



Project Number: 610472

A CANcer Development mOnitor

Specific Targeted Research Project

Information Society Technologies

Deliverable D6.2: Creation and distribution of promotional material announcing the start of the CanDo project.

Due date of deliverable: **31st January 2014**

Actual submission date: **18th July 2014**

Start date of project: 2014-01-01

Duration: 3 Years

Organisation name of lead contractor for this deliverable: **UVEG**

Revision **[2.0]**

Project co-funded by the European Commission within the Seventh Framework Programme		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

1 Document History

Version: 2

Lead author: UVEG

Authors: All partners

Date: 06/06/14, 16/07/14

Changes: New structure, proposed by the PO, second version

Internal approval: 04/06/14, 16/07/14

Delivery to the EC: 06/06/14, 18/07/14

2 Executive Summary

The first objective of the document is to describe shortly the information that all the promotional material includes and enumerate the promotional channels chosen to announce the start of the CanDo project.

The content of the document therefore has two parts. Firstly, the main information and the dissemination channels are described. Secondly, examples of the promotional material issued are shown.

The document informs about the production and distribution of various promotional material announcing the start of the CanDo project as specified in T6.2: Creation and distribution of promotional material: project leaflets/flyers/brochures, posters, videos, short slideshow etc., for broader distribution at key events and through a regularly updated database of contacts formed from T6.10, i.e. CIG. (M1-M36) (D6.2, D6.8, D6.13, D6.18) (Led by UVEG - 0.5PM, all partners)

3 Deliverable structure

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4 Description of work performed

4.1 Promotional material

The general information included in all the promotional material is the following:

- Introduction to the CanDo consortium.
- Short description of the motivation and general objectives of the CanDo project.
- Short description of the CanDo platform

The channels chosen to announce the start of the CanDo project are the following:

- Newsletter: electronically distributed to the CanDo Interest Group. A part from the general information aforementioned general information and contribution to the CanDo project of one of the partners is also included, in this first issue the partner chosen is Karolinska.
- Flyer: The flyers were electronically distributed to the >150 CanDo Interest Group partners in June 2014. A first batch of paper copies of the flyers have been printed and were divided to the partners during the M6 technical meeting. The paper copies will be distributed by the partners wherever and whenever suitable
- Poster: it will be used by the partners where possible for general dissemination of the project.
- Short presentation: it will be used by the partners where possible for general dissemination of the project.

All this material is downloadable by the general public via the CanDo website:
<http://www.fp7cando.eu>

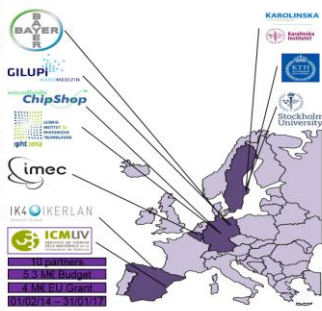
4.2 Examples of the promotional material

4.2.1 Newsletter



CanDo consortium

7 European research and/or academic centres and 3 commercial enterprises have joined together to form a new European research consortium in a project called CanDo, or a "CANCer Development mOnitor". The goal of CANDO is to develop a small lab-on-a-chip device that isolates and analyses circulating tumour cells (CTCs) from peripheral blood in a reliable and sensitive way. CTCs are cells that are released by a tumour and eventually become dangerous to the body by generating metastases. Knowing how many CTCs are present in peripheral blood as well as analyzing their genetic background may help in the treatment of cancer patients. The European Union supports the consortium during a three-year period with 4M Euros through its Seventh Framework Programme. CANDO, will be led by the University of Valencia.



Cancer incidence and current diagnostic methods

Cancers figure among the leading causes of death worldwide (1), accounting for 8.2 million deaths in 2012. Pancreatic cancer is of strong socio-economic interest as currently it is usually diagnosed at an advanced stage when rapid progression has occurred for widespread disease dissemination and so a 96% chance of death for some 68000 Europeans or 45000 US citizens diagnosed every year (2).

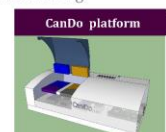


Pancreatic cancer diagnosis is currently achieved using a set of methods, including physical examination, ultrasound, computed tomography (CT), magnetic resonance (MR), and endoscopic retrograde cholangio pancreatography (ERCP). Apart from being costly and unpleasant for the patients, the tests are:

1. not specific for pancreatic cancer

2. not designed for early diagnosis

Making a correct diagnosis challenging. In response CanDo will develop a point of care (PoC), rapid and economical diagnostic platform capable of isolation and concentration determination of CTCs in peripheral blood as well as molecular characterization for early diagnosis of pancreatic cancer, for two key societal challenges, early and low cost anti-cancer drug efficacy determination and cancer diagnosis/monitoring.



