



Grenoble isère-france

Diagnosics

Grenoble-Isère, towards advanced diagnostics for new therapeutic approaches

➡ Grenoble-Isère France is where the life sciences and the exact sciences come together. This dynamic area has been fertile ground for the life sciences over the past two years, with more than €400 million in investments. Various research projects, industrial development programs, and local initiatives targeting the life sciences have also been rolled out, including NanoBio, which will see €41 million in investments over six years. These investments are in addition to funding for the micro- and nanotechnologies sector, which has racked up €4 billion investments, with another €3 billion to come in Grenoble-Isère alone.

With nanoscience poised to revolutionize life science and healthcare, Grenoble-Isère is one of the few places in Europe to possess the range of scientific disciplines required to capitalize on such developments for diagnostics. All the necessary skills are present to:

- produce miniaturized tools for the study of living organisms and early diagnostics,
- study biocompatibility,
- work out better the interface between live cells and electronic devices,
- create nano-objects inspired by their biological counterparts,
- find nanotechnology applications in healthcare,
- and develop new diagnostics tools and treatments.

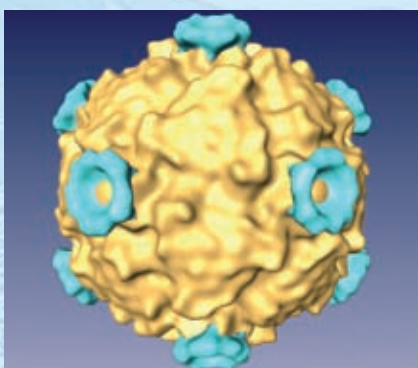
Better diagnostics for better therapeutics!

➡ Leaders in academia and industry

bioMérieux, CEA-Grenoble, CEA-Léti, Centre of Integrated Structural Biology, CNRS, Creacell, CRSSA, EMBL, ESRF, Fluoptics, Genostar, Grenoble Institute of Technology (INP Grenoble), Grenoble Science University (UJF), Grenoble University Hospital, HC-Forum, IAB, Institute of Structural Biology, ILL, ImmunID, Inria, Inserm, Mellitech, Protein'eXpert, Roche Diagnostics, STMicroelectronics, SynapCell, Tronics Microsystems, Thales Electron Devices, Trixell, Valtronic Technologies...

➡ Major R&D initiatives

LyonBiopole, Minalogic, Nanobio, Nano2life, Minatec, Grenoble Neurosciences Institute, RTRA nanosciences.



➡ Nano-materials and nano-structures

In vitro and in vivo diagnostic tests: molecular imaging probes. Nanocaracterisation platform.

➡ Imaging for diagnostics

Global leaders in medical imaging and diagnostics, medical beamline using synchrotron light, and imaging platform dedicated to small laboratory animal. Specificities: IR, X and gamma rays.

➡ Microsystems (lab-on-chip, cell-on-chip)

Simultaneous in vitro biomolecular and multiparameter analyses on small sample quantities. Early diagnostics tools development. Microfluidics developments.

➡ High throughput and high density diagnostic and detection

Screening and proteomics platforms, unique in France and clinical proteomics platform. Automation and robotization of processes for crystallization and detection, isotopic labelling, structural resolution (X-ray, neutrons, NMR), data management, and bio-computing.

➡ Bioinformatics

Conception and developments of algorithms and informatics systems, i. e. turning experimental data into biological knowledge, such as DNA and protein sequences, but also phylogenetic trees, and gene interaction networks or metabolic pathways.

➡ Unique interdisciplinary educational programs

- Doctorate in Biomedical Imaging
- Master's in Health and Drug Engineering: diagnostic and therapeutic biotechnology and engineering
- Master's in Bio-computing
- Master's in Biotechnology Management.

➡ Flagship projects

- **ADNA:** Advanced Diagnostics and New therapeutic Approaches, focus on new therapeutic vaccines for infectious diseases and cancer - Mérieux Alliance.
- **Clinatec:** Experimental clinic for the use of nano-technologies in neurosurgery - CEA, Inserm, Grenoble University Hospital.
- **ESRF medical beamline:** Center for clinical experimentation using synchrotron light to develop medical imaging and X-ray radiation therapy applications - Inserm, ESRF.
- **In-Check Platform:** Point-of-care testing system developed in partnership by STMicroelectronics and CEA-Leti/DTBS.
- **Intuiskin:** Skin testing microsystem for dermo-cosmetic diagnostics.
- **Minalogic/Imalogic:** digital imaging devices for medical radiology and infrared imaging - Sofradir, STMicroelectronics, Trixell, Ulis, CEA-Leti.
- **Nanocancer:** New therapeutic approaches to cancer - Canceropole Lyon Auvergne Rhône-Alpes.
- **Protool:** Development of a system to perform nanobiopsies and obtain the proteomic profile of the sample - CEA-Leti/DTBS.
- **Small-animal imaging platform:** Photonic microscopy and cellular imaging for small laboratory animals - IAB, Inserm, Rhône-Alpes Genopole.

A range of dedicated facilities available for your project

➡ **Biopolis:** Biotechnologies business incubator that offers the use of common services and technological facilities including a molecular biology room, a cell culture room, and more.

➡ **Minatec - High Technologies Building:** This shared laboratory offers 10,000 square meters of workspace and clean rooms to corporate R&D teams striving to transfer technology in the micro- and nano-technologies.

➡ **Nanobio:** Innovation cluster focusing on biology and healthcare applications for the micro- and nano-technologies. Nanobio will bring in innovative businesses and research teams in the field to participate in common research projects.



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