
LES RENDEZ-VOUS
CARNOT
2022
FRANCE
2030
RÉSEAU SATT

LES RENDEZ-VOUS CARNOT 2022

TECHNOLOGICAL INNOVATIVE SOLUTIONS

FROM OUR BIOTECH PORTFOLIO

TOCOPHEROL

Technology matured by AQUITAINE SCIENCE TRANSFERT Accélérateur d'innovations

New lipophilic formulation of α-tocophérol

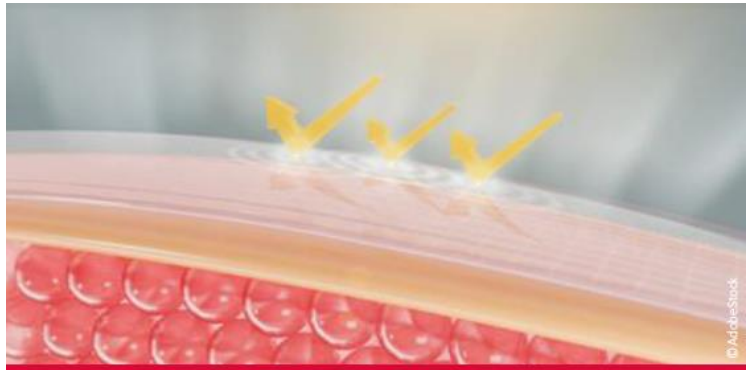
#Antioxydant | #Formulation | #DrugDelivery

Challenge:

Topically applied vitamin E α tocopherol can inhibit UVR induced DNA damage. However, α tocopherol has several limitations including poor photostability and poor topical formulation solubility due to its hydrophobicity. Retention in the stratum corneum is also a limitation.

Innovative solution:

New lipophilic formulation of α-tocopherol coupled to a nucleolipid through an ester. Can be considered as a Prodrogue.



PARTNERSHIPS

License and/or R&D collaboration (Possible Co-funding)

CONTACT BUSINESS SATT NETWORK

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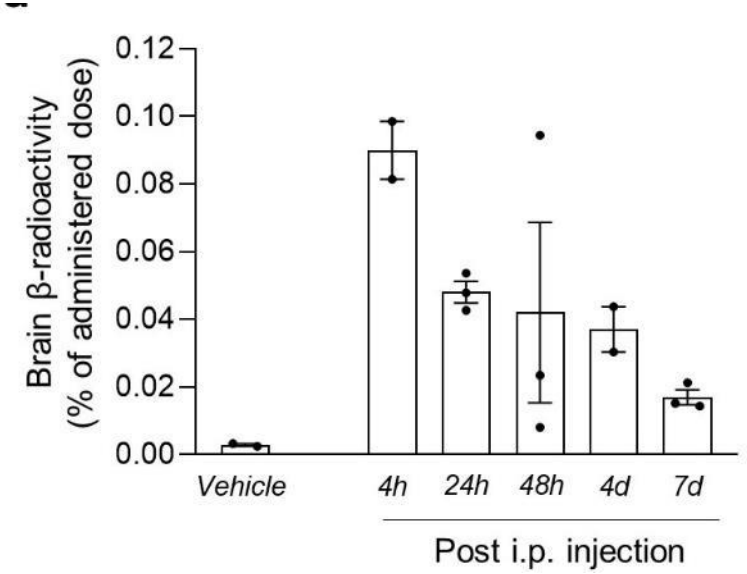
Nano4Schizo

Technology matured by AxLR Occitanie Méditerranée

The research team has developed a new strategy based on the use of camelid single domain antibodies (nanobodies) as vectors able to reach target receptors in brain. Nanobodies penetrate in the brain and remain stable for several days.

#Nanobody | #TargetingrBrain | #Vectorisation

Limiting glutamate signaling in the forebrain is a potential strategy to treat schizophrenia. The activation of G protein-coupled metabotropic glutamate 2 receptor (mGluR2) to normalize altered glutamate neurotransmission has emerged as a novel therapeutic approach. Bivalent and bi-specific nanobodies highly selective positive modulators of mGluR2 homodimers were designed and tested in schizophrenia murine models. After ip injection at 10mg/kg, the cognitive functions were restored. In addition, using labeled nanobodies, presence of radioactivity in the brain was detected up to 7 days, following ip injection.



