

Curriculum vitae

Thomas Wichard

Princeton Environmental Institute
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Education

- 1995-2001 studying biochemistry at the University of Regensburg, Germany
Master's Thesis (diploma in biochemistry),
Institute of Biochemistry, Genetic and Microbiology
(Prof. Dr. Wolfgang Oertel)
- Master thesis:
“Biochemical and physiological characterization of a swarming inhibitor from *Ulva mutabilis*”
- 2001-2002 community services: laboratory assistant in the Institute of Medical Genetics at the Ludwig-Maximilians-University of Munich, Hospital (Prof. Dr. Alfons Meindl)
- 2002-2006 Ph. D. student in the Group of Prof. Dr. Georg Pohnert at the Max-Planck-Institute for Chemical Ecology in Jena, Germany.
- Thesis:
“Investigation of lipoxygenase mediated chemical defenses: Diatom and *Physcomitrella patens* derived oxylipins”
- 2004-2006 Member of the Max-Planck Research School (IMPRS):
“The Exploration of Ecological Interactions with Molecular and Chemical Techniques”

Scientific stays and cruises

Spring 2003 & 2004 Scientific stays at the Marine Biological Station of Roscoff under the supervision of Dr. Serge A. Poulet

March 2005 Participant on the cruise in the North Adriatic Sea (RV Urania, INTERREG monitoring program) in the team of Dr. Adriana Ianora.

Postdoctoral Positions

Aug.-Oct. 2006 Postdoctoral Research Associate in the group of Prof. Georg Pohnert at the Institute of Chemical Sciences and Engineering of the Ecole polytechnique fédérale de Lausanne (Switzerland)

Since Oct. 2006 Dreyfus Postdoctoral Fellow in Environmental Chemistry through the Princeton Environmental Institute under the supervision of Dr. Anne Morel-Kraepiel and Prof. Dr. Francois Morel

Memberships

German Society for Biochemistry and Molecular Biology

British Phycological Society

American Society of Limnology and Oceanography

Publications

1. **Wichard, T.** Investigation of lipoxygenase mediated chemical defences: Diatom and *Physcomitrella patens* derived oxylipins. Thesis, Fridrich-Schiller University Jena, Germany (2006)
2. **Wichard, T.**, Pohnert, G. Formation of Halogenated medium chain hydrocarbons by a lipoxygenase / hydroperoxide halololyase-mediated transformation in planktonic microalgae. *Journal of American Chemical Society* 128, 7114-5 (2006)
3. Stumpe, M., Bode, J., Göbel, C., **Wichard, T.**, Schaaf, A., Frank, W., Frank, M., Reski, R., Pohnert, G. & Feussner, I. Biosynthesis of C9-aldehydes in the moss *Physcomitrella patens*. *Biochimica et Biophysica Acta* 1761, 301-12 (2006)
4. Poulet, S. A., **Wichard, T.**, Ledoux, J. B., Lebreton, B., Marchetti, J., Dancie, C., Bonnet, D., Cueff, A. & Pohnert, G. The influence of diatoms on copepod reproduction. I. New field and laboratory observations related to *Calanus helgolandicus* egg production. *Marine Ecology-Progress Series* 308, 129-142 (2006).
5. **Wichard, T.**, Poulet, S. A. & Pohnert, G. Determination and quantification of $\alpha,\beta,\gamma,\delta$ -unsaturated aldehydes as pentafluorobenzyl-oxime derivates in diatom cultures and natural phytoplankton populations: application in marine field studies. *Journal of Chromatography B-Analytical Technologies in the Biomedical and Life Sciences* 814, 155-161 (2005).
6. **Wichard, T.**, Poulet, S. A., Halsband-Lenk, C., Albaina, A., Harris, R., Liu, D. Y. & Pohnert, G. Survey of the chemical defence potential of diatoms: Screening of fifty one species for $\alpha,\beta,\gamma,\delta$ -unsaturated aldehydes. *Journal of Chemical Ecology* 31, 949-958 (2005).
7. **Wichard, T.**, Göbel, C., Feussner, I. & Pohnert, G. Unprecedented lipoxygenase/hydroperoxide lyase pathways in the moss *Physcomitrella patens*. *Angewandte Chemie-International Edition* 44, 158-161 (2005).
8. Senger, T., **Wichard, T.**, Kunze, S., Göbel, C., Lerchl, J., Pohnert, G. & Feussner, I. A multifunctional lipoxygenase with fatty acid hydroperoxide cleaving activity from the moss *Physcomitrella patens*. *Journal of Biological Chemistry* 280, 7588-7596 (2005).
9. Horner, R. A., Postel, J. R., Halsband-Lenk, C., Pierson, J. J., Pohnert, G. & **Wichard, T.** Winter-spring phytoplankton blooms in Dabob Bay, Washington. *Progress in Oceanography* 67, 286-313 (2005).

