



In-Cell-Art Announces Publication designing and characterizing a Nanotaxi® for potent intracellular therapeutic antibody delivery

Nantes – France, 3rd of October, 2017 – In-Cell-Art (ICA), a biotechnology company specialized in nanocarrier technologies called Nanotaxi® designed to unlock the promise of nucleic acids to treat acquired or inherited diseases, announces today that ICA scientists and academic researchers at University of Bordeaux and Nantes jointly published in Elsevier *Nanomedicine: Nanotechnology, Biology and Medicine** a study on the rational design of aminoglycoside lipidic derivative, one type of Nanotaxi®, to efficiently deliver functional antibodies in living cells.

The study shows that by a comprehensive supramolecular approach, a single molecule of an aminoglycoside lipidic derivative was discovered for the efficient intracellular delivery of antibodies. This new Nanotaxi® forms small vesicles and discrete multilamellar supramolecular assemblies once associated with antibodies. These morphological features were directly translated into cell and confirmed the binding of the target by the delivered antibody. We rationalized these results based on the fact that this unique Nanotaxi® led to a more favorable situation regarding antibodies complexation and decomplexation in extracellular and intracellular space, respectively.

Bruno Pitard, a founder of In-Cell-Art, says “Today, antibodies represent a new class of therapeutic molecules only for soluble and extracellular targets, but not for intracellular ones. As demonstrated in this article, after 20 years of research in the field of macromolecular drugs delivery, ICA had accumulated highly technical competencies and unique resources allowing to design a single non toxic molecule to tap into the potential of antibodies for the development of novel generation of drugs by acting inside cells with antibodies”.

*This article appears in *Nanomedicine: Nanotechnology, Biology and Medicine* and can be found online at

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About In-Cell-Art

In-Cell-Art (ICA), which is headquartered in Nantes (France) is a biopharmaceutical company specializing in the preclinical and pharmaceutical development of nanocarriers named Nanotaxi® for macromolecular drugs. Its founder and research team, which includes a Nobel Laureate, have designed new classes of vectors that are organized on a nanometric scale, which enables them to cross the cell barrier efficiently and safely. In-Cell-Art offers a range of reagents and biotechnology development services:

1. ICANTibodies™

In the absence of recombinant antigen, ICANTibodies™ allows, from an in silico DNA antigenic sequence, the production of the most ambitious functional antibodies against any natively expressed nuclear, cytoplasmic, secreted or membrane proteins. ICANTibodies™ has allowed, in less than 3 years, the production of more than 300 different functional antibodies. In-Cell-Art has worked with a number of pharmaceutical firms (Sanofi, GlaxoSmithKline, Geneuro etc.) and public research institutions and universities (Institut Cochin, Cancer Research UK, Institute of Neurology UK etc).

2. ICA Nanotaxi®

•DNA Vaccine

ICA614 Nanotaxi®, an innovative DNA synthetic formulation, offers unique efficient and industrial features such as the dramatic enhancement of the immunogenicity of plasmid DNA-encoding tumours or pathogen-derived antigens, a reduction in the dose of plasmid DNA, as well as an excellent safety profile. ICA614 Nanotaxi® represents a crucial step in DNA vaccine development, and GMP fill/finish of ICA614 Nanotaxi®, as well as regulatory-enabling GLP safety evaluation of ICA614 Nanotaxi® alone HEPAVAC (Hepatocellular vaccine candidate) have been achieved successfully.

•mRNA Vaccine

Some other ICA Nanotaxi® are also being assessed in \$33.1 million RN-ARMORVAX consortium, co-funded by US Defense Advanced Research Projects Agency (DARPA). The consortium would validate the new application of ICA Nanotaxi® for mRNA-based vaccines for infectious diseases in collaboration with CureVac and Sanofi-Pasteur.

•mRNA Replacement Therapy

Some other ICA Nanotaxi® are also developed to improve the limited efficacy and stability of mRNA therapeutics, leading to the dramatic increase in therapeutic protein expression without DNA-encoded gene.

3. ICAFectin® transfection reagents

ICAFectin® transfection reagents are innovative breakthrough synthetic vectors for in vitro nucleic acid delivery. They are becoming the reagents of choice for efficient DNA and siRNA transfections as demonstrated by their increasing use in numerous studies published in high impact factor journals including Journal of Biological Chemistry, Nucleic Acids Research, PLOS ONE, PLOS Pathogen, Human Gene Therapy, Cell reports, EMBO J and more.

In-Cell-Art is a privately held company, which was founded in 2005, laureate in 2013 and 2013 of the Fast 50 Deloitte award. It is a member of the Atlanpole Biotherapies high-tech cluster of biotechnology companies in western France.

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