Therapeutic programs

TECHNOLOGY

RESEAU SATT

DELIS

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

New sigma1 agonists to target cognitive & neurodegenerative diseases. Best-in-class small molecule, with higher safety and activity than competitors.

#CNS **#Neurodegeneration** **#SmallMolecule**

The endoplasmic reticular (ER) protein sigma-1 receptor has been implicated in many CNS disorders. The DELIS project led to the development of 2 chemical series of σ1 ligands receptor with proven efficacy as cognitive enhancers against cognitive deficits associated with Schizophrenia (CIAS) and Alzheimers' disease (ALZ)-type dementia.
We are looking for out-licensing our preclinical stage NCEs with…

- High affinity to σ1 & high selectivity σ1 vs σ2
- Good ADME-Tox profile, no off targets
- 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)

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TECHNOLOGY

RESEAU SATT

T-CNM

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

New targets and Gene Therapy approaches to treat CentroNuclear Myopathies (CNM)

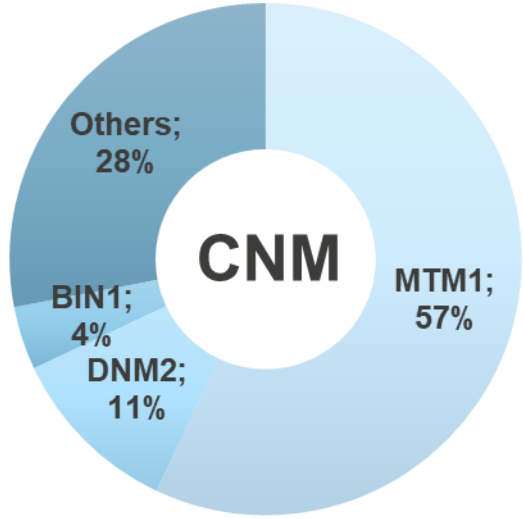
#RareDisease #GeneTherapy #Myopathy

Addressing CentroNuclear Myopathies with gene therapy via proteins identified as relevant target in CentroNuclear Myopathies. Our researchers work led to important discoveries for the management of CNM:

- **Dynamine2** (DNM2) play a central role in symptoms development in CNM patient. We patented the inhibition of this target with several approaches to treat all CNM forms. **> proof of concept available with ASO and shRNA approach in mice models**
- **BIN1 protein** (amphiphysin2) is related to MTM1 and DNM2 and could be relevant as a therapeutic target to treat all 3 main forms of CNM **> proof of concept available with gene therapy approach in mice models**
- **MTMR2** (MTM1-related protein) is part of the same protein family than MTM1 and is effective to treat MTM1 related muscle disfunction **> proof of concept available with gene therapy approach in mice models**

We propose a **patents portfolio covering these targets for CNM treatment.**

Mutations responsible for CNM



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TECHNOLOGY

RESEAU SATT

LINC

ASOs targeting a new long non-coding RNA in melanoma

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#Oncology **#ASO** **#ncRNA**

New treatment using antisense oligonucleotide therapeutics to target LENOX, a newly identified target found to be essential for melanoma.

Our researchers' work on gene regulation in melanoma led to consider LENOX lncRNA as a relevant therapeutic target. LENOX expression is upregulated in melanoma and is required for melanoma cell proliferation and survival.

We developed ASOs against LENOX and performed efficacy screenings and selection of the 5 best-performing ASOs. We are now performing a proof-of-concept study in mice model of melanoma.

