

The Pays de la Loire Biotechnology Matrix



International meetings

NAT (Nantes Transplant News) brings together world specialists in Nantes every year in the field of fundamental applied immunology in allotransplantation and xenotransplantation.

Nuclear Medicine Tomorrow This international symposium is open to international specialists in three disciplines: cardiology, oncology and neurology as well as those working in nuclear medicine.



Large Structuring Projects

The Institute of Therapeutic Research in Nantes

(L'Institut de Recherche Thérapeutique (IRT)). A 9,000 m² building for IRT was set up in the heart of the Nantes University hospital grounds, reflecting the strong development of the health/biotechnology research cluster in Nantes over the last 10 years.

The Institute of Health Engineering Research in Angers

(L'Institut de Recherche en Ingénierie de la Santé (IRIS)) Integrated into the Angers Faculty of Medicine,

this institute brings together health engineering research teams.

Micro-technology and Health Unit in Le Mans

This unit, led by the Le Mans Centre for Technology Transfer (CTTM) conducts research and development in the field of biomedicine and biomaterials: clean rooms, in vitro analysis laboratories, preparation laboratories, and more.

NNOUVELLE VAGUE - RCS NANTES B 339 786 493. Photos: P. B. Fourny - J.M. Mouchet / Région des Pays de la Loire

In the last 10 years the Pays de la Loire has seen the emergence of one of the most dynamic biotech clusters in France. This rapid growth is due to the presence of two University Hospitals in the region, in Nantes and Angers, which are breeding grounds for the creation of innovative health and biotechnology businesses.

The number of INSERM (French National Institute of Health and Medical Research) units has multiplied tenfold in 10 years, resulting in the accelerated development of micro-companies, supported by niche markets and requiring rapid development. In this way Nantes-based Vivalis, which was born of a connection between the Cholet-based group Grimaud (aviculture specialist) and a team of researchers, is multiplying its collaboration agreements with foreign laboratories in its sector of activity: the production of vaccines from egg embryos.

Other businesses are just as promising: Atlangène Silliker, TC Land, Clean Cells, LGNA and of course Eurofins in Nantes. This family business (Gilles Martin profited from a patent registered by his parents who were INSERM researchers) has grown from 3 employees in 1987 to more

than 7000 employees in 29 countries across the world. As a result, Eurofins has become the world leader in the analysis of food products, pharmaceuticals and the environment, and is emblematic of this cluster of excellence.

« A major health cluster

- Over 500 health companies
- 40 biotech health companies (5 start-ups set up each year for the last 5 years)
- INSERM units which have multiplied tenfold in 10 years (900 researchers and more than 28 specialist research units)

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**INNOVATION
VITALE**

The world's
only cyclotron!

Nuclear medicine has a high energy (70 MeV) cyclotron available in Nantes/Saint Herblain for use in the battle against cancer.

This international-level equipment is unique in its technical capacities and characteristics.

The Arronax cyclotron gives new impetus to this discipline which facilitates the destruction of cancerous micro tumours which have spread through the body after initial treatment. Arronax, through its energy and its exceptional production capacity,

will produce new highly-effective radio-isotopes for imaging in cancer treatment, such as gallium 68 or copper 67.

Experts in alpha immunotherapy, the INSERM U892 researchers have great expectations for the production of astatine 211. These alpha particles, which are accurate to within one tenth of a millimetre, are extremely effective but at the moment are rarely available. Arronax will be one of very few cyclotrons in the world to produce them.

Pioneer in the setup of clinical research training institutes

A unique approach in France in terms of organisation of the health sector, the CHU (University Hospital Centre) in Nantes includes four health institutes involving clinical research training:

- **Institut du Thorax (Thorax Institute)**
 - **ITERT**, Institut de la Transplantation et de la Recherche en Transplantation (Institute of Transplantation and Transplant Research)
 - **IRCNA**, Institut Régional du Cancer de Nantes Atlantique (Nantes Atlantique Regional Cancer Institute)
 - **IMAD**, Institut des Maladies de l'Appareil Digestif (Institute of Diseases of the Digestive System)
- A precursor and model example of health sector organisation, these institutes bring together clinics and training centres in one research location in order to break down the barriers between knowledge and patient service practices, bring research and patients closer together and reduce the time lapse between discovery and application.

International leaders and promising start-ups

A dynamic network of companies and SMEs in the health sector is spread throughout the whole region, and interface with the most important economic sectors in the region.

- **Biomedical or medical systems including diagnostics:**
 - Biomedical: Sotec Médical, Biomatlante, BSN Medical, Kéosys, Newclips Technics
 - Diagnostics: TC Land
- **Biotechnologies and production of active biological products:**
 - Vivalis, Clean Cells, Atlanchim Pharma, Chelatec
- **Pharmaceutical companies - veterinary:**
 - Laboratoires Brothier, Intervet, Sogeval
- **Specialist health products for nutrition:**
 - Alphabiotech, Innov'alg, Nat'Innov, Phosphotech, Veg'Extra and others
- **Applied information and communication technologies for health:** Theleme, Sephira, IDBC and others
- **CROs, services (industry, health) and advice:**
 - Porsolt & Partners Pharmacology, Biofortis, Atlanstat, Atlanbio, Atlantic Bone Screen, LGNA, Eurofins Scientific and others

Synergies to boost competitiveness

Atlantic Biotherapies DU BIODIAGNOSTIC AU BIOMÉDICAMENT Based in Nantes and Angers,
Atlantic Biothérapies brings together a large range of research teams, health professionals and 38 high-tech specialist health and health-related biotechnology companies.

The themes being researched are the following: gene and cell therapy, immunology and immunotherapy, molecular engineering, cellular engineering and tissue engineering.

The region also participates in two interregional networks for genome and post-genome research and oncology.

OUEST-GÉNOPÔLE®

which links the Pays de la Loire and Brittany regions, is a strategic centre for higher education,

research and economic development in four areas: sea, agriculture, health and biotechnology.

This dynamic network brings together 55 research units and 2,000 people including 800 researchers and lecturers/researchers.

LE CANCÉROPÔLE GRAND OUEST (THE WESTERN CANCER CENTRE)

This centre is shared by four regions. It develops work in close association with clinicians and researchers in order to promote innovation in diagnosis and discover new cancer treatments.