



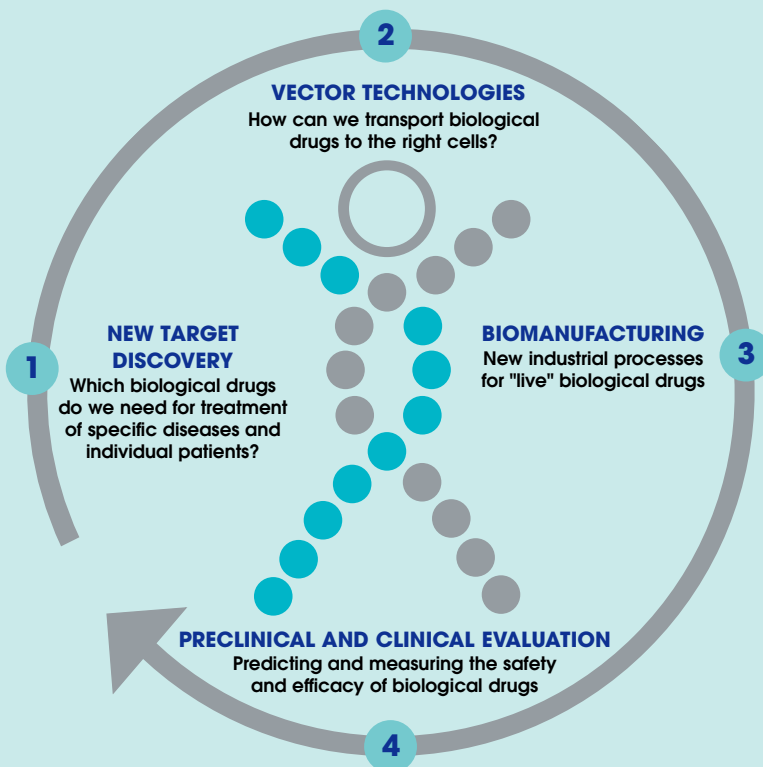
Atlantic Biotherapies
FROM BIODIAGNOSTICS TO BIOMEDICINE

From drug discovery to clinical evaluation, the "Atlantic Biotherapies" Competitiveness cluster brings together all the stakeholders in the **development of biological drugs**.

Encompassing **15% of France's biotech companies** and backed up by 28 highly specialized academic research units, the Pays de la Loire region's Competitiveness cluster (centered around the cities of **Nantes** and **Angers**) is responding to new challenges in human healthcare.

Set against a background of **global competition**, the key issue is to discover and produce **the drugs of tomorrow** in Europe and here in Western France in particular.

FROM THE PATIENT TO THE PATIENT - TOWARDS PERSONALIZED MEDICINE



30	Companies
900	Specialized researchers
14000	Healthcare professionals
2	Universities
2	University medical centers
2	National cancer centers

THEMES:

- Cell and gene therapy
- Immunology and immunotherapy
- Molecular, cell and tissue engineering

BUSINESS ACCOMMODATION AND DEVELOPMENT STRUCTURES:

Bio Ouest Laënnec (Nantes) :

- 1 university medical center
- 1 second-stage company biocubator
- 1 business park

Bio Ouest Ile de Nantes (Nantes) :

- 1 university medical center
- 1 Biocubator
- Therapeutic Research Institutes

Angers / Biopark :

- 1 university medical center
- 1 biocubator
- 2 fully-equipped laboratories

All coordinated by **Atlanpole**, (the technopole for the "Nantes Atlantique" area) and **Angers Technopole**, and linked to other top-class, European biotech partners:

Heidelberg (Germany), **Cardiff** (UK), **Milan** (Italy) and **Tartu** (Estonia)...

