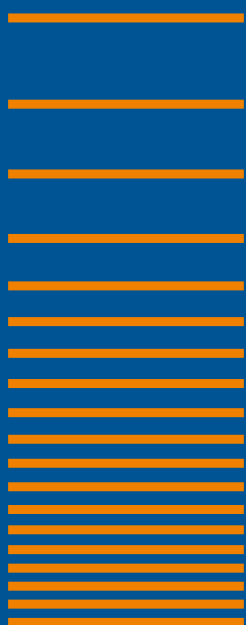


Achievements of FP7

examples that make us proud



Acknowledgements

This booklet is a true, but humble, product of European cooperation, just like the inspiring examples it contains. All of the content was contributed by country delegations and collected to support the discussion at the Informal Meeting of Ministers for COMPET (Research) in Amsterdam during the Netherlands Presidency of the Council of the EU. All contributions reflect inspiring examples of the excellence and impact of research and innovations projects.

We thank everyone for their contribution.

Foreword

An innovative society cannot thrive without the continued development of knowledge. To gain new, state-of-the-art knowledge, researchers and enterprises need to have access to the best knowledge, best facilities and best networks across borders and disciplines. Together, we enable this cross-border cooperation through excellent national and European (Framework) programmes. We strive for impact and success by securing funding, access and collaboration, and by putting in place the right framework conditions for an attractive research and innovation climate in Europe.

Ground breaking research and innovation are exciting and useful for creating jobs and stimulating growth. Compiled in this booklet, your contributions demonstrate the substantial impact of investments in research and innovation through the European Framework Programmes. Moreover, these EU projects show the added value of research and innovation projects for the economy and for national, regional and local communities.

With this booklet we show that investments in research and innovation, including short- and long-term investments, have a significant and real impact on Europe's economy and society. I hope it inspires all readers to vouch for a more innovative and competitive Europe. A Europe that aims to attract investors, innovative enterprises and the best researchers. A Europe that aims to foster sustainable economic growth and to solve the societal challenges we are all faced with.

Also on behalf of the Minister of Economic Affairs, Mr Henk Kamp,



Sander Dekker

State Secretary for Education, Culture and Science
Chair of the informal meeting of Ministers for COMPET (Research)

Switzerland

Name

BOC (Body on a chip)

Year/duration

01.06.2012 – 31.05.2015 (36 months)

Website

www.insphero.com/company/eu-project-the-body-on-a-chip

Results

The project:

- Brought together an SME, a major company and academic players
- Produced a robust prototype for a “body on a chip” that may reach the market within 2-3 years
- Produced excellent scientific output (example: a publication in Nature communications www.nature.com/ncomms/2014/140630/ncomms5250/pdf/ncomms5250.pdf)
- Led to a very promising follow-up project that is funded in the framework of a FET Open high-tech SME project

Expected socio-economic impact

When the expected product (a “body on a chip”) indeed reaches the commercialization stage, it should not only strongly impact on the company commercializing the product but it may also have a serious impact on:

- other companies that can integrate the product in the pre-clinical trial phase of pharmaceuticals they are developing (thereby saving time and money)

- patients that can benefit from newly developed pharmaceuticals that are on the market more rapidly, possibly cheaper and as safe as other pharmaceuticals developed in the “traditional pre-clinical framework”
- the health care system as a whole since patients might benefit at an earlier time point from potentially more affordable pharmaceuticals (“Health” was identified by the European Commission as one of the Grand Challenges)

Description

The project aims at developing a “body on a chip” (in vitro 3D cell-based assay) that simulates several organs and the metabolic processes taking place in these organs. This chip can be used in the pre-clinical phase of the development of new pharmaceuticals in order to detect toxic effects. Today, pharmaceuticals are tested on 2D cell-cultures that give results with limited quality since the cells in these cultures have short lifespans and therefore only allow detection of acutely toxic substances. Cells in a “body on a chip” have longer lifespans and thanks to their 3D arrangement and to the interconnection between the pseudo-organs they are integrated in, they mimic the body in a more accurate way. Hence, the quality of predictions is enhanced and long term toxicity can also be detected. That allows the earlier elimination of unsuitable substances from expensive pharmaceuticals development programmes.



The metabolization of pharmaceuticals by a human body should be understood in a much better way with a “body on a chip” analysis than with the methods used today.

Cooperation countries

Germany, Belgium, United Kingdom and Switzerland

FP7 Evaluation Achievements

1. Encouraged scientific excellence on individual and institutional level
3. Engaged industry and SMEs strategically
6. Addressed certain societal challenges through research, technology and innovation

Colofon

This is a publication of the Ministry of Economic Affairs and the Ministry of Education, Culture and Science of the Government of the Netherlands.

This document has been produced with the assistance of many country delegations. Their contribution has been extremely valuable and confirms how dedicated Europe is to research and innovation.