Last Name, First name: PITARD, Bruno – Partner 3
Date of Birth: 27th July 1968
Degree and Position: PhD, Directeur de Recherche 1er Class
Expertise: Dr Bruno PITARD, is a leading researcher in the field of nanotherapeutics, who also has long successful collaboration with Inserm Hopital Saint Louis and the Institut Pasteur team on DNA T cell vaccine against dengue and Zika using a new class of synthetic delivery system that has been shown not toxic in a regulatory-enabling GLP safety study and is currently advanced toward first in man. **Dr PITARD** will bring in his expertise in supramolecular chemistry and understanding of relationships between physicochemical properties of supramolecular structures and their macromolecular in vivo internalization efficiency to the project. He is responsible for the design of novel supramolecular structures between amphiphilic block copolymers and nucleic acids for intramuscular vaccination. He will provide those synthetic delivery systems and supervise animal vaccination experiments. In addition, **Dr PITARD** will synthesize, characterize, and provide synthetic amphiphilic block copolymer that he has shown recently to increase dramatically DNA vaccination efficiency by a breakthrough mechanism. He will supervise vaccination experiments of the project and potential translation for human vaccination against SARS CoV2. **Dr PITARD** founded in 2005 with a research team including a Nobel laureate, In Cell Art, a biopharmaceutical company specializing in nucleic acid-based therapeutics and vaccine
Affiliation and address: Inserm U1232/CNRS6001, 22 bld benoni goulin, 44200 Nantes
CV enclosed
ORCID number: 0000-0002-9581-0860

Identité / Personal details	
Genre / Gender (Femme / Homme / Autre)	Male
Nom et prénom / Name and first name:	PITARD, Bruno
Pays / Country	France

Poste actuel / Current position[1]

Titre / Function

Research Director CNRS 1st class

Organisme(s) public(s) français / French public organisation(s)

Code RNSR / RNSR code	Organisme / Organisation	Laboratoire / Laboratory	Code unite / Unit code	Code postal / Postcode	Ville / Town
U1232 : 201722308D	Inserm/CNRS	CRCINA	1232/6001	44200	Nantes

Autres activités / Other activities

Since 2005 : President SAB of IN CELL ART, with Jean-Marie Lehn, Didier Roux, Luc Aujame and Bernard Guillou.
Since 2017 : Member of the Equipment commission of CRCINA
2002-2015 : Member of SAB of French Cystic Fibrosis association “Vaincre La Mucoviscidose”.
2003-2015 : Member of board of the Unit CNRS UMR6291/Inserm UMR1087
2008-2011 : Member of SAB of ThermoFischer of the prize « Biotherapie”. President of the 2011 edition.
2004-2007 : Member of Comité Consultatif Régional de la Recherche et du Développement Technologique (CCRRDT) des Pays de Loire.
2007 : Member of the SAB of Genethon. President of the SAB JM Gilis
2009 : Member of the AERES to the Unit headed by Luis Mir (IGR, VilleJuif)
Learning societies : Member of the organizing comitte of 2005 congress of Société Française de Biochimie et de Biologie Moléculaire (SFBBM).
Member of Société Française de Biophysique (SFB).
Member of Société Américaine de Thérapie Génique (ASGT).
Member of the Molecular Biology Society of Japan (MSBJ)

Teaching: 40 hours/year; Master 1 (Nantes) Master 2 (Paris, Orleans, Tours, Cergy Pointoise, Nantes, Angers, Grenoble)

[1] *Compléter la ou les sections appropriées / Fill the appropriate field(s)*

Postes antérieurs / Previous positions				
Début / Start date	Fin / End date	Ville / Town	Etablissement / Organisation	Fonction / Function
2017	-	Nantes	Inserm UMR1232/CNRS ERL 6001	Head of team
2015	2017	Nantes	IN CELL ART	CEO and CSO
2007	2015	Nantes	Inserm U1087	Head of team
1999	2000	Marcy L'Etoile	Sanofi Pasteur	Head of team
1995	1999	Vitry sur Seine	Sanofi	Head of team
1992	1993	Bruyère le Chatel	Commissariat Energie atomique	Scientific soldier

Interruption(s) de carrière / Career interruption(s)

2015-2017: CEO and CSO of IN CELL ART

Formation supérieure / Education[2]

2003: Entitled to supervise research, University of Nantes (France)
1995: Ph.D., University of Science Paris XI (France)
1991: Biomedical engineer, University of Technology of Compiègne (France)

Productions scientifiques / Scientific productions

2001: Laureate of the program of support of outstanding projects (APEX Inserm)
2002: Laureate of the program of support for young scientists (French Ministry of Research)
2003: Laureate of the French contest for the launching of innovative start up (category Emergence)
2004: Laureate of the French contest for the launching of innovative start up (category creation/development)
2009-2010: AFM. Projet stratégique (DNA-Nanoparticles for skeletal muscke and airway epithelium in vivo gene therapy), Financement Total 2.0 M€

