



Alain Wagner
Born August 7th, 1964; 51 Year Old
French nationality
Married, 1 child

Faculty of Pharmacy
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- 2013 Vice Director of Labex MEDALIS
- 2012 Vice Director of UMR 7199
- 2011 Promoted Research Director 1st Class
- 2009 Co-Founder of the Start-Up eNovalys SAS
- 2009 Qualification for professorship
- 2008 Return to CNRS as the
Head of the Laboratory of Functional Chemo Systems (LFCS)
- 2007 Creation of the company PhytoDia SAS

2002-2008

On sabbatical leave from academic research
Founder and CEO of Novalyst Discovery S.A.S.

- 2002 Creation of the Start-up Novalyst Discovery
- 2001 Promoted Research Director at CNRS
- 2001 Accreditation to supervise PhDs (Habilitation)
- 1994 Enter CNRS as a Research Associate, 1st Class
- 1991 Post-doctoral researcher: Affymax Research Institute, Palo-Alto, CA.
Under the direction of Prof. P. G. Schultz
Catalytic antibodies for the enantio-selective reduction of γ - ketoesters
- 1991 PhD thesis at the University Louis Pasteur of Strasbourg
Under the direction of Dr. C. Mioskowski
Study of organo-phosphorus reagents: application to organic synthesis
- 1988 Master Degree in Organic Chemistry at University Louis Pasteur of Strasbourg

Alain Wagner career summary

The first part of his career (1988 - 2001) was spent under Charles Mioskowski's mentorship and led him to discover the world of the organic synthesis and the endless possibilities available through scientific investigation. During this period, AW spent three years (1991-1994) as a post doctoral researcher, building on his previous training, in Palo-Alto (USA) within the start-up "Affymax". Supervised by Peter Schultz he became acquainted with the emerging field of catalytic Antibodies and chemical biology. In addition this transition into the world of scientific entrepreneurship confirmed his desire to use his future fundamental research as a basis for innovative start-ups: a true indicator of the renewal and dynamism of research and economy. Returning to France Alain entered CNRS. During this period AW had the opportunity to initiate and to pursue research in various domains such as solid phase synthesis, drug discovery, molecular imprints, and nanochemistry. This led to several collaborative work with main pharma industries (Glaxo, Sanofi, Bayer) and to the development of one molecule that made its way into Phase 1.

Subsequently AW conveyed what he had learned to the next period of his career and in 2001 he established his first company that exploited high throughput reaction discovery platform based on innovative MS based screening "Novalyst Discovery". In 2002 Stephan Jenn, who had just been awarded a MBA by the Wharton Business School, joined him. The company was created in 2002 and AW left the CNRS to become CEO of Novalyst Discovery. Between 2002 and 2007 AW dedicated himself to the development of the company, which grew from 3 to 40 employees. The company moved into new facilities at the Illkirch biopark 2007. During all this period AW, build a experienced team and he was involved all the aspects of the company's development, which included legal, finance, strategy, organization, fund raising, management. Building on these experiences, in 2007 a new company, PhytoDia, was created to value research on nutraceutic components made in association with various academic laboratories.

In 2008 AW entered the third phase of his career by establishing the Laboratory of Functional ChemoSystems (LFCS) at Faculty of Pharmacy in Strasbourg. The decision to move back into academia was motivated by AW's aspirations to remain closely involved in scientific innovation. This was made possible because Novalyst had reached operational and commercial growth of its business and started a phase of expansion by acquisition to become Novalix Pharma. Today Novalix is employing about 80 persons with operations in France and Spain.

The 5-7 year objective of LFCS is to develop first hybrid bio-synthetic living systems using dynamic and adaptive interactions of chemical and biological systems. Toward this end LFCS searches for reactions and catalysts capable of reacting specifically with defined biocomponents (proteins, metabolites, sugars...) in their native environments. Such systems should allow for example in vivo site-specific bioconjugation of a target protein, in-vivo neutralization of endogenous or exogenous bioactive molecule or actuation of living organism via catalytic regulation of metabolic abnormalities. A network of collaborators (biology, oncology, analytics, imagery) was established to carry these interdisciplinary research projects. To address such issue it is necessary to really integrate chemistry and biology capabilities. Hence in the last years we have included in the team molecular biology and recombinant protein productions capabilities. Going one-step further into the close integration of chemistry and biology we now actively build-up cell culture expertise.

As prototypical examples of our ongoing researches, we investigate the opportunity offered by bioorthogonal chemistry for in vivo small drug (exogeneous molecule) neutralization. Our basic idea is to design a small-molecule drug containing an azide group that would act as a safety pin allowing instant drug deactivation via in vivo click reaction with a suitable neutralizing agent. In this strategy, the new molecule formed by reaction of the drug and the antidote should be deprived of biological activity while accelerate its clearance. A first paper in being submitted for publication and research are ongoing to extend this principle to in vivo actuation nanovectors or polymer. We further extend this concept to biospecific in vivo reaction by designing probe able to react in vivo with transient reactive metabolite. This new technology would allow the study of metabolite dyshomeostasis linked neural diseases. For all these projects, close collaboration were established with Researcher i.e. at IGBMC (Dr. W. Kezel) and IBMP (Dr Dimitri Heintz).

Our second topic of interest deals with site-specific conjugation on native proteins. Recent endeavours in these fields shed light on unprecedented chemical challenges to attain bioselectivity, biocompatibility, and biostability required by modern applications. At LFCS explore a strategy for site-specific chemical conjugation that exploits peculiar amino acid microenvironment. Identification of these hot spot together with development of tailored reagents rely on collaborations for native protein MS-analytics (Dr. S. Cianferani LSMBO) and data treatment models (M. Maumy, Institute of Mathematics).

Finally in order to study our future Bio-hybrid system at the single cell level, we have constructed a microfluidic based single-cell analytic platform (Col A. Griffith ESPCI and M. Ryckelynck IBMC). This technology enable for the first time HT single cell metabolomics analysis and dual mRNA-targeted proteomic analysis (patent pending) providing us with key competitive advantage to reach our goal.

Publications			
Total Number	131	Angewandte Chemie / JACS / Chem Eur J	14
H factor	29	Bioconj Chem– J Med Chem – J Phys Chem...	36

Patents / Research valorization			
Total number	17	Start-ups created	4
Licensed patents	7	Direct employment created	115

Distinctions	
2002	Winner of the "creation of innovative company" contest for the Novalyst project
2003	Prize Alsace Biovalley of biotechnologies start-ups
2007	Winner of the "creation of innovative company" contest for the eNovalys project
2008	Prize National Institute of Intellectual Property
2015	Winner of the MATURATION & ACCELERATING TRANSLATION WITH INDUSTRY (MATWIN) national contest for the development of a non-internalizing ADC technology
2015	i-LAB 2015, lauréats en "création-développement" Projet Syndivia
2014	i-LAB 2014, lauréats "en émergence" projet Syndivia

Various commitments 2012-2014	
2014-.....	–Vice-Director of LabEx MEDALIS
2013-.....	- Scientific advisory board of INOVIEM Scientific
2012-	- Vice-Director of Research Unit UMR 7199
2012-	- Member of the National Comity of Scientific Research
2011-	- Member du scientific advisory board of the French Society of Therapeutic Chemistry