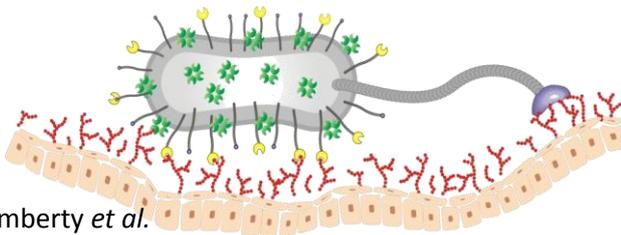


ELICITYL's Biomed R&D programs

Elicityl is coordinating collaborative R&D programs involving academic labs and companies. These programs have been selected for support by National Grants. They accelerate innovation allowing the development of new products and they contribute to reinforce scientific and technical expertise of both partners. Elicityl is ready to discuss about every opportunity on new R&D programs.

Glycodendrimers/Carbohydrates against Infection



Imberty *et al.*

❖ Anti-PYO 2012-2016

Goal: Design, synthesis and pharmaceutical development of anti-adhesive glycodendrimers inhibitors of infection by *Pseudomonas aeruginosa*.

Partners: Elicityl (Project leader), Université Claude Bernard Lyon 1 (69), Sanofi R&D, CERMAV-CNRS (38), LISM-CNRS, Université Lille 2.

Expected outcomes: Drug candidate to treat lung infections related to *Pseudomonas aeruginosa* in patients in intensive care units and cystic fibrosis patients. This bacterium is the leading cause of infection in patients in intensive care units and is responsible for 80% of mortality in cystic fibrosis patients. The molecules developed in ANTI-PYO are designed to prevent bacterial attachment to lung surface, to facilitate their elimination by the immune system and to make them much more sensitive to standard antibiotic treatments against which the bacteria has become resistant.

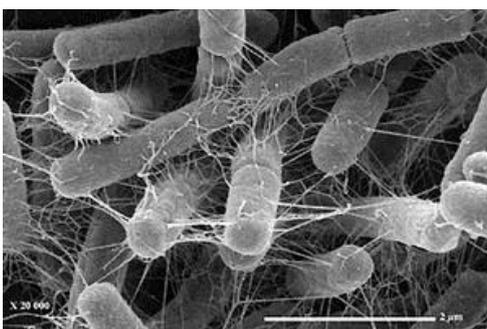
❖ E. Coli infection of farm animals

Elicityl is currently involved in another European funded program about glycodendrimers building. The target (confidential) is a nutraceutical additive for farm animal food.



Glycodendrimers against Biofilm

❖ PA-control 2012-2015



Goal: Identify the best *Pseudomonas Aeruginosa* (PA) lectin ligand through the screening of a large library of natural polysaccharides and oligosaccharides issued from manufacturable processes and then incorporate these carbohydrates in multivalent macromolecular structures to obtain the best avidity against PA Lectins.

Partners: Elicityl (Project Leader), Laboratory of structural and functional glycobiology in Lille, Lyon Institute of nanotechnology and "Institut des biomolécules Max Mousseron" in Montpellier.

Application: anti-infectious application in cystic fibrosis, treatment of nosocomial infection by PA and even water treatment

ELICITYL's Partnership/license opportunities

Elicityl is looking for partnership opportunities to develop further innovative products. The products are already patented, elements of a proof of concept exist and the company needs partners to develop, commercialize and sell the products.

Natural Carbohydrates as antiviral feed additive in poultry

Context: Poultry is often suffering from viral infection (Avian flu, Newcastle virus, Coronaravirus) during its breeding, generating diarrhea, loss of weight, and even death. Vaccines are not covering the broad spectrum and human drugs are prohibited. One solution could be natural Carbohydrates.

Our Carbohydrates are coming from a green algae, *Caulerpa Racemosa*, produced by aquaculture in Asia.

Outcome: They prevent the virus replication through inhibition of viral adhesion and entry on target epithelial cells. Studies have been done with success on chicken and mice infected by an Avian flu virus

Advantage: the carbohydrates are comestible and sustainable, and can be administrated to the poultry without risk for human consumption.



Sea grape production showing growth after 6 weeks with harvested section (front right)

The above project is an example of application of CARBINFEC

CARBINFEC: A successful R&D program (2007-2011)



Goal: Identification and development of oligosaccharides molecules from biomass, inhibiting virus (Influenza, Dengue, Hepatitis C and B) attachment and stopping their entry into target cell.

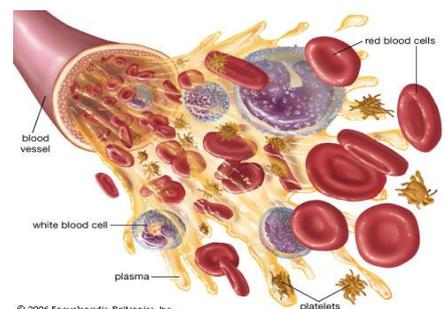
Partners: Elicityl (project leader), Kalys, Cermav-CNRS, UMR CNRS/CEA/UJF, INSERM U758, Medicine University of Lyon.

Outcomes:

- Oligotech®: Library of new molecules available up to pre-industrial scale
- One patent on a sugar family and several publications
- New inhibitors of the "Avian Flu virus" including the above program
- Hundred of academics and company customers worldwide

Solutions for plasma securisation

Elicityl is actively working on new solutions for medical devices aimed to secure plasma sources and to favor organ transplant sustainability. Other applications could be therapeutic plasma, blood derived drugs manufacturing...



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