

NICOLAS WINSSINGER, PhD

Born in Belgium (1970), married with two children.

CONTACT

Organic chemistry department - University of Geneva

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EDUCATION

2000-2002 **The Scripps Research Institute**, Department of Chemistry

NIH postdoctoral fellow with Professor P.G. Schultz

1995-2000 **The Scripps Research Institute**, PhD in Chemistry

Advisor: Professor K.C. Nicolaou

1989-1993 **Tufts University**, BS in Chemistry

EMPLOYMENT AND POSITIONS

2012-present Organic chemistry department, Université de Genève (PO); Head of the department (July 2014-July 2016)

2005-2012 Institut de Science et d'Ingénierie Supramoléculaires (ISIS), Université de Strasbourg, *Professeur (Pr1), director of the organic and bioorganic laboratory.*

2002-2005 Institut de Science et d'Ingénierie Supramoléculaires (ISIS), Université Louis Pasteur, *Professeur Associé, director of the organic and bioorganic laboratory.*

1993-1995 Sphinx Pharmaceuticals, a Division of Eli Lilly, *research associate*

CURRENT RESEARCH

- > Directed evolution of small molecules and catalyst. Self-organization and selection of nucleic acid encoded small molecules are being developed.
- > Template directed chemical synthesis. Modified oligonucleotides are being explored to direct designed chemical reactions based on sequence-specific supramolecular organization.
- > Natural product synthesis and diversity-oriented synthesis. Synthetic methodologies are being developed to access families of natural products, with a particular emphasis on covalent inhibitors.

DISTINCTION & AWARDS

JSPS fellow (2017) - Xinda Lectureship (2015) - INPI Innovation Trophy (2012) - Prix Guy Ourisson, Cercle Gutemberg (2008) - Institut Universitaire de France (IUF), junior nomination (2008) - Acros Prize, Société Française de Chimie (SFC) (2008) - European Research Council (ERC) young investigator laureate (2008) - Invited Professor, Academia Sinica, Taipei (2005) - Human Frontiers Young Investigator Award (2003) - TSRI Society of Fellow Symposium Award (2001) - NIH Postdoctoral Fellowship (2000) - Hewitt Foundation for Medical Research Fellowship (1999) - ACS Division of Organic Chemistry Graduate Fellowship (1998) - Roche Award for Excellence in Organic Chemistry (1998) - Lesly Starr Shelton Award for Excellence in Chemistry (1998)

MEMBERSHIPS

American chemical society (1992-present); Société Française de chimie (2002-2013); Member of the CNRS comité national, section 16 (2008-2012); Centre International de la Recherche aux Fontrières de la Chimie (FRC), committee member (2011-2013); Swiss chemical community (2012-present); Editorial board member

of Artificial DNA: PNA and XNA (2009-present); Editorial advisory board of ChemBioChem (2010-present), member of the KGF-SCS award committee (212-present), board member of SCS division of fundamental research (2013-present); Board member of the Société Chimique de Genève (2013-present); Panel member for ERC consolidator grant (PE5 ; 2014-present), Editorial advisory board of Bioorganic and Medicinal Chemistry (2016-present).

BIBLIOMETRICS (Web of Knowledge – March 2017)

128 articles; 11 patents; H-index: 41; total citations: 5896; average citation 46

REPRESENTATIVE PUBLICATION:

- DNA-Templated Combinatorial Assembly of Small Molecule Fragments Amenable to Selection/Amplification Cycles, J.P. Dagher, M. Ciobanu, S. Alvarez, S. Barluenga, N. Winssinger, *Chem. Sci.*, **2011**, 2, 770-775.
- Cysteine Mapping in Conformationally Distinct Kinase Nucleotide Binding Sites: Application to the Design of Selective Covalent Inhibitors, E. Leproult, S. Barluenga, D. Moras, J.-M. Wurtz, N. Winssinger, *J. Med. Chem.*, **2011**, 54, 1347-55.
- Rapid Fluorescence Imaging of miR-21 in Cells Using Templated Staudinger Reaction, K. Gorska, I. Keklikoglou, U. Tschulena, N. Winssinger *Chem. Sci.* **2011**, 2, 1969-1975.
- Nucleic Acid-Templated Energy Transfer Leading to a Photorelease Reaction and its Application to a System Displaying a Nonlinear Response, M. Röthlingshöfer, G. Gorska. N. Winssinger, *J. Am. Chem. Soc.* **2011**, 133, 18110-18113.
- Diversity-oriented synthesis of diverse polycyclic scaffolds inspired by the logic of sesquiterpene lactones biosynthesis, G. Valot, J. Garcia, V. Duplan, C. Serba, S. Barluenga, N. Winssinger *Angew. Chem. Int. Ed.*, **2012**, 51, 5391-5394.
- Photoreductive Uncaging of Fluorophore in Response to Protein Oligomers by Templated Reaction in Vitro and in Cellulo, K.K. Sadhu, T. Eierhoff, W. Romer, N. Winssinger, *J. Am. Chem. Soc.* **2012**, 134, 20013-20016.
- Self-Assembled Antibody Multimers through Peptide Nucleic Acid Conjugation, S.A. Kazane, J.Y. Axup, C.H. Kim, M. Ciobanu, E.D. Wold, S. Barluenga, B.A. Hutchins, P.G. Schultz, N. Winssinger, V.V. Smider *J. Am. Chem. Soc.* **2013**, 135, 340-346.
- DNA display of fragment pairs as a tool for the discovery of novel biologically active small molecules, J.P. Dagher, C. Zambaldo, M. Ciobanu, P. Morieux, S. Barluenga, N. Winssinger *Chem. Sci.*, **2015**, 6, 739-744.
- Identification of Covalent Bromodomain Binders from DNA Display of Small Molecules, J.P. Dagher, C. Zambaldo, D. Abegg, S. Barluenga, C. Tallant, S. Müller, A. Adibekian, N. Winssinger, *Angew. Chem. Int. Ed.* **2015**, 54, 6057-61.
- Nucleic-acid templated chemical reaction in a live vertebrate, L. Holtzer, I. Oleinich, M. Anzola, K. K. Sadhu, E. Lindberg, M. Gonzalez-Gaitan, N. Winssinger, *ACS Central Science*, **2016**, 2, 394-400.
- Allosterically Regulated Phosphatase Activity from Peptide-PNA Conjugates Folded Through Hybridization, T. Machida, S. Dutt, N. Winssinger, *Angew. Chem. Int. Ed.* **2016**, 55, 8595-8.
- Divergent synthesis and identification of the cellular targets of deoxyelephantopins, R. Lagoutte, C. Serba, D. Abegg, A. Adibekian, N. Winssinger, *Nature Commun.* **2016**, 7, 12470.
- Critical Analysis of Rate Constants and Turnover Frequency in Nucleic Acid-Templated Reactions: Reaching Terminal Velocity, D. Chang, E. Lindberg, N. Winssinger, *J. Am. Chem. Soc.* **2017**, 139, 1444-1447.
- Dynamic Cooperative Glycan Assembly Blocks the Binding of Bacterial Lectins to Epithelial Cells, T. Machida, A. Novoa, E. Gillon, S. Zheng, J. Claudinon, T. Eierhoff, A. Imberty, W. Römer, N. Winssinger *Angew. Chem. Int. Ed.* **2017**, 56, 6762-6766.