Project Number: 257401

A highly integrated and sensitive POrous SIlicon based lab on a chip for multiple quantitaTIVE monitoring of food allergies at point of care.

Specific Targeted Research Project

Information Society Technologies

Deliverable D11.18: Press release announcing innovation developed within the whole the project

Due date of deliverable: **February 28th 2014**

Actual submission date: **May 19th 2014**

Start date of project: 2010-09-01 Duration: 3 ½ 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. About this deliverable

1.1. Introduction

This document contains a copy of a press-release announcing innovation developed within the whole project.

1.2. Scope of the deliverable

The deliverable really just provides a copy of a press-release.

1.3. Structure of this deliverable

The report is laid out according to the tasks defined in WP11 as follows:

T11.6: Dissemination of Positive research results to the non-scientific/technical media at large (e.g. newspapers, magazines, TV, periodicals). Months: 1-36. (D11.3, D11.9, D11.18) (All partners)

Contents

2. Description of work performed

2.1. T11.6: Press release announcing innovation to date within the project

2.1.1. The Press release

"Innovative technologies for a rapid food allergy test"

Over 15 million people in Europe – including eight percent of all children - suffer from food allergies, and this number is growing steadily. Currently, children who portray mild symptoms may undergo a skin prick test that is not only lengthy but particularly painful and usually very traumatic. Researchers from the Positive consortium of industrial partners, 6 universities and research institutes after 3 ½ years in a 2.9M€ funded EC project have taken a large step forward to the realization of putting a food allergy machine on every pediatrician's desk, an instrument that can produce test results in 15 minutes from a miniscule drop of blood.

Today's food allergy tests can be very expensive, take a long time, as well as being both difficult to administer and quite painful. This is especially true for the common skin prick test on young children whose arms are not large enough to take the regular test made on adults. Instead they have to be held face down for long periods of time while the pediatrician scratches food extracts into different marked patches on the skin of the child's back.

"Positive, which has just recently finished, was a high risk but high gain project, with many known challenges at the time of its conception as a proposal 5 years ago, but since then it has also provided us with plenty more along the way. Although with the time and resources available we were not able to fully develop all of the technologies necessary to realize the aforementioned food allergy machine we made great progress and in doing so developed some very innovative technologies or demonstrated some novel applications of already existing technologies. In fact those technologies or applications themselves could find a way into commercial products for food allergy diagnostics or other problems." Says Daniel Hill Project Coordinator of Positive and researcher in the UMDO group at the University of Valencia.

Those technologies or technological applications that have been developed and/or demonstrated include:

(1) Combination of OSTE(+)[1] with copolymer. The method aims at improving and simplifying the batch back-end processing of microarrays and create microfluidic cells. The Biosticker is aimed to be a plug-in for existing microarray platforms to enable faster protein assays and DNA hybridizations through mass transport optimization. (KTH, CNR)
(2) A micro-well platform enabling simultaneous flow through and optical inspection. This unique technology has applications in single cell studies, where the response of individual cells trapped in the micro-wells to stimulants supplied in the flow stream can be followed by microscopy in real-time. (KTH, CSEM, UVEG)
(3) A high performance sensor chip thermal control system that has already been implemented in optical instrumentation in over a dozen international University and industrial research laboratories. (Farfield)
(4) A module developed for blood filtering that enables several 100 µl of whole blood to be filtered and plasma to be generated for subsequent analysis. This will find uses in lab on chip applications which require alternatives for plasma extraction from whole blood samples which is currently done in dedicated laboratories by centrifugation. (CSEM)

[1] Mercene Labs AB is a spin-off Company from KTH commericializing OSTE, which was developed during FP7 InTopSens and FP7 Positive, for device fabrication by customers.

(5) A module for sequential actuation of a set of fluids through a microfluidic cartridge, which also enables priming of the cartridge with CO_2 and avoids the introduction of air plugs between the different fluids[2] (CSEM).
(6) A fluorescence based milk and egg allergen microarray for detection of specific IgE and IgG with sensitivity and reproducibility comparable to the commercially available ImmunoCAP ISAC from Thermo Fisher. (C-UB, CNR)

"From the advances made in biosensing and the development of a working automated instrument over the past 18 months the consortium remains convinced that with some further development a prototype could be realised that could give up to ten different measurements of food allergies at a time which would tell us to what degree the person is allergic. From there it would be fairly straight forward step to scale it up for hundreds of food allergies in order to be able to test all the food allergies at the same time."

- Read more about the project on Positive's homepage

For more information, contact Daniel Hill, daniel.hill@uv.es

[2] CSEM is working on a demonstrator of a compact, stand-alone pressure driven fluid handling module anditt is intended to have this ready for SLAS 2015 in Washington DC to present to the lab automation and instrumentation community. CSEM is also implementing such a module in two currently running projects, one for food quality monitoring and one for 3D cell tissue generation for pharma research.

3. Conclusions

A press release was made in May 2014 announcing the innovation developed within the whole of the Positive project.