higher or Secondary Education Establishments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE UNIVERSITY OF SHEFFIELD</td>
<td>United Kingdom</td>
<td>€ 650 000</td>
<td>Firth Court Western Bank, S10 2TN Sheffield</td>
<td>Higher or Secondary Education Establishments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIVERSITAIR MEDISCH CENTRUM UTRECHT</td>
<td>Netherlands</td>
<td>€ 749 750</td>
<td>Heidelberglaan 100, 3584 CX Utrecht</td>
<td>Higher or Secondary Education Establishments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KADIMASTEM LTD</td>
<td>Israel</td>
<td>€ 649 950</td>
<td>Pinchas Sapir Str 7 Weizmann Science Park, 74140 Nes Ziona</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARACELUS MEDIZINISCHE PRIVATUNIVERSITAT SALZBURG - PRIVATSTIFTUNG

Austria
EU contribution
€ 644 875

Address
Strubergasse 21
5020 Salzburg

Activity type
Higher or Secondary Education Establishments

Website [Contact the organisation]

DASGIP INFORMATION AND PROCESS TECHNOLOGY GMBH

Germany
EU contribution
€ 729 200

Address
Rudolf-schulten-str. 5
52428 Julich

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation [ ]

OVIZIO IMAGING SYSTEMS

Belgium
EU contribution
€ 649 375

Address
Rue Du Bourdon 100
1180 Bruxelles

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation [ ]

Last update: 20 January 2016
Record number: 199758