

12th Wartburg Symposium

on Flavor Chemistry & Biology

Hotel on the Wartburg, Eisenach, Germany

May 21-24, 2019

Technical Program



Organizers

Prof. Dr. T. Hofmann

Prof. Dr. H. Zorn

Dr. C. Dawid

www.wartburg-symposium.de

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12th Wartburg Flavor Symposium

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„Stiftung zur Förderung des Wartburg Symposiums
on Flavour Chemistry & Biology“
Malvenweg 23; D-85375 Neufahrn, Germany

www.wartburg-symposium.de

Bus Transfers

Tuesday, May 21, 2019

11:00-12:00	Registration at the Steigenberger Hotel, the Hotel Glockenhof and the Wartburg Hotel (Depending on the hotel accommodation. Those who are staying in the Hotel Kaiserhof or other accommodations can pick up their conference bag in the lobby of the Wartburg Hotel)
12:00	Bus departs from downtown hotels to Wartburg hotel
21:15	Bus to downtown hotels after Barbecue

Wednesday, May 22, 2019

7:45	Bus transfer from downtown hotels to Wartburg Hotel
18:40	Bus departs to downtown - Free evening

Thursday, May 23, 2019

7:45	Bus transfer from downtown hotels to Wartburg Hotel
23:00	Bus departs to downtown hotels after Symposium dinner

Friday, May 24, 2019

7:45	Bus transfer from downtown hotels to Wartburg Hotel
13:45	Bus transfer to downtown hotels

Tuesday, May 21, 2019

11:00-12:00	Registration at the Steigenberger Hotel, the Hotel Glockenhof and the Wartburg Hotel (depending on the hotel accommodation)
12:00	Bus departs from downtown hotels to Wartburg Hotel
12:30-13:45	Lunch break
13:45-15:20	Tuesday, May 21 – Session 1 CHEMOSENSORY PERCEPTION AND SIGNAL PROCESSING <i>Chair: T. Acree</i>
13:45-14:00	Welcome and Introduction
14:00-14:30	<i>J. Mainland</i> ; Monell Chemical Senses Center, U.S.A. Predicting olfactory receptor responses to mixtures using a competitive binding model
14:30-14:55	<i>M. Behrens</i> ; Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Germany Taking fingerprints of the evolution – Bitter taste receptor gene repertoires
14:55-15:20	<i>P. Marcinek</i> ; Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Germany Selective chemoreception of food-relevant pyrazines relates to evolutionary conserved detection of semiochemicals
15:20-16:00	Coffee break
16:00-17:45	Tuesday, May 21 – Session 2 CHEMOSENSORY PERCEPTION AND SIGNAL PROCESSING <i>Chair: D. Krautwurst</i>
16:00-16:30	<i>I. Depoortere</i> ; Gastrointestinal Disorder Center, KU Leuven, Belgium Chemosensory signalling of nutrients and non-nutrients in the gut: clinical relevance
16:30-16:55	<i>T. Acree</i> ; Food Science Department, Cornell University, U.S.A. Temporal and conditioned learning effects on odorant mixture perception
16:55-17:20	<i>M. Parker</i> ; The Australian Wine Research Institute, Australia Factors contributing to variation in retronasal odor perception from glycoconjugates
17:20-17:45	<i>J.-L. Le Quere</i> ; Centre des Sciences du Goût et de l'Alimentation, INRA, France Nosespace of dark chocolates differing in sensory characteristics using PTR-TOF-MS and link to flavor perception through simultaneous Temporal Dominance of Sensations (TDS)
18:15-19:15	Possibility to visit the castle
19:30-21:00	Barbecue and finger food
21:15	Bus to downtown hotels