Gambi et al, Cancer Res; 82(24) December 15, 2022

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TECHNOLOGY

RESEAU SATT

ADClink

Cell selective linker to increase ADC therapeutic window

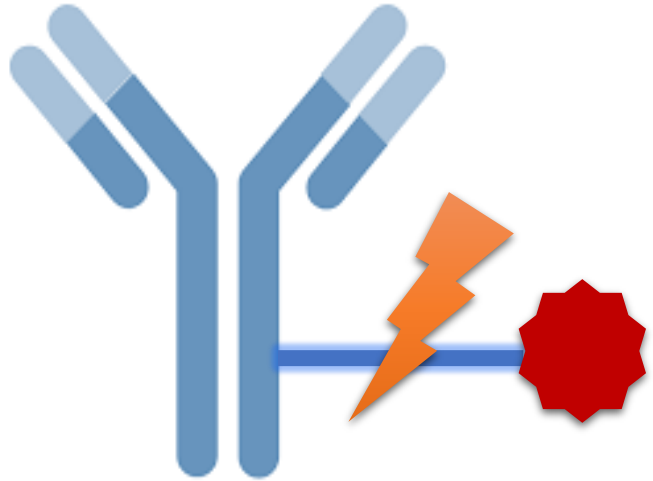
Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#Oncology **#ADC** **#linker**

The aim of the ADC-link project is to increase ADC therapeutic window by developing a linker that releases payload more selectively in the cancerous cell

Using cytometric screening technology, we identified new linker with unprecedented selectivity in breast cancer cells. A maturation program in ongoing and ADC are under synthesis to benchmark Val-Cit and lead structure on MMAE and less potent payloads.

We are now looking for a partner for a proof-of-concept program aiming at the development of ADC using this new linker.



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TECHNOLOGY

RESEAU SATT

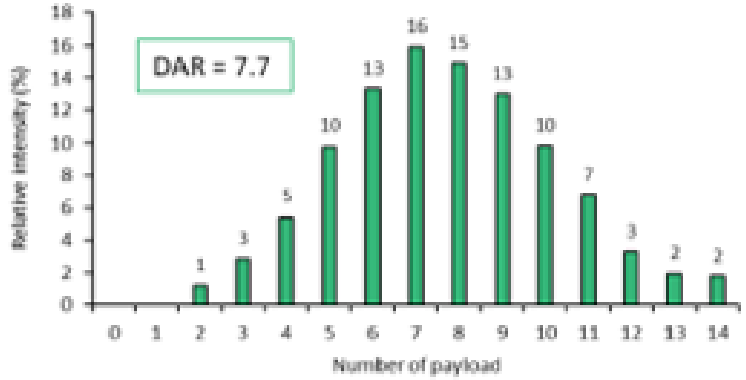
MuSyC

Linker-free analogues of antibody-drug conjugates

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#Oncology | #ADC | #linker

This technology offers linker-free analogues of antibody-drug conjugates. The production process is faster, safer and cost-effective. At last, these products present low side toxicities and a high therapeutic index.



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TECHNOLOGY

RESEAU SATT

Haemab

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

New antibody fragments for the treatment of arterial thrombosis

#Haematology | #Thrombosis | #Antibody

New antibody fragments for the treatment of arterial thrombosis (stroke, thrombotic purpura, coronary syndrome, stent surgery...).

Our approach is directed against a platelet receptor that is not currently targeted by commercially available products and prevents thrombus formation with an acceptable risk of bleeding.

A maturation program is ongoing, financed by Conectus, and we are looking for partner for a co-development

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TECHNOLOGY

RESEAU SATT

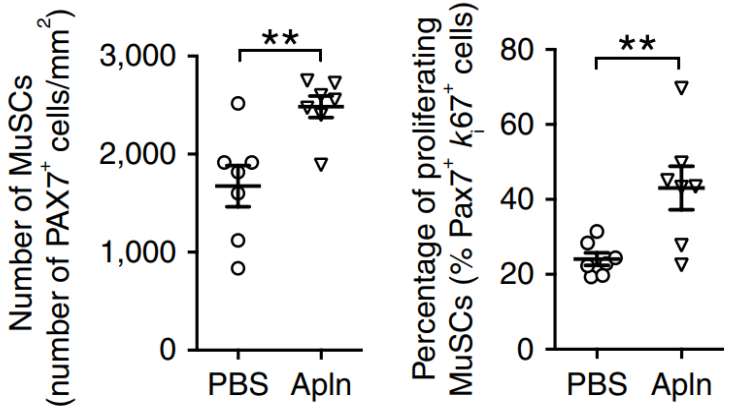
GlucoFap

New therapeutic stabilized peptide fluoroapelin-13 for the treatment of sarcopenia and muscular dystrophies

