



HEMORGAN

USING MARINE WORM HAEMOGLOBIN FOR DONOR ORGAN CONSERVATION

The object of the HEMORGAN project was to use an oxygen carrier derived from the extracellular haemoglobin of the marine worm "Arenicola marina" to ensure optimum conservation of organs prior to transplant.

Unlike vertebrates, this marine worm possesses extracellular haemoglobin molecules (HbAm) which are not contained within red blood cells, making them compatible with all blood groups and efficient oxygen carriers. These properties are of particular interest in the field of organ transplant.

In addition to the urgency surrounding such operations, a lack of donors and issues of compatibility are themselves often compounded by the problem of protecting the donor organ from cell necrosis and tissue fibrosis, which result both from an interruption in blood supply and preservation of a graft under hypothermic conditions.

The HEMORGAN project was thus aimed at developing an oxygen carrier, derived from marine worms produced in industrial quantities, which would be able to secure designation under the medical device category, "Annex Therapeutic Product", for the conservation of organs.

The project successfully perfected Hemo2life®, a solution based on marine worm haemoglobin, which improves the quality of grafts awaiting transplant. This solution should become indispensable in the coming years.

During the course of the project, 17 employees at the Hémarina Company worked on Hemorgan in addition to ten CNRS and INSERM researchers on the academic side. The project has been the subject of 5 patents, a scientific publication in the "American Journal of Transplantation"* in 2011, and 6 presentations at scientific symposiums.

The Hémarina Company is hoping to obtain authorisation shortly from the French national drug safety agency (Agence Nationale de Sécurité du Médicament - formerly AFSSAPS) to commercialise the product, which means it should be available for use in clinics as from the second half of 2012. A commercialisation contract was signed back in 2010 with the Keocyt Company for distribution of the product in Europe.

An abstract of the work carried out as part of the Hemorgan project is available to read in the "American Journal of Transplantation".

*(Thuillier et al., Volume 11, Issue 9, pages 1845-1860, September 2011)

Partners

COM_PROJECTS_CATEGORIE_PARTNER_ENTREPRISES

Hemarina, Morlaix [\[Project Developer\]](#)

Research centers

CHU, Poitiers
Station Biologique de Roscoff

Funders

- Agence Nationale de la Recherche
- Conseil régional de Bretagne
- Conseil départemental du Finistère

Labelisation

20/04/2007

Overall budget

3 027 K€