2009 : Fondation de France. Financement 90 k€

2009 : Genavie : 47 k€

2008 : Région Pays de Loire. CIMATH, Financement Total 1.98 M€

2008 : Region Pays de Loire/Region Centre. Pokemonde, Financement Total 327 k€

2012: In-Cell-Art wins 2012 Deloitte Technology Fast 50 West Award (with 780% revenue growth over a five-year period)
2013: In-Cell-Art wins 2013 Deloitte Technology Fast 50 West Award (with 745% revenue growth over a five-year period)
2013: In-Cell-Art wins Trophées Territoire Innovation (Region Pays de Loire, France)
2014-2018 : Agence Nationale de la Recherche (ANR) : CORF (K8/F508del-CFTR, une nouvelle cible pour la thérapie de la mucoviscidose), financement Total 0.5 M€

2012-2017 : Fonds Unique Interministériel (FUI). HEPA-VAC (Développement pré-clinique d'un candidat vaccin à ADN pour le traitement du Carcinome Hepatocellulaire), Financement Total 2.4 M€

2012-2019 : Innovation Stratégique Industriel (ISI). EMER-IT (Immunotherapies contre les maladies Emergentes), Financement Total 20 M€

2012-2017 : Région Pays de Loire. AGTI axe 3 (Thérapie Génique des maladies rare neuromusculaire. Saut d'exon de la dystrophine à l'aide de vecteurs synthétiques), Financement 276 k€

2012-2018 : Agence Nationale de la Recherche (ANR). IHU CESTI 1 (Gene Transfer by non-viral vectors) Financement 183 k€

[2] *Les non-titulaires d'un PhD indiquent la date de leur dernier diplôme académique. / Researchers without a PhD must indicate the date of their last academic degree.*

2015-2019 : Agence Nationale de la Recherche (ANR). IHU CESTI 2 (Revolutionary Biotherapeutic Treatment of Anemia in Chronic Kidney disease) Financement 23 k€

	5 publications majeures / 5 most relevant publications	Quel est l'apport majeur de cette publication ? / What is the major contribution of this publication?
1	Colombani T, Haudebourg T, Decossas M, Lambert O, Ada Da Silva Grace, Altare F and **Pitard B**. Lipidic Aminoglycoside Derivatives : a New Class of Immunomodulators Inducing a Potent Innate Immune Stimulation. ***AdvSci (Weinh)*** (2019) 6:1900288. PMID: 31453059	First evidence that lipidic derivatives of natural aminosugars play immunomodulatory action.
2	Lindsay KE, Bhosle SM, Zurla C, Beyersdorf J, Rogers KA, Vanover D, Xiao P, Araínga M, Shireff LM, **Pitard B**, Baumhof P, Villinger F, Santangelo PJ. Visualization of early events in mRNA vaccine delivery in non-human primates via PET/CT and near-infrared imaging. ***Nat Biomed Eng.*** (2019) 3:371-380. PMID: 30936432	First evidence that mRNA molecules formulated by cholesterol derivatives of aminosugars are transported in the Non Human Primate in draining lymph nodes 10 cm away from the injected muscles.
3	**Desigaux L, Sainlos M, Lambert O, Chèvre R, Letrou-Bonneval E, Lehn P, Lehn JM and Pitard B. Self-assembled lamellar complexes formed by lipidic aminoglycoside derivatives and siRNA promote efficient RNA interference. *Proc. Natl. Acad. Sci. USA* (2007) 104: 16534-16539. PMID: 17923669**	First evidence of novel class of vectors for the specific delivery of RNA molecules using lipid derivatives of natural aminosugars
4	**Pitard B**, Oudrhir, N, Vigneron JP, Hauchecorne M, Aguerre O, Toury R, Airiau M, Ramasawmy R, Scherman D, Crouzet, J, Lehn JM and Lehn P. Structural characteristics of supramolecular assemblies formed by guanidinium-cholesterol reagents for gene transfection. ***Proc. Natl. Acad. Sci. USA*** (1999) 92: 2621-2626. PMID: 10077560	First evidence of lamellar structure between ionizable cholesterol and DNA molecules
5	**Pitard B**., Aguerre O, Airiau M, Lachagès AM, Boukhnikachvili T, Byk G, Dubertret C, Herviou C, Scherman D, Mayaux JF and Crouzet J. Virus-sized self-assembling lamellar complexes between plasmid DNA and cationic micelles promote gene transfer. *Proc. Natl. Acad. Sci. USA* (1997) 94: 14412-14417. PMID: 9405626	First evidence of lamellar structure of polycharged ionizable lipids and DNA molecules. Positively charged DNA complexes lead to highest transfection efficiency

Valorisation

Inventor of new concepts for intracellular delivery of macromolecular drugs named Nanotaxi®. 16 patents on formulation of macromolecular drugs. Creation of IN CELL ART in 2005 with a research team including a Nobel Laureate. Several patents licensed to IN CELL ART. IN CELL ART has been part on several international consortiums including RNArmorvax of US$33.1 million with Sanofi Pasteur/Curevac financed by US agency DARPA. IN CELL ART has advanced toward clinical trial Nanotaxi® technology and validated that Nanotaxi® induces no mortality nor toxicity.