# In-Cell-Art announces the publication of an easy-to-administer and simple to manufacture Zika vaccine candidate

**Nantes – France, 18th of October, 2018 –** In-Cell-Art (ICA), a biotechnology company specialized in nanocarrier technologies named Nanotaxi® for unlocking the promise of nucleic acids to treat acquired or inherited diseases, announces today that ICA and academic researchers at Los Alamos National Laboratory (New Mexico, USA) and at the University of New Mexico (Albuquerque USA) published in the journal *Vaccine** a preclinical study for the development of an easy-to-administer and simple to manufacture Nanotaxi® formulated DNA vaccine to induce strong neutralizing protecting antibodies against Zika virus.

The study shows the identification of genetically and antigenically representative variants from Zika virus using computational tools to create immunogens for a polyvalent DNA vaccine.

A monovalent DNA vaccine was tested in the first instance for the evaluation of ELISA and neutralization titers against different divergent Zika isolates.

For low-dose and mono- or multivalent vaccine design, the delivery method uses Amphiphilic Block Copolymer a class of Nanotaxi®, which can deliver genetic material directly into the cytosol to increase dramatically gene expression and elicit very strong innate immune responses. Results show that vaccination rapidly induces neutralizing responses against multiple diverse Zika isolates and protection from detectable viremia during infection in mice challenged more than 7 months after the first vaccination.

Bruno Pitard, CSO and founder of In-Cell-Art, says “This is an important first milestone to realize a highly polyvalent vaccination strategy which can overcome the issues of genetic variation and antigenic diversity in Flaviviruses. Nanotaxi® technology can deliver many DNA variants at once. This allows us to develop a single injection, which contains a set of diverse antigens that vary in key positions to induce immune responses with unprecedented breadth and potency.”

*this article appears in *Vaccine* and can be found online at:
https://doi.org/10.1016/j.vaccine.2018.10.022

**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. ICA Nanotaxi® technology displays unique properties for development of:

・DNA Vaccines

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 Vaccines

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 Therapies

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.

・Therapeutic antibodies

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.

In-Cell-Art is a privately held company, which was founded in 2005, laureate in 2012 and 2013 of the Fast 50 Deloitte award, and in 2013 of Territoires Innovation Pays de la Loire Awards. It is a member of the Atlanpole Biotherapies high-tech cluster of biotechnology companies in western France.

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