

September 2016

## Research Success Story



### B E T T E R   V A C C I N E S   F O R   T H E   F U T U R E

*Thanks to a Horizon 2020 grant, 6 biotech companies are pooling their expertise to develop solid-form, thermostable vaccines that will be cheaper, safer and needle-free. The funding turned out to be only one of the advantages of the MACIVIVA project, says its Scientific Coordinator, Dr Sylvain Fleury, who is the Chief Scientific Officer of Mymetics SA. "An EU grant improves your visibility, network and access to manufacturing capabilities with other EU-based companies."*

Today, more than 80% of vaccines are in liquid form, and most are administered through needle injection. Deterioration of vaccines is a big problem because a strict cold chain cannot always be guaranteed – often in the very places where vaccines are most needed. Unfortunately, millions of units need to be discarded each year.

#### **Horizon 2020 grant**

Now, a consortium is pooling their expertise to develop thermostable, solid-form vaccines that can be delivered as an oral pill, nasal powder or sublingual tablet. Thanks to a Horizon 2020 grant, the MACIVIVA project, made up of 6 companies from 3 EU Member States plus Switzerland, is carrying out a proof-of-concept study with a virosomal HIV vaccine candidate. This could later be extended to other vaccine candidates, such as malaria and influenza.

The new approach uses safe, virus-like particles called virosomes to deliver the vaccine. As it is often hard to find investors for early-stage products in infectious diseases like HIV, applying for an EU grant was a natural step, explains Dr Fleury. The requirement to involve EU companies turned out to have unexpected benefits.

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"Building a consortium of different-sized EU companies brought us diversification and complementary expertise. For example, big contract manufacturing companies have the know-how to make sure the manufacturing process can be upscaled for market. SMEs have flexibility, while a large company

brings credibility." Protecting intellectual property was a challenge but manageable through clear agreements.

#### **How Euresearch can help**

Dr Fleury recommends that companies first speak with Euresearch. "Academics are used to applying for competitive grants, but half of the companies I talked with have little or no experience in international collaborative grants. Companies applying to Horizon 2020 for the first time need a lot of support because it is highly competitive." Even with his own application experience, he says that Euresearch gave him valuable feedback. "They explained that parts of the application were too technical; a grant must satisfy the experts but also be simple enough, with enough background, not to lose the non-experts. If you lose even one reviewer, the project selection could be over."

# About MACIVIVA



**Mymetics SA team members:** Dr Mario Amacker (left) and Dr Sylvain Fleury (right).

*“Companies applying to Horizon 2020 for the first time need a lot of support”*

**Dr Sylvain Fleury**  
CSO, Mymetics SA

## CONTENT SUMMARY

MACIVIVA is a consortium of 6 partners in 3 EU Member States and Switzerland. Mymetics provides liquid vaccines based on the technology of virosomes. Bachem will develop and provide vaccinal peptides. Upperton will transform the vaccine into spray-dried powder for nasal and oral delivery. Catalent will transform it into freeze-dried powder for sublingual delivery. All of the new solid vaccine forms allow cold-chain independent storage. Chimera will monitor the antibody response toward the new vaccines.

**Euresearch** is the Swiss network mandated by the State Secretariat for Education, Research and Innovation to provide targeted information, hands-on advice and transnational partnering related to European research and innovation programmes.

## FACTS AND FIGURES

**Project Name**  
MACIVIVA – MANufacturing process for Cold-chain Independent Vlirosome-based Vaccines

**Research Area**  
Scale-up of nanopharmaceuticals production

**Organisations**  
Mymetics BV, The Netherlands (Coordinator) and 5 partners

**Start Date – End Date**  
04.05.2015 – 03.11.2018

**Duration**  
42 months

**Project Cost**  
€8.4 million

**Project Funding**  
€8.4 million

**Programme**  
Horizon 2020 Industrial Leadership: Leadership in enabling and industrial technologies (LEIT) – Nanotechnologies

**More Information**  
[www.maciviva.eu](http://www.maciviva.eu)

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