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#Ageing **#Sarcopenia** **#Peptide**

Sarcopenia is the progressive loss of skeletal muscle that comes with aging. And is one of the major causes of loss of autonomy in older people. The overall prevalence of sarcopenia range from 10% to 27% but there are no FDA-approved drugs.
Apelin, endogenous agonist of APJ receptor, is produced and secreted by a contractile skeletal muscle. This regulation is dropped during aging, leading to muscle atrophy, loss of strength and age-associated sarcopenia.
Apelin has a very interesting role in muscle regeneration but is not stable enough. We develop a Modified Apelin with increased in vivo half-life to treat sarcopenia in aged people.
A maturation program is ongoing, and more information are available on demand.



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TECHNOLOGY

RESEAU SATT

SRN927

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

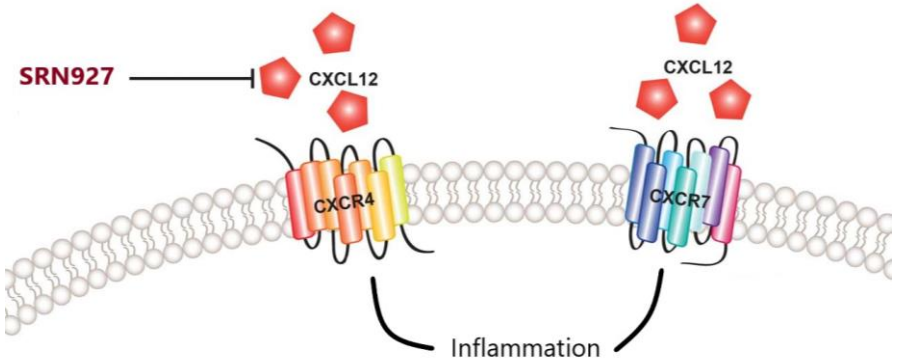
SRN927 is a New Chemical Entity with neutraligand activity on CXCL12, for pain and inflammatory diseases.

#Inflammation **#Pain** **#SmallMolecule**

CXCL12 (SDF1) is a chemokine that mediates its effects by interacting with 2 distinct GPCRs: CXCR4 and CXCR7. Targeting the ligand allows a dual effect on CXCR4/7 axis, both known for their activity in inflammation and immunity.

SRN927 provide a new way to modulate immune response and inflammation in various clinical settings, including auto-immune diseases and reduction of inflammatory pain. In-vivo pain model displays a huge shift opioids tolerance and pain sensibility.

Our molecule shows sub-micromolar affinity and promising vitro ADME parameters and oral bioavailability. We have preliminary POC in models of Allergic asthma, Atopic Dermatitis, and several mice models of acute and chronic pain



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TECHNOLOGY

RESEAU SATT

Spartbiotics

New antibiotic targeting the bacterial DNA sliding clamp

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#Peptide | #antibiotic | #anti-infectious

The sliding clamp, a ring-shaped dimer that encircles dsDNA, and the protein-protein interactions in bacterial replication are extremely well conserved and represents an attractive target for antibiotic design. The program will optimize and evaluate a 5 aa residues peptide targeting the sliding clamp in an in vivo model of gram-negative infection.