Wednesday, May 22, 2019

- 7:45 Bus transfer from downtown hotels to Wartburg Hotel
- 8:30-10:15** **Wednesday, May 22 – Session 3**
FLAVOR SYSTEMS: MOLECULAR DECODING, INTERACTIONS AND PERCEPTION
Chair: H. Jelen
- 8:30-9:00 *K.-H. Engel*; Chair of Food Technology, Technical University of Munich, Germany | Chirality – an important phenomenon regarding biosynthesis, perception and authenticity of flavor compounds
- 9:00-9:25 *C. Dawid*; Chair of Food Chemistry and Molecular Sensory Science, Technical University of Munich, Germany
Targeting the bitter taste challenge of plant-based proteins by means of a SENSOMICS approach: rapeseed and pea protein
- 9:25-9:50 *D. G. Peterson*; Department of Food Science and Nutrition, University of Minnesota, U.S.A. | Application of untargeted flavoromics analysis to characterize chemical drivers of specialty grade coffee quality
- 9:50-10:15 *L. Brehm*; Chair of Food Chemistry and Molecular Sensory Science, Technical University of Munich, Germany
Novel thiamine-derived taste enhancers made by culinary chemistry
- 10:15-10:50** **Coffee break**
- 10:50-12:15** **Wednesday, May 22 – Session 4**
FLAVOR SYSTEMS: MOLECULAR DECODING, INTERACTIONS AND PERCEPTION
Chair: E. Guichard
- 10:50-11:20 *J. Ley*; Flavors Division, Research & Technology, Symrise AG, Germany
Matairesinol – an effective natural bitter masking compound
- 11:20-11:45 *V. Mittermeier*; Chair of Food Chemistry and Molecular Sensory Science, Technical University of Munich, Germany
Discovery of acetylenic oxylipins as natural kokumi enhancers in golden chanterelles
- 11:45-12:15** **Flash Poster Presentations**
Chair: A. Taylor
- 11:45-11:50 *A. C. S. Ferreira*; Faculty of Biotechnology – Portuguese Catholic University, Portugal | Network Reconstruction as a tool to integrate data from GC-MS and UPLC-QTOF-MS: new compounds related with Port Wine aging

- 11:50-11:55 *V. Ferreira*; Laboratory for Aroma Analysis and Enology, University of Zaragoza, Spain | 14 wine fruity esters can be replaced by a single one in reconstitution experiments and hence, can be defined as a single aroma vector
- 11:55-12:00 *M. Majcher*; Faculty of Food Science and Nutrition, Poznań University of Life Sciences, Poland | Key aroma compounds formation during preparation of pumpnickel bread
- 12:00-12:05 *P. Fuchsmann*; Agroscope, Institute for Food Sciences (IFS), Switzerland | Identification of plasma and urinary volatile food intake biomarkers for milk, cheese, and soy-based drink by untargeted GC-MS in healthy humans
- 12:05-12:10 *M. Alfonso-Prieto*; Computational Biomedicine, Institute for Advanced Simulation IAS-5 and Institute of Neuroscience and Medicine, Forschungszentrum Jülich, Germany
Understanding ligand selectivity in bitter taste receptors using multiscale simulations
- 12:10-12:15 *J. A. Piornos*; The Flavour Centre, Department of Food and Nutritional Sciences, University of Reading, United Kingdom
Quantification of odor active compounds and calculation of their orthonasal and retronasal detection thresholds in alcohol-free beer
- 12:15-13:50 Lunch break**
- 13:50-15:05 Wednesday, May 22 – Session 5
FLAVOR SYSTEMS: MOLECULAR DECODING,
INTERACTIONS AND PERCEPTION
Chair: D. Peterson**
- 13:50-14:15 *A. Taylor*; Flavometrix Limited, United Kingdom
To Mars and back - with added flavor!
- 14:15-14:40 *B. Siegmund*; Institute of Analytical Chemistry and Food Chemistry, Graz University of Technology, Austria
Hemp oil – a plant oil with a high omega-3 fatty acid content and interesting flavor properties
- 14:40-15:05 *K. R. Cadwallader*; Department of Food Science and Human Nutrition, University of Illinois, U.S.A. | Characterization of odor-important trace-level mint lactones in peppermint
- 15:05-16:50 Coffee break and Poster session**