(1) <http://www.who.int/mediacentre/factsheets/fs297/en/>

(2) http://www.europan.europa.eu/stoq/webdav/site/cms/shared/2_events/workshops/2012/20121010/Matthieu%20Loehr.pdf



A CANcer Development mOnitor



A CANcer Development mOnitor

Performance of the CanDo platform will be tested with clinical samples at the Karolinska University hospital

Karolinska University Hospital is a leading centre for gastroenterology and gastroenterological surgery and is closely linked to Karolinska Institutet a world leading university and research institute. At Karolinska 400 pancreas cancer patients (PDAC) are taken care of every year, 80 of whom go to surgery, while the rest are offered radio- and chemo therapy. The patients are treated in a highly systematic and well controlled clinical setting. The excellent staff at the pathology department take care of more than 75 PDAC samples a year for diagnostic research purposes. More than 70 cases are biobanked each year with a time from patient to freezer of less than 30 minutes. A high number of patients are included in various research projects and clinical trials.



www.karolinska.se/en/

-The pancreas cancer research group consists of 50 persons covering a huge competence area from basic science, molecular biology, proteomics, cell culture to pathology, surgeons and clinicians.



FoUU Group Pancreas and KICancer HBP

The research group works with animal models, cell and tissue culture, molecular analyses, sequencing, pharmacogenomics, clinical research and clinical trials. The group is well established and founded and has the best clinical results on PDCA in the country, well in class with the best in the world. The head of the lab is Professor Matthias Löhr. One of the worlds leading pathologists, associate professor and senior consultant Caroline Verbeke is also actively involved in the research and in the CanDo project.

Within CanDo Karolinska is responsible for the work on human samples from healthy volunteers and PDCA patients. It has an ethical permit for the project and will establish a sample collection at the Karolinska Biobank/Stockholm Medical Biobank. In March 2014, Karolinska arranged a very inspiring end user meeting defining the clinical use of CTC in PDAC as well as defining the end-users need of the CanDo project.

Karolinska also has a number of suitable pancreas ductal epithelial cell lines as well as characterized cell lines from pancreatic cancer, which are now distributed to the CanDo partners.

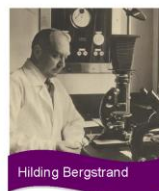


Microscopic picture of an intravascular invasion of pancreas cancer

Clinical environment

Circulating Tumour Cells, a source of tumor cells for clinical use and research

Karolinska is arranging a symposium on June 10th on "Circulating tumor cells as a source of relevant tumor cells for clinical use and research". Invited speakers are Professor Klaus Pantel from Hamburg, Germany Professor Mehmet Toner, from Boston, USA, Dr Klaus Lücke from Pottsdam, Germany and Dr Christer Ericsson, Stockholm Sweden.



Hilding Bergstrand

In commemoration of Professor Hilding Bergstrand, Karolinska Institutet and the Swedish Cancer Society arrange a

Hilding Bergstrand Lecture

at Birke aulan, Karolinska Institutet,
Karolinska University Hospital Huddinge
June 10th, 2014, 14.00 – 17.00

<http://ki.se/en/labmed/calendar/hilding-bergstrand-lecture>



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A **CAN**cer Development mOnitor

ABOUT THIS NEWSLETTER - SUBSCRIBE/UNSUBSCRIBE

CanDo will send out a newsletter once per year for the next three years. You received this email because you were identified by one of the CanDo partners as a potential interestee in the technology we develop. If you do not want to receive more annual newsletters, please reply to this email and write UNSUBSCRIBE in the Subject field.



A **CAN**cer Development mOnitor

4.2.2 Flyer



The CANcer Development mOnitor consortium

□ will combine R&D activities of six research centres from four different European countries.

□ will develop a lab-on-a-chip device to identify Pancreatic Cancer Circulating Tumor Cells (CTC) from small blood samples.

□ will focus on allowing the device to be used at point of care with a total assay time less than 3 hours.

□ is supported during 2014-2016 with 4M Euro by the European Union through the Seventh Framework Programme.