10. Carotenuto, Y., **Wichard, T.**, Pohnert, G. & Lampert, W. Life-history responses of *Daphnia pulex* to diets containing freshwater diatoms: Effects of nutritional quality versus polyunsaturated aldehydes. *Limnology and Oceanography* 50, 449-454 (2005).
11. Paffenhofer, G. A., Ianora, A., Miralto, A., Turner, J. T., Kleppel, G. S., d'Alcala, M. R., Casotti, R., Caldwell, G. S., Pohnert, G., Fontana, A., Muller-Navarra, D., Jonasdottir, S., Armbrust, V., Bamstedt, U., Ban, S., Bentley, M. G., Boersma, M., Bundy, M., Buttino, I., Calbet, A., Carlotti, F., Carotenuto, Y., d'Ippolito, G., Frost, B., Guisande, C., Lampert, W., Lee, R. F., Mazza, S., Mazzocchi, M. G., Nejstgaard, J. C., Poulet, S. A., Romano, G., Smetacek, V., Uye, S., Wakeham, S., Watson, S. & **Wichard, T.** Colloquium on diatom-copepod interactions. *Marine Ecology-Progress Series* 286, 293-305 (2005).
12. Pohnert, G., Adolph, S. & **Wichard, T.** Short synthesis of labeled and unlabeled 6Z,9Z,12Z,15-hexadecatetraenoic acid as metabolic probes for biosynthetic studies on diatoms. *Chemistry and Physics of Lipids* 131, 159-166 (2004).
13. Ianora, A., Miralto, A., Poulet, S. A., Carotenuto, Y., Buttino, I., Romano, G., Casotti, R., Pohnert, G., **Wichard, T.**, Colucci-D'Amato, L., Terrazzano, G. & Smetacek, V. Aldehyde suppression of copepod recruitment in blooms of a ubiquitous planktonic diatom. *Nature* 429, 403-407 (2004).
14. Adolph, S., Bach, S., Blondel, M., Cueff, A., Moreau, M., Pohnert, G., Poulet, S. A., **Wichard, T.** & Zuccaro, A. Cytotoxicity of diatom-derived oxylipins in organisms belonging to different phyla. *Journal of Experimental Biology* 207, 2935-2946 (2004).

Conferences and Symposia

Oral presentations

1. Wichard, T. Activated chemical defense mechanism of diatoms. 26. *Fränkisch-Mitteldeutsches Naturstoffchemikertreffen, Würzburg, Germany* (2003).
2. Wichard, T. Cloning and characterization of a lipoxygenase from *Physcomitrella patens* as a model system in the chemical defence of diatoms. *Second German Middle East Plant Molecular Biology Meeting, Jena, Germany* (2004).
3. Wichard, T. Cloning and characterization of a lipoxygenase from *Physcomitrella patens* as a model system in the chemical defense of diatoms. *Second IMPRS symposium, Jena, Germany* (2005).
4. Wichard, T., Poulet, S. A. & Pohnert, G. Formation and impact of polyunsaturated aldehydes during the phytoplankton succession. *ASLO Summer Meeting, Santiago de Compostela, Spain* (2005).
5. Wichard, T., Göbel, C., Stumpe, M., Feussner, I. & Pohnert, G. High variability of eicosanoid-transformation in lower plants. 2. *European Symposium on Plant Lipids, Copenhagen, Denmark* (2005).
6. Wichard, T. Neue halogenierte Kohlenwasserstoffe aus marinen Kieselalgen. 33. *Naturstoffchemikertreffen: Chemie, Biologie, Ökologie, Jena, Germany* (2005).
7. Wichard, T. Der Einfluss des Phytoplanktons auf den Fortpflanzungserfolg von *Calanus helgolandicus* in den Küstengewässern vor Roscoff (Bretagne, Frankreich): $\alpha, \beta, \gamma, \delta$ -ungesättigte Aldehyde und Polyenfettsäuren im Jahreszyklus des Phytoplanktons. 11. *Wissenschaftlichen Tagung der Sektion Phykologie der Deutschen Botanischen Gesellschaft, Helgoland, Germany* (2006)

Poster presentations

1. Wichard, T., Poulet, S. A. & Pohnert, G. Determination of deleterious unsaturated aldehydes in phytoplankton. *XI international symposium on marine natural products, Sorrento, Italy* (2004).

2. Wichard, T., Senger, T., Göbel, C., Kunze, S., Feussner, I. & Pohnert, G. Unprecedented oxylipin pathways in the moss *Physcomitrella patens*: Isolation and characterization of a new multifunctional lipoxygenase with lyase cleaving activity. *XVII International Botanical Congress, Vienna, Austria* (2005).
3. Wichard, T., Poulet S.A., Pohnert G. The influence of diatoms on copepod reproduction: Field and laboratory observations. *54th Annual Meeting of the British Phycological Society, Plymouth, United Kingdom* (2006)
4. Wichard, T., Pohnert G. Formation of Halogenated medium chain hydrocarbons by a lipoxygenase / hydroperoxide halololyase- mediated transformation in planktonic microalgae. *18. Irseer Naturstofftage, Germany* (2006)

Workshops

1. Colloquium on Diatom-Copepod Interactions, *Benthos Laboratory of the Stazione Zoologica Anton Dohrn on Ischia, Italy, 3 to 6 November 2002*
2. ESF LESC EXPLORATORY WORKSHOP Influence of Phytoplankton on Herbivore Reproductive Success – Impact of Infochemicals and Food Quality? *Roscoff, France, 29 - 31 March 2006* (invited speaker)

References

Prof. Georg Pohnert

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