

Curriculum Vitae

Prof. Dr. Karl Gademann

Address

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from August 2015:
University of Zurich
Department of Chemistry
Winterthurerstrasse 190
CH-8057 Zürich
karl.gademann@chem.uzh.ch

Personal

Date of Birth: June 27, 1972
Nationality: Swiss
Marital Status: Married
Languages: German, English and French

Research Mission

Total synthesis of natural products and derivatives for the discovery of novel molecular function in biology, medicine and materials science.

Education

2002-2006: Habilitation ETH Zürich, *venia legendi*, awarded 10/2006.
1997-2000: Dissertation ETH Zürich, *Dr. sc. nat.*, awarded 2/2000.
1992-1996: Diploma ETH Zürich, *Dipl. Chem. ETH*, awarded 10/1996.

Research

from Aug. 2015: Full professor for organic chemistry and chemical biology, University of Zürich
2012-2015: Ordinarius für Chemie (full professor/chair), University of Basel
2010-2012: Extraordinarius (associate professor), University of Basel
2006-2010: Assistant professor (Tenure Track), EPF Lausanne
2002-2006: Oberassistent/Habilitand (ETH Zürich, mentor Prof. Dr. Erick M. Carreira)
2000-2001: Postdoctoral fellow (Chemistry and Chemical Biology, Harvard University).
Research advisor: Prof. Dr. Eric N. Jacobsen.
2000: Postdoctoral fellow (Givaudan Fragrance Research, Dübendorf).
1997-2000: *Dr. sc. nat.* ETH (ETH Zürich, Advisor: *Prof. Dr. Dieter Seebach.*
1996: *Dipl. Chem. ETH* (ETH Zürich). Advisor: *Prof. Dr. Dieter Seebach.*
1995: Undergraduate research (ETH Zürich). Advisor: *Prof. Dr. Steven A. Benner.*
1991-1992: Internship (CILAG AG, Schaffhausen).

Awards

2014: The Boehringer-Ingelheim Lectureship at MIT, Cambridge, MA, USA
2012: National Latsis Prize
2010: Novartis Early Career Award in Organic Chemistry, Novartis, Cambridge MA, USA
2009: Ruzicka Prize and Medal, ETH Zürich
2009: Liebig Lectureship of the German Chemical Society
2008: ERC Starting Grant (declined in favor of EURYI award)
2007: European Young Investigator Award (EURYI)
2006: "Prix A. F. Schläfli", Swiss Academy of Sciences.
2006: Thieme Journal Award, Germany.
2005: Lilly Lecture Award, Lilly GmbH, Hamburg, Germany.
2004: Latsis-Prize of the ETH.

- 2003: European Science Foundation Sponsored Participant, Bürgenstock Meeting.
2003: Award for the Best Lecture in Organic Chemistry, Swiss Chemical Society.

Highlights of own scientific work by others (selected):

- Article # 92 picked up by several media outlets in Europe
Article # 79 selected as 'hot paper' by the editors of *Angewandte Chemie* (January 2012)
Article # 60 highlighted in *ACS Chem. Biol.*, *CHIMIA*, *Nat. Prod. Rep.* 'Hot off the press' (March 2010)
Article # 55 presented in 'Noteworthy Chemistry' of the American Chemical Society (Sept. 21, 2009)
Research highlighted in MedChemWatch of the European Society for Medicinal Chemistry (July 2009)
Article # 46 highlighted by the Faculty of 1000 in biology (Sept. 1, 2008)
Article # 46 presented in 'Noteworthy Chemistry' of the American Chemical Society (Sept. 15, 2008)
Article # 46 highlighted by Medical News Today (Aug. 4, 2008)
Article # 40 highlighted in *Synfacts* **2008**, 4, 342, *totallysynthetic.com* (October 10, 2007) and *CHIMIA* (issue 12/2007).

Visiting Professorship

- 2014: UNICAMP, Universidade Estadual de Campinas, Brasil (host: Prof. Dr. R. Pilli)

Intramural service (selected) at the University of Basel

- 2011-to date: Elected member of the Regenz (senate).
2012-2014: Dean of Research, Faculty of Sciences, University of Basel
2012-2014: Member of the directing board of the department of chemistry.
2012-2014: Elected dean of research, faculty of natural sciences.
2012-2014: Director of undergraduate studies in chemistry.
2010-to 2013: Departmental representative for outreach activities to high school teachers.

Extramural service

- 2014- to date: Member of the board (Vorstand) of the Swiss Academy of Science.
2014- to date: DECHEMA (Germany), Wissenschaftlicher Beirat Fachgruppe Biotechnologie/Naturstoffe
2014: DAAD (Germany), Scientific expert in the panel (Referat 521) for outgoing postdoctoral applications
2012-to date: Energy commission of the Swiss Academies, member.
2010-2013: President, Swiss Academy of Sciences, Platform chemistry.
2010: AERES evaluation committee member, France.
2006-2012: Member of the editorial board of *CHIMIA*, international journal for chemistry.
2002- Reviewer for ca. 20 premier journals and for national and international funding agencies (SNF, ERC, ESF, FWF, ANR).