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ag-OT

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

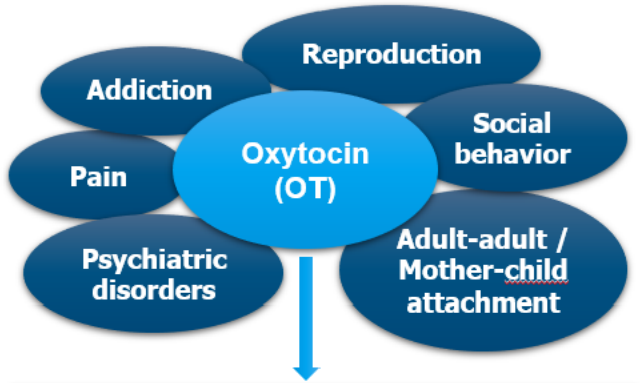
We propose the first non peptidergic full nanomolar agonist of oxytocin receptor to treat several central diseases and social impairments such as autism, addiction, anxiety or pain and neuropathic pain.

#CNS | #Addiction | #Psychiatry

We developed and patented what we believe is the first non peptidergic agonist of oxytocin receptor with…

- Improved activity over endogenous oxytocin (sub-nanomolar activity)
- Great selectivity vs V1a and V1b
- Central activity
- Positive results in different in vivo models:
  - restores social interaction in an **Autism model** (Opmr-/-),
  - prevents the **Alcohol Deprivation Effect**
  - shows a significant long-lasting **anti-hyperalgesic effect**,

Main market targeted : Autism Spectrum Disorders (ASD), Addiction, Alcohol Use Disorder (AUD)



- **Involved in regulation of multiple behaviors** : labor, lactation, maternal link, social interaction, trust, anxiety, addictions…
- **Therapeutic potential:** Autism, Alcohol Use Disorder, Pain management, Anxiety, Depression, Schizophrenia…

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LES RENDEZ-VOUS CARNOT 2022

TECHNOLOGIES BIOTECH

RESEAU SATT

DELIS

Technology matured by CONECTUS

We propose selective high affinity σ1 agonists to target neurodegenerative diseases as Schizophrenia (CIAS), ALS, Alzheimer's Disease, Huntington disease…

#CNS | #SmallMolecule | #Neurodegeneration

We propose NCEs with…
- High affinity to σ1 & high selectivity σ1 vs σ2 and other off targets
- Good ADME-Tox profile
- **Bioavailability** (cross the BBB) allowing in vivo efficacy via P.O. administration
- **Good pharmacological profiles** in cognitive models **CIAS** & **ALZ**
- Efficacy observed in a cognitive impairments model using chronic PCP injection (Subcontractor)
- Preliminary effect on locomotor impairments in **ALS ZEBRAFISH model**(Subcontractor)

This project is developed with the LIT (Unistra – CNRS, Strasbourg) and Tangui Maurice, Sigma 1 expert (MMDN – University of Montpellier, INSERM, EPHE)

