VERSATILE AND BIOCOMPATIBLE LIPID-BASED DELIVERY SYSTEM FOR BIO-MEDICAL APPLICATIONS

**WHAT IS LIPIDOT® TECHNOLOGY?**

Leti’s Lipidot® technology is a versatile nano-delivery platform to diagnose and provide medical treatments based on each patient’s characteristics. Lipidot® are small droplets of lipids that encapsulate, carry and deliver within the target cells / tissues: active drug compounds, imaging contrast agents and other lipophilic payload.

These droplets also vectorize biomacromolecules – i.e. nucleic acids, peptides, proteins, etc. Their composition, size, dosage forms and rheological properties can be tailored depending on the targeted site. More specifically, Lipidot® display target-specific affinity towards liver, lymph nodes, solid tumor, or lipid-rich areas such as atherosclerotic plaques. Lipidot® lipid droplets are composed of bioabsorbable and biocompatible ingredients, which are already FDA approved for human-use.

**APPLICATIONS**

- **Fluorescent dye transporter** for *in vitro & in vivo* diagnostics and surgery guidance
- **Drug transporter** for chemotherapy and photodynamic therapy
- **Nucleic acid delivery / SiRNA transfection agents** for *in vitro* diagnostic and gene therapy
- **Adjuvant delivery system** for vaccines and immunotherapy
WHAT’S NEW?

- Lipid core for easy solubilization of lipophilic drugs
- Highly biocompatible and bioassimilable ingredients
- Versatile technology with a range of diameter (from 30 nm to 120 nm), dosage forms and rheological properties (fluid dispersions, viscous gels)
- High colloidal stability (> 18 months, 4°C to 40°C, 2<pH<10)
- Up-scalable solvent-free process
- Process validated at both lab-scale and industrial scale
- Pilot line capabilities and associated analytical characterization

KEY FACTS:

- 15 patents
- 20 peer-reviewed articles

INTERESTED IN THIS TECHNOLOGY?

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WHAT’S NEXT?

New applications under development

- PET imaging agents for atherosclerosis
- Preclinical validation at the late stage of siRNA delivery in vivo in a context of inflammatory bowel diseases (NewDeal project H2020)
- Challenge-test of a nanovaccine formulation in a model of infectious diseases in order to demonstrate an induction of protective immunity
- Currently under industrialization with V-NANO for up-scale and GMP production (up to 60L)