

Daniel Kracher, PhD

University of Natural Resources and Life Sciences (BOKU), Vienna Institute of Biotechnology, Department of Food Science and Technology

DanielKracher@BOKU.ac.at • www.ludwiglab.eu

PERSONAL DETAILS:

Citizenship: Austrian
Current work address: BOKU-University, 1190 Vienna, Austria
Unique identifiers: orcid.org/0000-0002-3856-3170; Scopus author ID: **55357164200**; Web of Science Researcher ID (Publons): **H-6667-2019**

EDUCATION AND PROFESSIONAL EXPERIENCE:

07/2018 – dato **Postdoctoral researcher at the BOKU University**
04/2018 – 06/2019 **Postdoctoral researcher at the Manchester Institute of Biotechnology**
08/2016 – 03/2018 **Postdoctoral researcher at the BOKU University**
08/2016 **PhD in Biotechnology** (with distinction), BOKU University Vienna
Title: "*Cellulose degrading oxidoreductases*"
12/2009 **MSc in Biotechnology** (with distinction), BOKU University Vienna
04/2008 **BSc in Food- and Biotechnology**, BOKU University Vienna

PROJECTS:

12/2020 – dato **OXIDISE - Interaction and Kinetics of Oxidative Biomass Degrading Enzymes Resolved by High-Resolution Techniques.** ERC Consolidator Grant; project leader: R. Ludwig
04/2018 – 12/2020 **Electron flow during oxidative cellulose degradation**, Erwin Schrödinger Fellowship of the Austrian Science Fund FWF; project leader: D. Kracher
08/2016 – 03/2018 **Electron Transfer in Cellulose Degrading Enzymes**, Austrian Science Fund FWF; project leader: R. Ludwig
01/2014 – 07/2016 **INDOX - Industrial Redox enzymes.** European Commission FP7 project INDOX; project leader: R. Ludwig
09/2016 – 11/2016 **Research stay at NMBU Norway** (Prof. Vincent Eijsink)
12/2010 – 07/2016 **International PhD programme "Biomolecular Technology of Proteins (BioToP)"** BOKU University, Vienna
06/2010 – 12/2013 **ACIB GmbH – Austrian Centre of Industrial Biotechnology**
in collaboration with BIOMIN GmbH
12/2009 – 05/2010 **Postgraduate Scholarship** from BOKU University

SELECTED GRANTS AND AWARDS:

2018	Erwin Schrödinger Fellowship of the Austrian Science Fund
2017	Vincent Massey Award , 19 th International Triennial Symposium on Flavins and Flavoproteins, Groningen, The Netherlands
2017	Klaus Fischer Innovation Award (BOKU University)
2017	Best Paper Award (BOKU University)
2016	Dr. Wilfrieda Lindner Science Award (BOKU University)
2016	Research Award of the Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)
2016	Best poster award – LPMO Meeting Copenhagen, Denmark
2015	Best cover award 2014 - 1 st place; The Biotechnology Journal
2013	BOKU & tecnet equity Innovation Award - 3 rd place
2009	Postgraduate scholarship (BOKU University) (6 month)

AREAS OF EXPERTISE:

Microbiological, molecular biological and biochemistry standard techniques; rational and semi-rational enzyme engineering (site directed and site-saturation mutagenesis, directed evolution); assay development; stopped-flow spectroscopy; isothermal titration calorimetry

MISCELLANEOUS:

10/2019 – dato	Lecturer in the master course “Practical Course in Protein Engineering and Technology (5 ECTS)”
09/2017 – dato	Lecturer in the master course “Practical Course in Enzyme Technology (3 ECTS)”
04/2013 – 04/2015	Member of the Curriculum Committee within the PhD programme “Biomolecular Technology of Proteins (BioToP)”
01/2011 – 03/2013	Laboratory manager of the Food Biotechnology Lab (BOKU University)
10/2009 – 01/2010	Teaching assistant in the master course “Practical Course in Enzyme Technology”