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EVAC

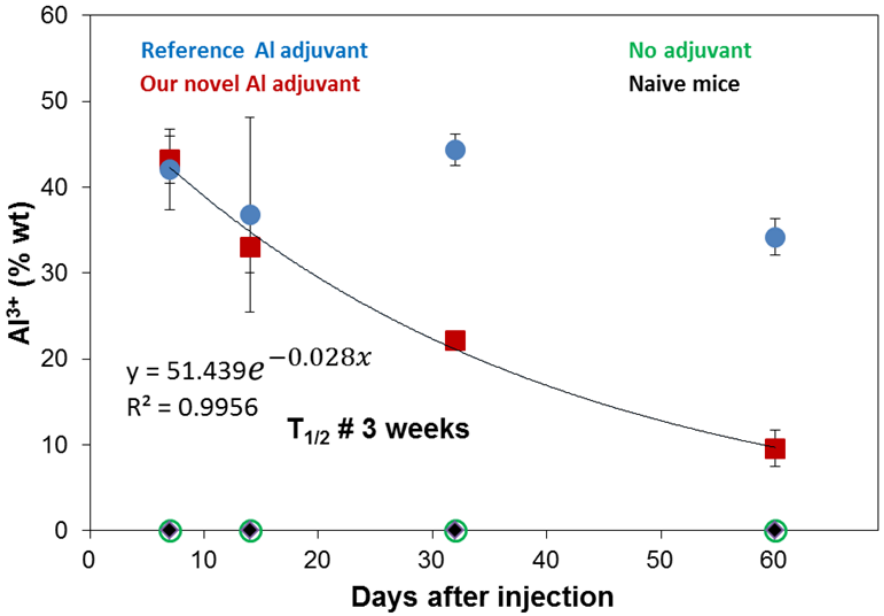
Technology matured by SATT PARIS-SACLAY

Novel vaccine adjuvant that entrapp and protect antigens, inducing more antibodies while being fully resorbable.

#Vaccin | #Adjuvant | #Resorbable

A novel aluminum adjuvant has been developed and patented, strikingly different from canonical $Al(OH)_3$, with many advantages and additional properties:

- **Inducing more antibodies** (from 50 to 300 %)
- **Resorbable** residual Al at the injection site is negligible
- **Immunogen entrapped** within the matrix that is formed in non-denaturating conditions for biological molecules
- **Scaling-up** easily implemented with sterile processes.
- **Stable vaccine formulation:** formulation stored 15 months at 4°C induces similar immune response than fresh formulation



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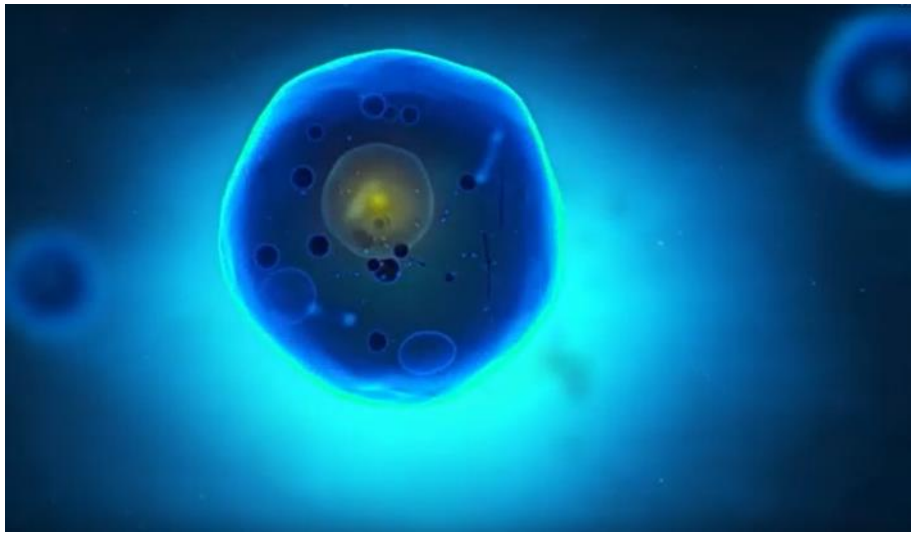
HEALTHPROBE

Technology matured by Linksium technology transfer & startup building Grenoble Alpes

Cell health monitoring with a synthetic biosensor

#FRET | **#Genetically-encoded fluorescent reporter** | **#Real time & spatiotemporal readout**



HEALTHPROBE technology extends analytics beyond classical cell viability tests.

The genetically-encoded fluorescent bio-sensor detects cellular dysfunctions already at a premature, not yet detrimental state, including transient or low-level adverse effects. Such fine-tuned analysis of cellular health is a powerful tool to evaluate toxicity or therapeutic efficiency of individual compounds or more complex mixtures.

The final goal is to have a set of standardised tests on both human cell lines and primary cells.