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Diagnostics & Enabling technology

TECHNOLOGY

RESEAU SATT

Biosensing

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

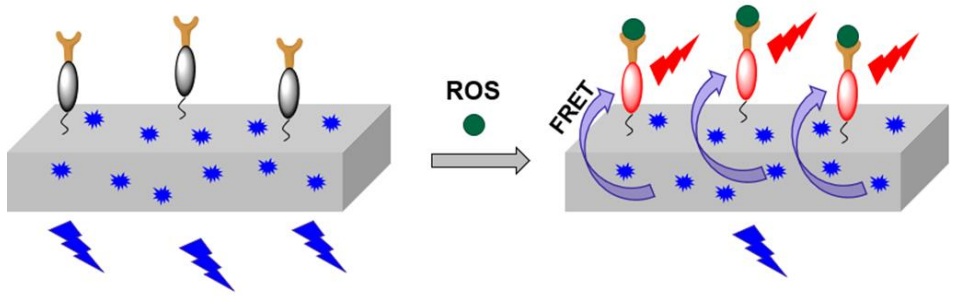
New fluorescent coatings and implantable materials as medical biosensors

#Biosensor | #Fluorescence | #Monitoring

Biosensing technology is based on the development of new sensors biomaterials to detect oxygen, reactive oxygen (ROS) /nitrogen (RNS) species and pH variations, in solution or in tissues, in real time.

The concept is based on surface functionalization of a near-infrared fluorescent FDA-approved Polymer that can be shaped in different forms (coating, flexible nanofibers, 3D printed objects,…) in order to detect species thanks to a FRET type energy transfer. These biosensors can be directly integrated in tissues for a continuous monitoring, with a simple signal detection by fluorometer. This technology allow the quantification of the entity using the ratiometric fluorescence response.

The first targeted indication is the monitoring of wound healing in real time.



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TECHNOLOGY

RESEAU SATT

LUNA

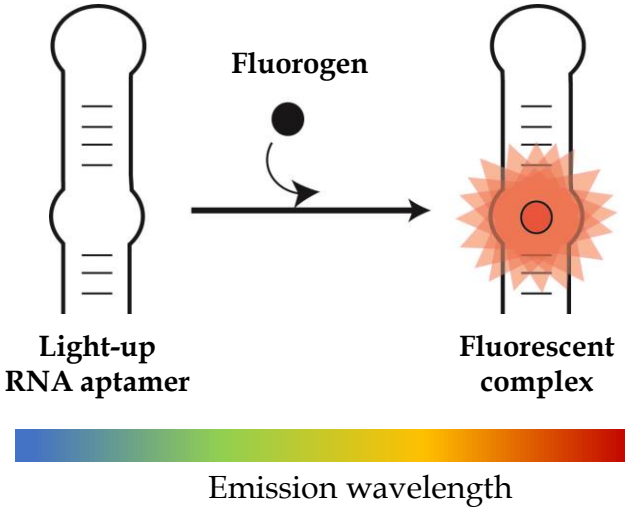
Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

New Fluorogen/Light-up RNA Aptamer Technology for cellular imaging of nucleic acids by fluorescence in living cells

#DrugDiscovery | #IVD | #Imaging

LUNA technology (for Light Up Nucleic Acids) is based on Aptamer RNA / Fluorogen molecular pairs and may allow cellular imaging of nucleic acids by fluorescence in living cells.

Our technology has many applications including in vitro and in vivo applications requiring the detection of RNA, proteins, metabolites and small molecules. For example, we consider :
- R&D tools for RNA vaccine development
- In Vitro Diagnostic
- Imaging in living cells, with the screening of molecules/assets, pathogenic RNA research or the quality control of cell therapy.



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TECHNOLOGY

RESEAU SATT

Mucolip

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

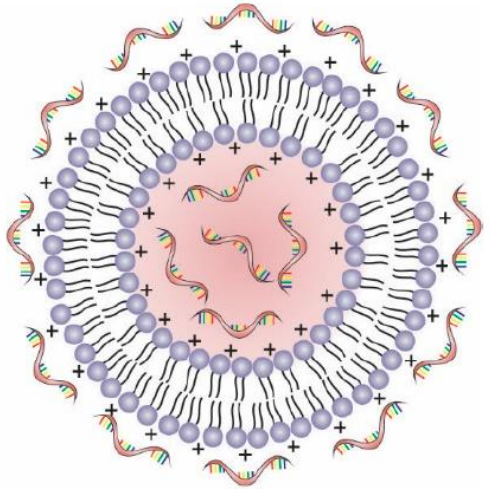
Development of lipid vectors with mucolytic activity for the delivery of therapeutic products to the lung