The Can Do! consortium



Bayer HealthCare is one of the leading companies in the area of prescription and consumer products. The subgroup is divided into four operating divisions. The Pharmaceuticals Division combines its strengths in two business units: General Medicine and Specialty Medicine.
Contact: Dr. Thomas Krahn, thomas.krahn@bayer.com, URL: www.bayerpharma.com



Gilupi is a Diagnostic Medical Device Company focused on rare cell capturing technologies from circulating blood and other biological fluids based on its innovative CellCollector™ platform.
Contact: Dr. Klaus Lücke, klaus.luecke@gilupi.com, URL: www.gilupi.de



Universitat de Valencia is one of the oldest, largest and most important universities in Spain and participates through the Unit of Materials and Optoelectronic Devices (UMDO) from within the Institute of Materials Science.
Contact: Dr. Daniel Hill, daniel.hill@uv.es, URL: www.uv.es/umdo



Karolinska hospital, it will participate in future research on the characterization of drug resistance at a cellular level and the treatment of drug resistant cancers.
Contact: Dr. Lennart Eriksson, lennart.eriksson@ki.se, URL: kikatalogen.ki.se/kikat/faces



IK4-IKERLAN is one of the founding members of the IK4 Research Alliance, it will contribute to CanDo with development and integration of PoC holistic solution and will also take part as a technological advisor.
Contact: Dr. Rosa Iglesias, riglesias@ikerlan.es, URL: www.ikerlan.es/



KTH, the Royal Institute of Technology The Microsystem Technology Lab is a leading MEMS and microfluidics group. It leads the inertial microfluidics systems.
Contact: Dr. Aman Russon, aman.russon@scilifeab.se, URL: www.kth.se/en/bio/research/nanobio



IPHT in Jena, Germany, is a non-profit R&D organization. Optical Cell diagnostics group is will contribute on the research and establishment of innovative single cell diagnostics based on Raman spectroscopy.
Contact: Dr. Christoph Kraft, christoph.kraft@ipht-jena.de, URL: www.ipht-jena.de/en/home.html



Microfluidics, is one of the leading polymer microfluidic service providers worldwide. By employing industrial development and manufacturing methods it will ensure the commercial validity of the microfluidic devices.
Contact: Dr. Holger Becker, hb@microfluidic-chipshop.com, URL: www.microfluidic-chipshop.com/



imec, Leuven, Belgium, is a world-leading research center in nanoelectronics and nanotechnology. It will lead the design, functionalisation, testing and measurement of the Si photonics transducers.
Contact: Peter Blietsmann, pblies@imec.be, URL: www2.imec.be/be_en/home.html



SU, is most international technical university in Sweden. It will develop multiplexed pathway profiling of marker transcripts and bead-based and biosensor surface based RCA.
Contact: Dr. Mats Nilsson, mats.nilsson@scilifeab.se, URL: www.su.se/en



CanDo contact point

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Can Do!

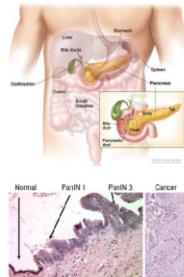
A CANcer Development mOnitor

Cancer incidence and current diagnostic methods

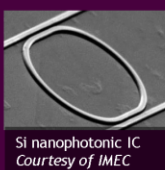
Cancers figure among the leading causes of death worldwide¹, accounting for 8.2 Million deaths in 2012. Pancreatic cancer is of strong socio-economic interest as currently it is usually diagnosed at an advanced stage when rapid progression has occurred for widespread disease dissemination and so a 96% chance of death for some 68000 Europeans or 45000 US citizens diagnosed every year².

Pancreatic cancer diagnosis is currently achieved using a set of methods, including physical examination, ultrasound, computed tomography (CT), magnetic resonance (MR), and endoscopic retrograde cholangio pancreatography (ERCP). Apart from being costly and unpleasant for the patients, the tests are:

- *not specific for pancreatic cancer
 - *not designed for early diagnosis making a correct diagnosis challenging.
- In general no reliable blood test currently exists for cancer diagnosis and much of the problem is due to the non-specificity of the tumour markers.



Lab-on-a-chip device to identify



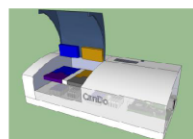
The key is in the combination of state of art cell isolating, counting and sorting technologies and techniques that TOGETHER provide multiparameter sensing with an extremely low limit of detection and very high specificity:

- * Nano-photonics biosensors based on ring resonators, allowing label free and real-time detection.
- * Surface Raman enhancement spectroscopy (SERS) analysis.