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RBP-CAPTURE

Technology matured by Linksium technology transfer & startup building Grenoble Alpes

The full potential of RNA for purification

#ProteinPurification | #Bio-production | #IncresedYield

The innovation at the heart of the RBP-CAPTURE technology lies in the exploitation of a unique and highly specific interaction between the RBP-C protein and an RNA. In this technology, RBP-C is fused to the protein of interest to allow its purification. This purification is done by means of a bait RNA itself bound to a resin.

Initial results show that RBP-Capture is at least as efficient as TAP purification of the same protein, and that it greatly improves purity and purification yield compared to antibody purification.

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RIPASH

Technology matured by SATT LUTECH

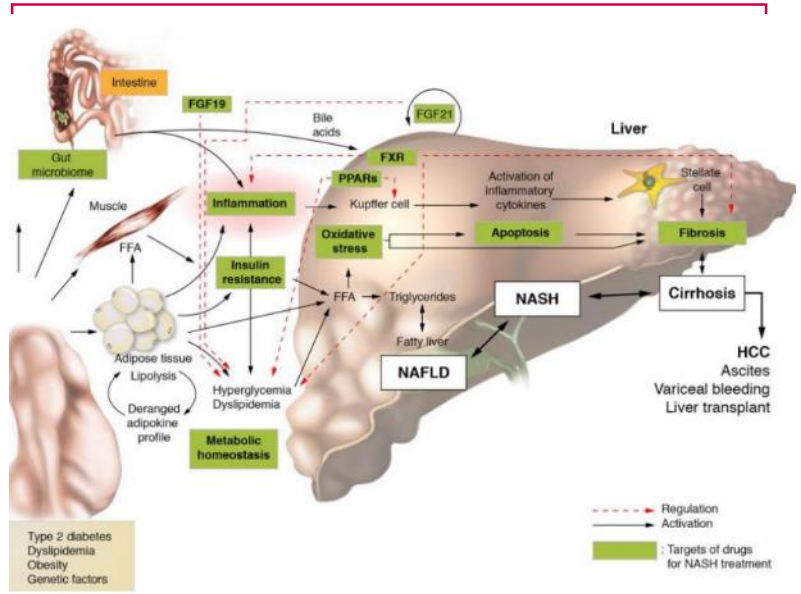
RIPK-1 inhibitor as therapeutic agent to treat NAFLD and prevent NASH.

#MetabolicDisorder | #NASH | #NAFLD

Jérémie Gautheron, researcher from Sorbonne Université, has found that necroptosis occurs in hepatocytes during NAFLD. His group has shown that RIPK1, a gatekeeper of the necroptosis pathway, is increased in the serum of NASH patients.
It can be inhibited by a RIPK-1 inhibitor to reduce liver injury, inflammation, fibrosis and steatosis. These results highlight the potential of RIPK1 as a therapeutic target in NAFLD.

The compound was tested both *in vitro* and *in vivo:*

- In primary human steatotic hepatocytes, RIPK-1 inhibitor exhibits degreasing properties.
- In high-fat diet fed mice, it induces a reduction of liver injury, inflammation, fibrosis, characteritic of NASH, as well as of steatosis.



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ANDROID

Technology matured by OUEST VALORISATION Ressources d'innovation

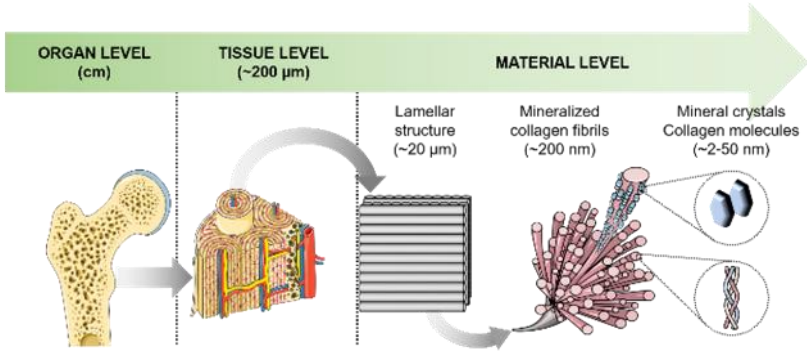
New therapeutic solution for the treatment and preventionof bone fragility.