#Lung **#Lipidvectors** **#DrugDelivery**

The objective of this project is to develop a family of specific vectors for the delivery of pharmacologically active principles by the **mucosal route**, and in particular by the pulmonary route. Indeed, the non-invasive mucosal delivery method allows to deliver the dose of the active ingredient directly at the site of action, without dilution effect, which generates a higher activity and lesser side effects.

However, the mucus layer on the surface of the lung epithelium clearly limits the absorption of the drug administered through the mucosal route. Our team is currently working on the development of **lipid vectors with intrinsic mucolytic activity** to improve the diffusion of the active substance through the protective mucus layer and thus the efficacy of the drug.

Our approach compromises the defensive barrier properties of mucus against pathogens to a much lesser extent than existing approaches and alters the mucus layer in a strictly local and temporary manner.



Lipoplex

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TECHNOLOGY

RESEAU SATT

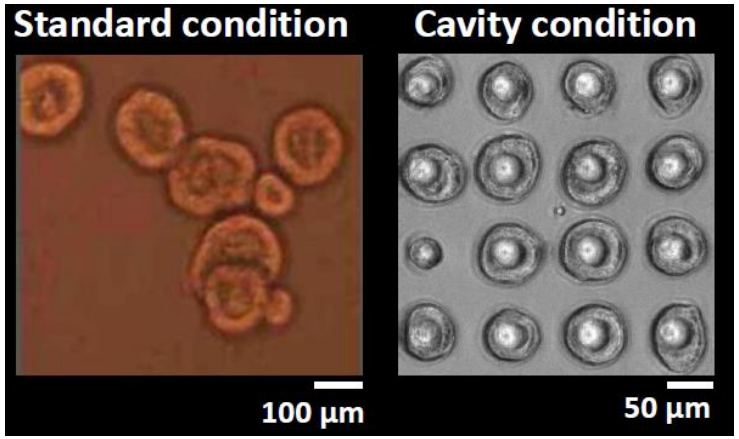
Organoid Moulding

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

New cell culture plates and growth methods in 3D to generate arrays of reproducible organoids of any types for robust drug screening assays

#Cell Culture **#Organoid** **#DrugDiscovery**

The team has pioneered in orienting cells in micro-fabricated cavities and developed microfabricated substrate with periodic cavities. This device and this method allow to control early stage of cell plating, their chemical and physical environments, and their subsequent growths. The result is robust organoids with reproducible shapes.
Expected benefits:
•A much better readout et versatility
Reproducible shape and size
Robustness of the results thanks to a large number of wells
Can be adjusted to any cell type
•A cost-effective method
Requires far less medium than conventional screening assays
Convenient for high throughput screening



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TECHNOLOGY

RESEAU SATT

Turn-On

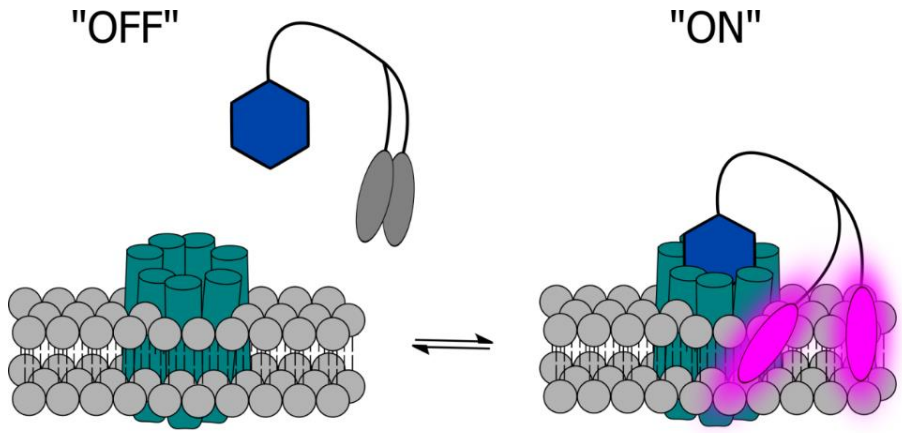
Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