PERSONAL SKILLS:

Languages:	German (native), English (fluently – writing and speaking)
Hobbies:	Travelling, tennis, running, hiking, literature
Memberships:	Ecological Society of Germany, Austria and Switzerland (since 2017); American Chemical Society (since 2012); Austrian Association of Molecular Life Sciences and Biotechnology (since 2011); BOKU Alumnis (since 2010)

SCIENTIFIC RECORD:

Peer-reviewed publications:	28
<i>h</i> -index (Scopus / Google Scholar):	14 / 16
Conference talks:	17 (3 invited)
Poster presentations:	30
Supervision of students:	1 PhD student, 6 master students; 4 bachelor students

SELECTED PUBLICATIONS

Breslmayr E., Laurent C.V.F.P., Scheiblbrandner S., Jerkovic A., Heyes D.J., Oostenbrink C., Ludwig R., Hedison T.M., Scrutton N.S., **Kracher D** (2020) *Protein Conformational Change is Essential For Reductive Activation of Lytic Polysaccharide Monooxygenase by Cellobiose Dehydrogenase*. **ACS Catalysis**, Mar. 2020; 9:4842–4853.

Filandr F., Man P., Halada P., Chang H., Ludwig R. **Kracher D**. *The H₂O₂-dependent activity of a fungal lytic polysaccharide monooxygenase investigated with a turbidimetric assay*. **Biotechnology for Biofuels**. Feb. 2020; 13:37.

Kracher D.*, Andlar M., Furtmüller P.G., Ludwig R*. *Active-site copper reduction promotes substrate binding of fungal lytic polysaccharide monooxygenase and reduces stability*. **The Journal of Biological Chemistry**. Feb 2018; 293: 1676. * corresponding authors.

Kracher D., Forsberg Z., Bissaro B., Gangl S., Preims M., Sygmund C., Eijsink V.G.H., Ludwig R. *Polysaccharide Oxidation by Lytic Polysaccharide Monooxygenase is Enhanced by Engineered Cellobiose Dehydrogenase*. **The FEBS Journal**. Sep 2019. 287:897-908.

Kracher D., Scheiblbrandner S., Felice A.K.G., Breslmayr E., Preims M., Ludwicka K., Haltrich D., Eijsink V.G.H., Ludwig R. *Extracellular electron transfer systems fuel cellulose oxidative degradation*. **Science**. May 2016; 352:1098-101.

Kracher D., Zahma K., Schulz C., Sygmund C., Gorton L., Ludwig R. *Interdomain electron transfer in cellobiose dehydrogenase: Modulation by pH and divalent cations*. **The FEBS Journal**. Aug 2015; 282:3136-48.

Tan T-C*, **Kracher D.***, Gandini R., Sygmund C., Kittl R., Haltrich D., Hallberg M.B., Ludwig R. & Divne C. *Structural basis for cellobiose dehydrogenase action during oxidative cellulose degradation*. **Nature Communications**. July 2015; 6:7542. *equally contributing first authors

Sygmund C.*, **Kracher D.***, Scheiblbrandner S., Zahma K., Felice A.K.G., Harreither W., Kittl R., Ludwig R. *Characterization of the two Neurospora crassa cellobiose dehydrogenases and their connection to oxidative cellulose degradation*. **Applied and Environmental Microbiology**. Sep 2012; 78(17):6161-71. *equally contributing first authors

Goncalves, L., **Kracher, D.**, Milker, S., Rudroff, F., Fink, M. J., Ludwig, R., Bommarius, A., Mihovilovic, M. *Mutagenesis-Independent Stabilization of Class B Flavin Monooxygenases in Operation*. **Advanced Synthesis and Catalysis**. June 2017; 359:2121-31

Kracher D. and Ludwig R. *Cellobiose dehydrogenase: An essential enzyme for lignocellulose degradation in nature - A review*. **Die Bodenkultur**. Dec 2016; 67:145-163.