#Unimolecular dual GIP/GLP-2 analogue

#BoneMaterialProperties

#BoneFragility

Due to ageing of the population, bone frailty is dramatically increasing worldwide. Although some therapeutic options exist, they do not fully protect or prevent against the occurrence of new fractures. All current drugs approved for the treatment of bone fragility target bone mass. However, bone resistance to fracture is not solely due to bone mass but relies also on bone ECM material properties, i.e. the quality of the bone matrix component. Here, a series of unimolecular dual GIP/GLP-2 analogues have been developed with the first-in-class molecule, GL-0001, capable of enhancing collagen maturity and directly improving bone biomechanical response and resistance to fracture in vivo. GL-0001, and more broadly unimolecular dual GIP/GLP-2 analogues, represent a new therapeutic solution for the treatment and prevention of bone fragility that targets bone material properties rather than bone mineral density. This innovative pathway represents an interesting and complementary way to the conventional therapeutical arsenal in order to treat bone fragility patients.



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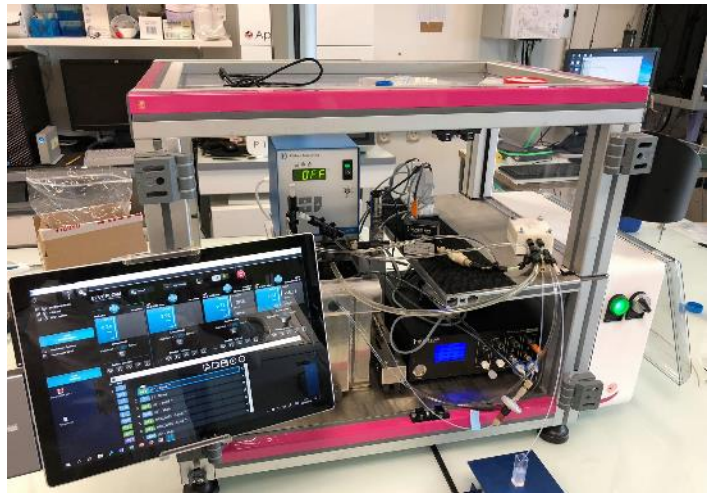
GALECHIP

Technology matured by OUEST VALORISATION Ressources d'innovation

Galenic Lab-on-a-Chip concept for lipid nanocapsules production

#Microfluidics #Formulation #LipidNanocapsules

The continuous production of nanoformulations assisted by microfluidics has drawn a growing interest because of the high reproducibility, low batch-to-batch variations, narrow and controlled particle size distributions and scale-up ease induced by this kind of processes. Besides, microfluidics offers opportunities for high throughput screening of process parameters and the implementation of process characterization techniques as close to the product as possible. In this context, an instrumented microfluidic pilot considered as a Galenic Lab-on-a-Chip (GALECHIP) has been developed to produce nanoformulations, such as lipid nanocapsules (LNCs), under controlled process conditions. Thus, LNCs are successfully produced by a phase inversion composition (PIC) process with highly monodispersed sizes from 25 nm to 100 nm and formulated using chips manufactured by 3D printing and deep reactive ion etching (DRIE) technologies. Finally, PIC being a low energy process, it allows the encapsulation of thermo- and/or mechano-sensitive molecules.



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P-CARGHO

Technology matured by SAYENS SATT CATALYSEUR D'INNOVATIONS

New method for purifying recombinant proteins

#Purification #Recombinantprotein #AffinityChromatography

New protein tag to be linked to a recombinant protein of interest in order to purify it by affinity chromatography. This system allows a one-step column purification with a much higher purity rate and a similar yield to conventional methods. In addition, elution is carried out with inexpensive and non-toxic lactose :

- It helps to solubilize proteins of interest usually insoluble
- Highly specific method (low contaminant content), higher purity rate
- Use of a tag easily cleavable and separable from the protein of interest
- One-step, low-cost purification (lactose elution)
- No risk for the user
- Near-zero environmental impact predicted (no toxic compounds)