- 16:50-18:30** **Wednesday, May 22 – Session 6**
FLAVOR SYSTEMS: MOLECULAR DECODING,
INTERACTIONS AND PERCEPTION
Chair: M. Steinhaus
- 16:50-17:15 *H. Jelen*; Faculty of Food Science and Nutrition, Poznań University of Life Sciences, Poland | Determination of volatiles and odor active compounds in cape gooseberry (*Physalis peruviana* L.) using different extraction approaches
- 17:15-17:40 *O. Novotny*; Nestlé Research and Development Orbe, Switzerland
Unexpected potential of iso-oligosaccharides in generation of important food odorants
- 17:40-18:05 *M. C. Qian*; Department of Food Science & Technology, Oregon State University, U.S.A.
Key aroma compounds in frozen surimi of silver carp, Pacific whiting and Alaska pollock by aroma extract dilution analysis
- 18:05-18:30 *J. Munafo*; Department of Food Science, University of Tennessee, U.S.A.
Key chiral odorants from meehan's mint (*Meehania cordata*)
- 18:40 Bus to downtown hotels and free evening

Thursday, May 23, 2019

- 7:45 Bus transfer from downtown hotels to Wartburg Hotel
- 8:30-9:50 Thursday, May 23 – Session 7
NEW COMPUTATIONAL APPROACHES IN FLAVOR CHEMISTRY
Chair: M. Behrens**
- 8:30-9:00 *P. Carloni*; Computational Biomedicine, Juelich Research Center, Germany | Ligand specificity across bitter taste receptors
- 9:00-9:25 *A. Di Pizio*; Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Germany
Modeling the interactions of flavor molecules with their receptors: the case of bitter taste
- 9:25-9:50 *C. Hartmann*; Nestlé Research Center, Switzerland
The smell of the place: a computational approach towards understanding dispersion of aroma compounds in ventilated rooms
- 9:50-10:25 Coffee break**
- 10:25-12:20 Thursday, May 23 – Session 8
NEW COMPUTATIONAL APPROACHES IN FLAVOR CHEMISTRY
Chair: J. Ley**
- 10:25-10:55 *M. A. Jongsma*; Computational Biomedicine, Bioscience, Wageningen University & Research, The Netherlands
Tongue- and nose-on-a-chip development
- 10:55-11:20 *L. Springer*; Institute for Chinese Life Sciences (ICL), Charité - Universitätsmedizin Berlin, Germany | Taste Active Components in Plants Identified by Data-Mining of Chinese Historical Manuscripts
- 11:20-11:45 *T. Thomas-Danguin*; Centre des Sciences du Goût et de l'Alimentation, AgroSup Dijon, CNRS, INRA, Université Bourgogne Franche-Comté, France
Towards the improvement of food flavor analysis: Modelling chemical and sensory data and expert knowledge integration
- 11:45-12:15 **Flash Poster Presentations**
Chair: B. Siegmund
- 11:45-11:50 *M. Granvogl*; University of Hohenheim, Institute of Food Chemistry, Germany | Desired and undesired food-borne bioactives in rapeseed oil
- 11:50-11:55 *P. Schmitt-Kopplin*; Research Unit Analytical BioGeoChemistry (BGC), Helmholtz Zentrum München, Germany
Metabolomics in archeochemistry of wines and spirits
- 11:55-12:00 *A. Riegel*; Chair of General Food Technology, Technical University of Munich, Germany | Structure-odor relationships of chiral α -mercaptoalkanones and β -mercaptoalkanols