Conference organization (selected)

- Co-organized the Flagship Workshop on Graphene, Bern, Switzerland, 2012
Co-organized the Rigi Workshop in Chemical Biology, Switzerland 2009
Co-organized the 15th symposium for young faculty in bioorganic chemistry, Berlin/Germany 2006.

As of March 25th 2015, **146 lectures** (plenary, invited, departmental or named) were held in Switzerland, Germany, France, UK, Belgium, Norway, United States, China and Japan. Departmental lectures were given at departments of chemistry (many), pharmacy (ETH Zürich, Univ. Basel), plant biology (Univ. of Zürich), material science (ETH Zurich and EMPA St. Gallen) and oceanography (Southampton, UK).

List of publications of the last 5 years

Full list of publications, see <http://www.chemie.unibas.ch/~gademann>

Research publications (peer reviewed):

100. Hideki Miyatake Onozabal, Elias Kaufmann and Karl Gademann

Total Synthesis of the Protected Aglycon of Fidaxomicin (Tiacumicin B, Lipiarmycin A3)

Angew. Chem. Int. Ed. **2015**, *54*, 1933-1936.

99. Samuel Bader, Michael Lüscher, and Karl Gademann

Synthesis of Maculalactone A and Derivatives for Environmental Fate Tracking Studies

Org. Biomol. Chem. **2015**, *13*, 199-206.

98. Verena Grundler, Karl Gademann

Direct Arginine Modification in Native Peptides and Application to Chemical Probe Development

ACS Med. Chem. Lett. **2014**, *5*, 1290-1295.

97. Patrick Burch, Fabian Schmid, Karl Gademann

Neuritogenic Surfaces Using Natural Product Analogs

Advanced Healthcare Materials **2014**, *3*, 1415–1419. doi: 10.1002/adhm.201300671

96. Esther Kohler, Verena Grundler, Daniel Häussinger, Rainer Kurmayer, Karl Gademann, Jakob Pernthaler, Judith F. Blom

The toxicity and enzyme activity of a chlorine and sulfate containing aeruginosin isolated from a non-microcystin-producing Planktothrix strain

Harmful Algae **2014**, *39*, 154–160. Doi: 10.1016/j.hal.2014.07.003

95. Fabian Schmid, Maurizio Bernasconi, Henning J. Jessen, Andreas Pfaltz, Karl Gademann

Catalytic Enantioselective Total Synthesis of (–)-Pyridovericin

Synthesis **2014**, 864-870.

94. Cyril Portmann, Simon Sieber, Silvan Wirthensohn, Judith F. Blom, Laetitia Da Silva, Emilie Baudat, Marcel Kaiser, Reto Brun, and Karl Gademann

Balgacyclamides, Antiplasmodial Heterocyclic Peptides from *Microcystis aeruginosa* EAWAG 251

J. Nat. Prod. **2014**, *77*, 557–562. doi:10.1021/np400814w

93. Patrick Burch, Andrea Chicca, Jürg Gertsch, and Karl Gademann

Functionally Optimized Neuritogenic Farinosone C Analogs: SAR-Study and Investigations on Their Mode of Action

ACS Med. Chem. Lett. **2014**, *5*, 172–177. doi:10.1021/ml400435h

92. José Gomes, Natalie Huber, Alexander Grunau, Leo Eberl and Karl Gademann

Fluorescent Labeling Agents for Quorum Sensing Receptors (FLAQS) in Live Cells

Chem. Eur. J. **2013**, *19*, 9766-9770.