...for international ambition

Clinical medicine - the mainspring for biotherapies

ACTIVE CLINICAL RESEARCH

- **24** original articles published in *The New England Journal of Medicine* (Since 1990)
- **17** original articles published in *The Lancet* (Since 1990)
- More than **800** hospital-based clinical research programs in 2004:
 - Including 150 managed by the clinical investigation centers
 - France's **2nd** highest cancer patient inclusion capacity, with **2** Cancer Centers (more than 1000 patients in 2004)

CLINICAL PLATFORMS AND ASSOCIATED RESOURCES

- Tumor banks (part of a transregional network)
- The Cell and Gene Therapy Unit
- Immunomonitoring platforms
- Transregional platform for transfer to clinical medicine (Cancéropôle Grand Ouest)
- Validated clinical databases
- Large animals preclinical facility

SPECIFIC FEATURES

- Europe's leading **kidney transplant** centre (ITERT)
- **Clinical Investigation Center for Biotherapies** (Nantes University Medical Center, awarded INSERM status in 2005)
- Reference centre for **rare disease management** (Nantes University Medical Center: genetic cardiac rhythm disorders)
- Institute-based organizational structure: **research at the patient's bedside**

Atlantic Biotherapies brings together 4 institutes associating academic research units, clinical research, clinical care and start-up companies for accelerating transfer towards treatments.

- Institute for Transplantation and Transplant Research (ITERT)
- Thorax Institute
- Nantes Atlantique Regional Cancer Institute
- Institute for Digestive Tract Disease

PRECLINICAL RESEARCH

In addition to animal houses for rodents and larger animals linked to research units, the **Atlantic Biotherapies** cluster includes the **Centre for Preclinical Biomedical Research** at Nantes Veterinary School.

This centre offers a range of testing and exploratory services unique in Europe, with research organized around 5 platforms linked to a cell and gene therapy centre (RIO platform):

- Experimental surgery and animal houses
- Pathology service
- Medical imaging
- Analysis and diagnostics
- Molecular biology

BIOMANUFACTURING: PRODUCTS FOR CLINICAL MEDICINE

Atlantic Biotherapies has drawn together a dynamic skills network for pharmaceutical-grade production of biological drugs:

- **Vivalis**: vaccine and recombinant protein production using proprietary cell lines
- **Biomatlante**: bone substitutes
- **UTCG**: Nantes University Medical Center's cGMP Cell and Gene Therapy Unit
- **Viral Vector Production Unit**: AAVs for clinical gene therapy (due to open in 2006)

Assisted by know-how from:

- **Clean Cells** (pharmaceutical quality control of cell-derived products)
- **Ceris Ingénierie** (design and construction of cGMP units)
- **Filavie, Biovac** (autogeneous vaccines production)

And the forthcoming commissioning of an industrial platform:

- **The Arronax Cyclotron**: production of novel radionuclides, notably for radio-immunotherapy (due to open in 2008)

COMPANIES

BOARD OF DIRECTORS

VECTOR TECHNOLOGIES

A wide range of drug delivery tools :
Viral and synthetic vectors, functional surfaces, naked DNA,...

Main companies

- ATLANCHIM
- CHELATEC
- IN CELL ART
- SURFACTIS TECHNOLOGIES
- LABORATOIRES BROTHIER

NEW TARGET DISCOVERY

Screening platforms (protein & DNA chips), animal models (from rodents to primates), *in vitro* discovery and validation tools.

Main companies

- GENESCORE
- ATLANTIC BONE SCREEN
- PROTNETEOMIX
- TcLAND
- MYCOBIOTICS
- CYTOKINE TECHNOLOGIES*
- MITOSIS-Tech*
- IGNA

BIOMANUFACTURING

Expertise on cGMP compliance for the manufacturing of various bio-products : cells, viral vectors, vaccines, bio-materials, recombinant proteins, antibodies.

Main companies

- CLEAN CELLS
- BIOMATLANTE
- FILAVIE
- INTERVET Pharma
- BIOVAC
- VIVALIS

Main companies

- ATLANSTAT
- LAENNEC TEK
- BIOFORTIS
- DB-BioRun
- BIOLIVESCALE
- LGNA
- SR2B

PRECLINICAL AND CLINICAL EVALUATION

Industry-oriented, structures for preclinical/clinical research and bio-monitoring.

* To be created in 2006

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