12:00-12:05	<i>S. Soares</i> ; REQUIMTE, LAQV, Faculty of Sciences, University of Porto, Portugal Food polyphenols interaction with bitter taste receptors and with salivary proteins
12:05-12:10	<i>A. Hammer</i> ; Institute of Food Chemistry and Food Biotechnology, Justus Liebig University Giessen, Germany Enzymatic generation of odor active aldehydes
12:10-12:15	<i>A. R. Monforte</i> ; Faculty of Biotechnology – Portuguese Catholic University, Portugal Strecker degradation and interaction between phenolics, α -dicarbonyls and sugars: target and untargeted approach brings new discoveries of reaction intermediates.
12:15-14:00	Lunch break
14:00-14:55	Thursday, May 23 – Session 9 FUNCTIONAL FLAVOR GENOMICS AND BIOTECHNOLOGY <i>Chair: U. Krings</i>
14:00-14:30	<i>N. Lindley</i> ; Biotransformation Innovation Platform, A*Star Singapore, Singapore Metabolic engineering strategy for sustainable flavor and fragrance synthesis
14:30-14:55	<i>T. Trapp</i> ; Institute of Food Chemistry and Food Biotechnology, Justus Liebig University Giessen, Germany Elucidation of the biosynthesis of bicyclic monoterpenoids by <i>Pleurotus sapidus</i> by novel tools of aroma dilution analysis and labelling studies
14:55-16:30	Coffee break and Poster session
16:30-17:45	Thursday, May 23 – Session 10 FUNCTIONAL FLAVOR GENOMICS AND BIOTECHNOLOGY <i>Chair: J. Munafo</i>
16:30-16:55	<i>O. Yu</i> ; Conagen Inc, U.S.A. Synthetic biology is changing the “chemistry” of flavors
16:55-17:20	<i>N. J. Nieuwenhuizen</i> ; Plant and Food Research, Mt Albert, Auckland, New Zealand Consumer-driven flavor genomics in kiwifruit (<i>Actinidia</i> spp.)
17:20-17:45	<i>J. Schrader</i> ; Dechema Research Institute, Germany Expanding the structure space of terpenes by synthetic biology
18:30 -19:30	Concert at the Wartburg
19:45-22:45	Symposium Dinner
23:00	Bus departs to downtown hotels

Friday, May 24, 2016

- 7:45 Bus transfer from downtown hotels to Wartburg Hotel
- 8:30-10:15** **Friday, May 24 – Session 11**
FOOD-BORN BIOACTIVES: MOLECULAR DECODING, INTERACTIONS AND PERCEPTION
Chair: W. Langhans
- 8:30-9:00 *V. Somoza*; Physiological Chemistry, University of Vienna, Austria
Emerging role of extra-oral chemoreceptors for the identification of bitter taste active compounds
- 9:00-9:25 *J. Sun*; Beijing Advanced Innovation Center for Food Nutrition and Human Health, Beijing Technology and Business University, Beijing, China | Study on flavor and bioactive compounds of Baijiu-the traditional alcoholic beverage of China
- 9:25-9:50 *H. Loos*; Chair of Aroma and Smell Research, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
Odorants in human milk: their origin and behavioural significance
- 9:50-10:15 *F. Canon*; Centre des Sciences du Goût et de l'Alimentation, AgroSup Dijon, CNRS, INRA, Université Bourgogne Franche-Comté, France | Interindividual variability of oral metabolization and release of aroma compounds in elderly
- 10:15-10:50** **Coffee break**
- 10:50-12:10** **Friday, May 24 – Session 12**
NEXT-GENERATION TECHNOLOGIES IN FLAVOR MOLECULE AND PRECURSOR DISCOVERY
Chair: M. Wüst
- 10:50-11:20 *P. Boeker*; Institute for Agricultural Engineering and Institute of Nutritional and Food Sciences, Chair of Bioanalytics, University of Bonn, Germany
Hyper-fast Flow-Field Thermal Gradient GC for high-throughput aroma measurements and 2-D high-resolution separations
- 11:20-11:45 *K. Sebald*; Chair of Food Chemistry and Molecular Sensory Science, Technical University of Munich, Germany | Novel approaches to characterize tasty peptidome of fermented foods
- 11:45-12:10 *M. Steinhaus*; Leibniz-Institute for Food Systems Biology at the Technical University of Munich, Germany | Taking SAFE to the next level: development and evaluation of a device for an automated solvent-assisted flavor evaporation (aSAFE)
- 12:10-13:30** **Farewell lunch**
- 13:45 Bus transfer to downtown hotels

END OF THE SYMPOSIUM