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GPC4 NANOBODIES

Technology matured by SATT SUD-EST
ACCÉLÉRONS LE TRANSFERT DE TECHNOLOGIES

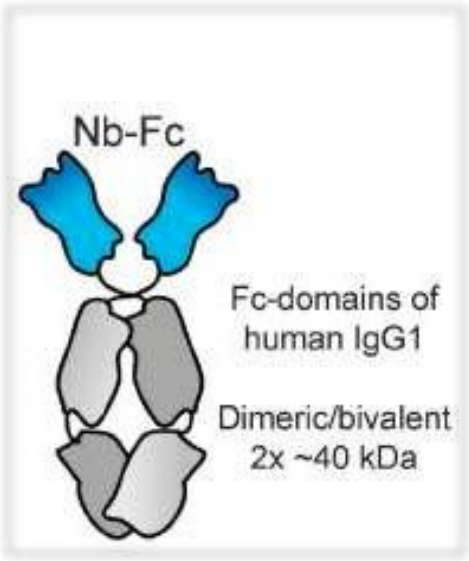
Use of nanobodies to produce safer stem cell for cell therapy

#IPSC | #CellTherapy | #Parkinson

It is well known and described that differenciated cells from IPSC may derived and produce tumors.

This opportunity is based on the demonstration that inhibition of cell surface GPC4 on IPSC by a specific nanobody results in a safe-PSC state which both reduces significantly the transplant tumorigenesis and increases the cell differentiation efficiency.

Moreover it has been shown that this strategy can be used as cell therapy to treat Parkinson Disease using safe dopaminergic neurons produced by this technology.



nanobody

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LEISH-THER

Technology matured by TOULOUSE TECH TRANSFER

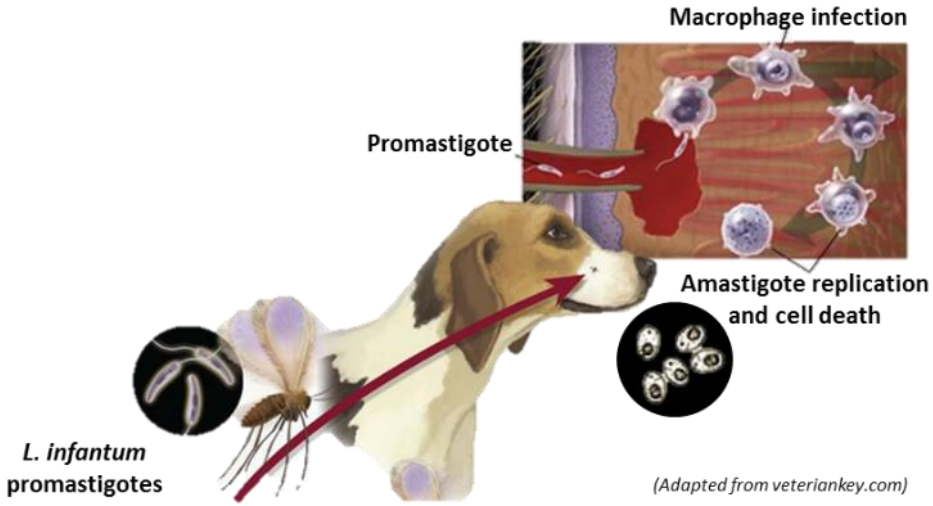
New pharmacophores against canine leishmaniosis

#Leishmaniosis | #Treatment | #DrugResistance

Canine leishmaniosis affects approximately 2,5 million dogs in Mediterranean areas each year (additional endemic areas include Latin America and Asia).
Existing prophylactic actions have limitations and side effects.

The invention consists in a new family of gold(I) complexes bearing N-Heterocyclic carbene ligands containing a fluorinated side-arm, able to inhibit leishmania growth.

- Advantages : classic 3 steps synthesis method, low-priced substrates, simple purification process
- Performances : laboratory scale: 100 mg production, IC50 on amastigote form: 100nM order, High Selectivity Index (CC50/IC50): 130 to 450 (compared to cytotoxic effect on macrophage cell line (CC50), higher than standard treatments (3 to 10 fold magnitude)



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Want to know more about our other innovative solutions ?

Contact us to discuss about your innovation needs and know more about how we transform public research into industrial innovative solutions

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RESEAU SATT

BOOSTER

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