New probes for GPCR imaging in-vitro, in living cells and in small animals. TurnOn probes to specifically label membrane receptors by fluorescence without modifying them.

#Imaging **#GPCR** **#DrugDiscovery**

The probe initially switched off only “lights up” when it comes into contact with the membrane receptor. It allows then to work on endogenous receptors, without background noise or residual fluorescence. The probe includes a ligand (small molecules, peptides or antibodies) of the targeted receptor linked to a dimeric fluorogen.

At this stage, we identify several applications including:
- in vivo: fluorescence imaging on small animals for localization/quantification of GPCRs (or membrane proteins) and study of the biodistribution of therapeutic compounds (target engagement, residence time, PK, comparison of hits/leads by displacement of the probe etc…).
- ex-vivo on native tissue
- in-vitro and on living cells for example for the screening of Ig by FACS



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TECHNOLOGY

RESEAU SATT

PREDMED

Digital “Clinical Decision Support” solution for Solid Tumor Cancers.

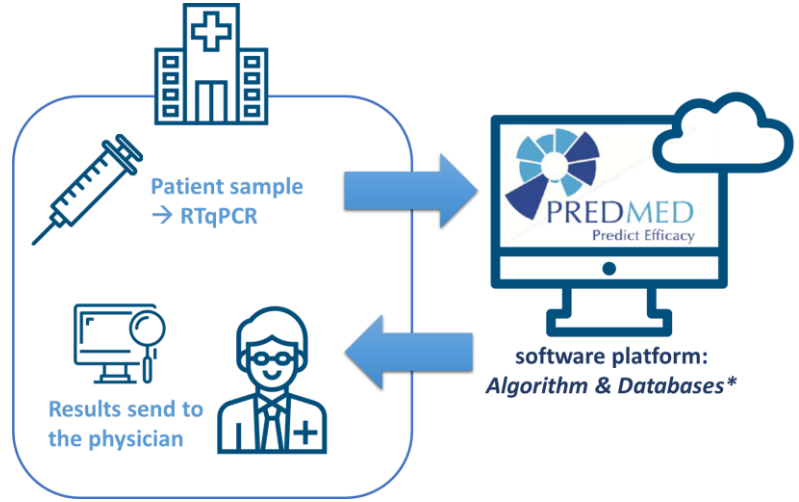
Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#eHealth | #Oncology | #Algorithm

PREDMED is the first test to rank 72 therapeutic targets, allowing oncologists (and Pharma) to identify themselves, for each patient, the most relevant targets to be considered and to select the most appropriate & efficient treatment among the available targeted & immunotherapies.

PREDMED test is a "Point of Care Testing” Medical Device associated to an algorithm via a web interface. This test allows hospitals to analyze samples directly at the sampling site and oncologists to determine themselves the best therapeutic strategy in less than 24 hours.

Early clinical studies confirm that PREMED can change management of patients’ treatment and efficiency (published data). Patent: Method for identifying personalized therapeutic strategies for patients affected with a cancer



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TECHNOLOGY

RESEAU SATT

Bispidine

Potent contrast agent ligand used for MRI and PET

Technology matured by CONECTUS OFFICIAL INNOVATION PROVIDER

#Contrast agent **#MRI** **#Imaging**

We develop Bispidine-based Mn2+ contrast agents with higher stability and relaxivity than standards, providing a safer alternative to Gadolinium contrast agents

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