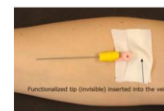
(1) <http://www.who.int/mediacentre/factsheets/fs297/en/>
(2) http://www.europa.eu/soa/webdav/site/icsm/shared2_events/workshops/2012/20121010Matthias%20Loehr.pdf

CanDo platform

CanDo will develop a point of care (PoC), rapid and economical diagnostic platform capable of isolation and concentration determination of CTCs in peripheral blood as well as molecular characterization for early diagnosis of pancreatic cancer, for two key societal challenges, early and



CanDo platform



CellCollector™ for in vivo CTC collection

low cost anti-cancer drug efficacy determination and cancer diagnosis/monitoring.

CanDo platform constituted by modular smart components and systems that will be integrated into an economical and disposable two cartridge system with different lab-on-chip technologies, designed to capture in parallel in-vivo CTCs, that is not limited to blood sample volume, and in-vitro.

The high degree of integration will result in a platform with a reduced footprint for bench top use that will be transportable, although not portable, superior to that of the lab-based IVD platforms.

pancreatic CTCs in blood

- * Inertial microfluidics
- * Affinity-capture of cells on high surface microchip.
- * Multiplexed analysis of DNA and RNA sequences based on circularization reactions using padlock probes and rolling circle amplification (RCA), an isothermal amplification method, with proven sensitive (down to single molecule).



4.2.3 Poster

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Funded by 4M€ from the FP7 ICT programme of the EC.



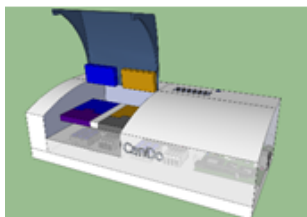
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Pancreatic Cancer

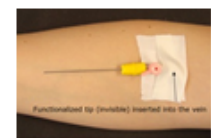


Pancreatic **CAN**cer diagnosis is currently achieved using a set of methods: computed tomography (CT), magnetic resonance (MR), etc., which aside from being costly and unpleasant for the patients are not specific for pancreatic **CAN**cer nor are they designed for **early diagnosis**, making a **correct and timely diagnosis** challenging.

CanDo platform



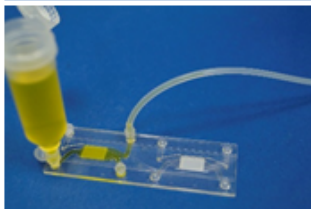
The **CanDO** platform will consist of **modular components** and systems that will be integrated into a economical and disposable two cartridge system with different lab-on-a-chip technologies, designed to capture in **parallel in-vivo CTCs**, that is not limited to **blood samples** volume, and **in-vitro**.



CellCollector™
for in vivo CTC
collection

Cartridge I

Inertial microfluidics



Cross flow
membrane cell
trapping,
*courtesy of
Microfluidic
ChipShop*

EpCAM CTC capture

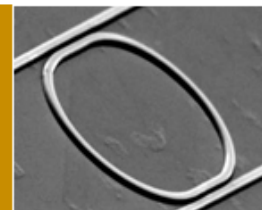
SERS analysis

Cartridge II

RNA extraction

RNA amplification and preparation

Si nanophotonic
IC, *courtesy of
IMEC*



Nanophotonic biosensor

CanDo consortium

CanDo will develop a **point of care (PoC)**, rapid and economical diagnostic platform capable of isolation and concentration determination of CTCs in peripheral blood as well as **molecular characterization** for **early diagnosis** of **pancreatic cancer**.



KAROLINSKA
University Hospital



ICMUV
INSTITUT DE CIÈNCIA
DELS MATERIALS de la
Universitat de València

IK4 IKERLAN
Research Alliance

microfluidic
ChipShop

imec

LEIBNIZ-
INSTITUT für
PHOTONISCHE
TECHNOLOGIEN
ipht jena




GILUPI
NANO-MEDIZIN



Stockholm
University




4.2.4 Short presentation



CanDo

FP7-610472
CanDo,
4MC,
2014-2018




A CANCER Development mOnitor

Keywords:

Heterogeneous Integration,
Micro-nano-bio photonic
system,
lab-on-chip,
cell sorting,


Multiparameter biosensors,
CTCs,
EpCAM,
point of care,
early disease detection,
pancreatic cancer diagnostic.