91. Raphael Liffert, Johannes Hoecker, Chandan Kumar Jana, Tom M. Woods, Patrick Burch, Henning Jessen, Markus Neuburger and Karl Gademann
Withanolide A: Synthesis and Structural Requirements for Neurite Outgrowth
Chem. Sci. **2013**, *4*, 2851-2857. doi: 10.1039/C3SC50653C
90. Christophe Thommen, Chandan Kumar Jana, Markus Neuburger, and Karl Gademann
Syntheses of Taiwaniaquinone F and Taiwaniaquinol A via an Unusual Remote C–H Functionalization
Org. Lett. **2013**, *15*, 1390–1393.
89. Johannes Hoecker, Raphael Liffert, Patrick Burch, Robin Wehlauch and Karl Gademann
Caged retinoids as photoinducible activators: implications for cell differentiation and neurite outgrowth
Org. Biomol. Chem. **2013**, 3314-3321. DOI: 10.1039/C3OB40106E
87. Malika Makhlouf Brahmi, Cyril Portmann, Danilo D'Ambrosio, Tom M. Woods, Damiano Banfi, Patrick Reichenbach, Laeticia Da Silva, Emilie Baudat, Gerardo Turcatti, Joachim Lingner and Karl Gademann
Telomerase Inhibitors from Cyanobacteria: Isolation and Synthesis of Sulfoquinovosyl Diacylglycerols from *Microcystis aeruginosa* PCC 7806
Chem. Eur. J. **2013**, *19*, 4596 – 4601.
86. Hideki Miyatake Onozabal, Linda Bannwart and Karl Gademann
Enantioselective Total Synthesis of Virosaine A and Bubbialidine
Chemical Communications **2013**, *49*, 1921 – 1923. doi: 10.1039/C3CC38783F
85. Johannes Hoecker and Karl Gademann
Enantioselective Total Syntheses and Absolute Configuration of JBIR-02 and Mer-A2026B
Org. Lett. **2013**, *5*, 670 – 673, doi: 10.1021/ol303502a
84. Patrick Burch, Massimo Binaghi, Manuel Scherer, Corinna Wentzel, David Bossert, Luc Eberhardt, Markus Neuburger, Peter Scheiffele and Karl Gademann
Total Synthesis of Gelsemiol
Chem. Eur. J. **2013**, *19*, 2589 – 2591. doi: 10.1002/chem.201203746
83. José Gomes, Alexander Grunau, Adrien K. Lawrence, Leo Eberl and Karl Gademann
Bioinspired, Releasable Quorum Sensing Modulators
Chemical Communications **2013**, *49*, 155-157. DOI: 10.1039/C2CC37287H
82. Fabian Schmid, Henning J. Jessen, Patrick Burch and Karl Gademann
Truncated Militarione Fragments Identified by Total Chemical Synthesis Induce Neurite Outgrowth
MedChemComm **2013**, *4*, 135-139. DOI: 10.1039/C2MD20181J
81. Robin Wehlauch, Johannes Hoecker and Karl Gademann
Nitrocatechols as Tractable Surface Release Systems
ChemPlusChem **2012**, *77*, 1071-1074. DOI: 10.1002/cplu.201200251

80. Carles Cantó, Riekelt H. Houtkooper, Eija Pirinen, Dou Y. Youn, Maaïke H. Oosterveer, Yana Cen, Pablo J. Fernandez-Marcos, Hiroyasu Yamamoto, Pénélope A. Andreux, Philippe Cettour-Rose, Karl Gademann, Chris Rinsch, Kristina Schoonjans, Anthony A. Sauve, Johan Auwerx

The NAD⁺ Precursor Nicotinamide Riboside Enhances Oxidative Metabolism and Protects against High-Fat Diet-Induced Obesity

Cell Metabolism **2012**, *15*, 838-847.

79. Elamparuthi Elangovan, Cindy Fellay, Markus Neuburger, Karl Gademann

Total Synthesis of Cyrneine A

Angew. Chem. Int. Ed. **2012**, *51*, 4071-4073. DOI: 10.1002/anie.201200515.

75. Henning J. Jessen, Andreas Schumacher, Fabian Schmid, Andreas Pfaltz and Karl Gademann

Catalytic Enantioselective Total Synthesis of (+)-Torrubiellone C

Org. Lett. **2011**, *13*, 4368–4370.

74. Chandan K. Jana, Johannes Hoecker, Tom M. Woods, Henning J. Jessen, Markus Neuburger, Karl Gademann

Synthesis of Withanolide A, Biological Evaluation of its Neurotogenic Properties and Studies on Secretase Inhibition

Angew. Chem. Int. Ed. **2011**, *50*, 8407-8411.

doi: 10.1002/anie.201101869

72. Henning J. Jessen, Andreas Schuhmacher, Travis Shaw, Andreas Pfaltz, Karl Gademann

A Unified Approach for the Stereoselective Total Synthesis of Pyridone Alkaloids and Their Neurotogenic Activity

Angew. Chem. Int. Ed. **2011**, *50*, 4222-4226.

doi: 10.1002/anie.201007671

Patents

31. Judith Blom, Karl Gademann

Antifouling agents

EP1783128A1

30. Karl Gademann, Samuele Tosatti, Marcus Textor, Stefan Zürcher

Catechol functionalized polymers and method for preparing them

PCT/CH2005/000494

Review articles

Karl Gademann

Copy, Edit, and Paste: Natural Product Approaches to Biomaterials and Neuroengineering

Acc. Chem. Res. **2015**, *48*, 731–739.

78. Jean-Yves Wach and Karl Gademann

Reduce to the Maximum: Truncated Natural Products as Powerful Modulators of Biological Processes

Synlett **2012**, *23*, 163-170.

77. Karl Gademann and Simon Sieber

Chemical Interference of Biological Systems with Natural Products

CHIMIA **2011**, *65*, 835-838.

73. Karl Gademann

Out in the Green: Biologically Active Metabolites Produced by Cyanobacteria

CHIMIA **2011**, *65*, 416-419.

76. Karl Gademann

Controlling Protein Transport by Small Molecules

Current Drug Targets **2011**, *12*, 1574-1580.