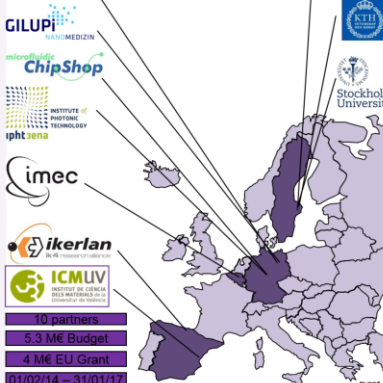
www.fp7cando.eu



CanDo


FP7-610472-CanDo
4MC, 2014-2017






- 7 European research and/or academic centres and 3 commercial enterprises have joined together to form a new European research consortium in a project called "CanDo" or a "CANCER Development mOnitor".
- The European Union supports the consortium during a three-year period with 4M Euros through its Seventh Framework Programme. CANDO, will be led by the University of Valencia.

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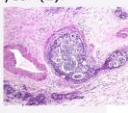



Pancreatic Cancer


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- Cancers figure among the leading causes of death worldwide (1), accounting for 8.2 Million deaths in 2012.
- Pancreatic cancer is of strong socio-economic interest as currently it is usually diagnosed at an advanced stage when rapid progression has occurred for widespread disease dissemination and so a 96% chance of death for some 68000 Europeans or 45000 US citizens diagnosed every year (2).
- Pancreatic cancer diagnosis is currently achieved using a set of methods, including physical examination, ultrasound, computed tomography (CT), magnetic resonance (MR), and endoscopic retrograde cholangio pancreatography (ERCP). Apart from being costly and unpleasant for the patients, the tests are:
 - not specific for pancreatic cancer
 - not designed for early diagnosis





(1) <http://www.who.int/mediacentre/factsheets/fs297/en/>
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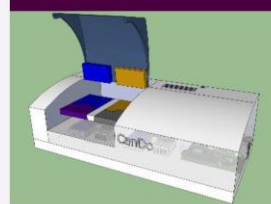


CanDo platform

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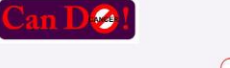
- CTCs are cells that are released by a tumour and eventually become dangerous to the body by generating metastases.
- Knowing how many CTCs are present in peripheral blood as well as analyzing their genetic background may help in the treatment of cancer patients.
- Most relevant biomarkers for blood tests, CTCs ($<10^{-9}$ cells) require more reliable and sensitive cell sorting technology.
- The goal of CanDo is to develop a small lab-on-a-chip device that isolates and analyses circulating tumour cells (CTCs) from peripheral blood in a reliable and sensitive way.



Our more reliable rare cell sorter technology for CTCs has **integrated detection methods** – including plasmonic substrates for **SERS analysis**:


- Optimised for maximum E-field enhancement.
- One design based on **nan antennas**.

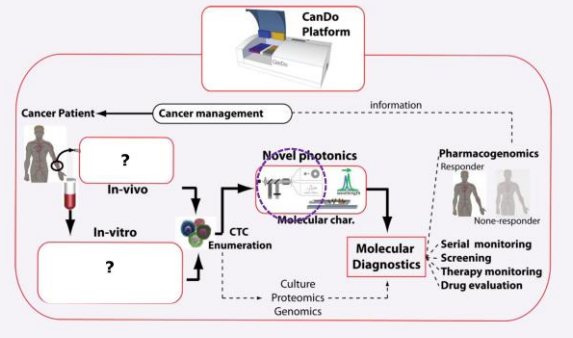
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CanDo platform

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5



CanDo platform

FP7-610472-CanDo
4MC, 2014-2017



The **CanDo** platform will consist of **modular components** and systems that will be integrated into a economical and disposable two cartridge system with different lab-on-a-chip technologies, designed to capture in **parallel in-vivo CTCs**, that is not limited to **blood samples** volume, and **in-vitro**.

Cartridge I	Cartridge II
Inertial microfluidics	RNA extraction
Cross flow membrane cell trapping, courtesy of microfluidic ChipShop	RNA amplification and preparation
EpCAM CTC capture	Si nanophotonic IC, courtesy of IMEC
SERS analysis	Nanophotonic biosensor

6



CanDo

FP7-610472-CanDo
4MC, 2014-2017





The **CANCER Development mOnitor** consortium

- will combine R&D activities of six research centres and four industrial partners from four different European countries.
- will develop a lab-on-a-chip device to identify Pancreatic Cancer CTCs from small blood samples.
- will focus on the device to be used at point of care with a total assay time <3 hours.

7

Daniel Hill, Project manager, daniel.hill@uv.es

5 Conclusions

Promotional material has been created for disseminating the project and will be updated later periodically.

6 Near future planning/Future work

The promotional material will be updated in D6.13 before being included as part of the Technology Transfer to industrial partners, the CIG and other framework projects (D6.18).