

Affiliate Professor Markus Herderich

CertFoodChem, PhD (Dr. rer. nat., *summa cum laude*) *University of Würzburg*

Approbation as official food chemist (LUA Erlangen)

Dr. habil. *University of Würzburg*

Affiliate Associate Professor *The University of Adelaide* (2001)

Markus holds the position of Group Manager – Research.

Markus has authored or co-authored more than 71 refereed papers and more than 16 reviews and technical publications. He is a member of the Policy Advisory Board for the *Journal of Agricultural and Food Chemistry*.

In 1993, Markus received the award for the *Best PhD thesis* from the University of Würzburg, and in 2000, the Kurt-Tüffel Award for *Outstanding young scientist* from the German Society of Food Chemists. Markus has one provisional patent.

Markus is a member of the following scientific societies:

- German Chemical Society
- German Society of Food Chemists
- German Society for Mass Spectrometry
- American Society for Mass Spectrometry
- American Chemical Society
- Australian Society of Viticulture and Oenology

Keynote speaker engagements and major publications (1999-2004)

Presentations

- *HPLC-MS Analysis of carotenoid-derived aroma precursors* ACS National Meeting, San Francisco 2000.
- *Red wine colour and mouth-feel: analysis of phenolic pigments and tannins* ASEV National Meeting, San Diego 2001.
- *Yeast-mediated formation of anthocyanin-derived pigments in red wine* ACS National Meeting, New Orleans 2003.
- *Potential cardiovascular benefits of moderate wine consumption.* Vanderbilt University Medical Center, Nashville 2003.
- *Anthocyanins, anthocyanin-derived pigments and the mysteries of red wine colour* International Workshop on Anthocyanins, Sydney 2004.
- *Grape maturity and tannins: the impact of viticultural treatments on grape and wine tannins* 12th Australian Wine Industry Technical Conference, Melbourne 2004.

Papers

- 23 **M. Herderich**, M. Sefton and A. Pollnitz "Stable isotope dilution analysis of wine fermentation products by HS-SPME-GC-MS" *Journal of Analytical and Bioanalytical Chemistry*, accepted for publication.
- 22 T. Siebert, H. Smyth, D. Capone, C. Neuwöhner, K. Pardon, G. Skouroumounis, "Grape maturity and tannins: the impact of viticultural treatments on grape and wine tannins" Proceedings of the 12th Australian Wine Industry Technical Conference, Melbourne 2004, accepted for publication
- 21 **M. Herderich**, S.-J. Bell, H. Holt, R. Ristic, W. Birchmore, K. Thompson and P.G. Iland D. Cozzolino, M.J. Kwiatkowski, M. Parker, W.U. Cynkar, R.G. Damberg, M. Gishen and **M.J. Herderich** "Prediction of phenolic compounds in red wine fermentations by visible and near infrared spectroscopy" *Anal. Chim. Acta* 2004, 513, 73-80.
- 19 J. Eglinton, M. Griesser, P. Henschke, M. Kwiatkowski, M. Parker and **M. Herderich** "Yeast-mediated formation of pigmented polymers in red wine" in Red wine colour: revealing the mysteries (Eds.: A. Waterhouse, J. Kennedy), ACS Symposium Series 886, American Chemical Society, Washington, DC,

2004, p. 7-21.

- Y. Hayasaka, E.J. Waters, V. Cheynier, **M.J. Herderich** and S. Vidal "Characterization of proanthocyanidins in grape seeds using electrospray mass spectrometry" *Rapid Commun. Mass Spectrom.* 2003, *17*, 9-16.
- A.E. Hakansson, K. Pardon, Y. Hayasaka, M. de Sa and **M. Herderich** "Structures and colour properties of new red wine pigments" *Tetrahedron Lett.* 2003, *44*, 4887-4891.
- T. Siebert, **M. Herderich**, L. Francis and A. Pollnitz "No evidence of 'atypical ageing taint' in Australian white wine" *Aust. N.Z. Wine Ind. J.* 2003, *18*, 55-56, 58.
- J. Feurle, E. Espinosa, S. Eckstein, F. Pont, V. Kunzmann, J.-J. Fournie, **M. Herderich** and M. Wilhelm "Escherichia coli produces phosphoantigens activating human $\gamma\delta$ T cells" *J. Biol. Chem.* 2002, *277*, 148-154.
- S. Diem and **M. Herderich** "Reaction of tryptophan with carbohydrates: Mechanistic studies on the formation of carbohydrate-derived β -carbolines" *J. Agric. Food Chem.* 2001, *49*, 5473-5478.
- S. Diem and **M. Herderich** "Reaction of tryptophan with carbohydrates: Identification and quantitative determination of novel β -carboline alkaloids in food" *J. Agric. Food Chem.* 2001, *49*, 2486-2492.
- S. Diem, J. Albert and **M. Herderich** "Reactions of tryptophan with carbohydrates: Identification of pentose-derived tryptophan glycoconjugates in food" *Eur. Food Res. Technol.* 2001, *213*, 439-447.
- G. Bringmann, M. Wohlfahrt, H. Rischer, M. Heubes, W. Saeb, S. Diem, **M. Herderich** and J. Schlauer "A photometric screening method for dimeric naphthylisoquinoline alkaloids and complete on-line structural elucidation of a dimer in crude plant extracts, by the LC-MS/LC-NMR/LC-CD triad" *Anal. Chem.* 2001, *73*, 2571-2577.
- M. Herderich** "HPLC-MS analysis of carotenoid-derived aroma precursors" in CAROTENOID-DERIVED AROMA COMPOUNDS (Eds.: P. Winterhalter, R. L. Rouseff), ACS Symp. Ser. 802, American Chemical Society, Washington, DC, 2002, p. 36-55.
- S. Diem, B. Gutsche and **M. Herderich** "Degradation of tetrahydro- β -carbolines in the presence of nitrite: HPLC-MS analysis of the reaction products" *J. Agric. Food Chem.* 2001, *49*, 5993-5998.
- W. Adam, C. Mock-Knoblach, C. R. Saha-Möllner and **M. Herderich** "Are MnIV species involved in Mn(Salen)-catalyzed Jacobsen-Katsuki epoxidations? A mechanistic elucidation of their formation and reaction modes by EPR spectroscopy, mass-spectral analysis, and product studies: Chlorination versus oxygen transfer" *JACS* 2000, *122*, 9685-9691.
- S. Diem, J. Bergmann and **M. Herderich** "Tryptophan-N-glucoside in fruits and fruit juices" *J. Agric. Food Chem.* 2000, *48*, 4913-4917.
- S. Diem, B. Gutsche and **M. Herderich** "Nutritional sources of novel tetrahydro- β -carbolines" in Neurotoxic FACTORS in parkinson's disease and related disorders (Eds.: A. Storch, M. A. Collins), Kluwer Academic / Plenum Publishers, New York, 2000, p. 151-154.
- M. Fein, K.-H. Fuchs, H. Stopper, S. Diem and **M. Herderich** "Duodenogastric reflux and foregut carcinogenesis: analysis of the duodenal juice in the rodent cancer model" *Carcinogenesis* 2000, *21*, 2079-2083.
- M. Schmittel, A. Ganz, D. Fenske and **M. Herderich** "Heteroleptic silver(I) and zinc(II) bisphenanthroline complexes" *J. Chem. Soc. Dalton Trans.* 2000, 353-359
- H. Jomaa, J. Feurle, K. Lühs, V. Kunzmann, H.-P. Tony, M. Herderich and M. Wilhelm. "V γ 9/V δ 2 T cell activation induced by bacterial low molecular mass compounds depends on the 1-deoxy-D-xylulose 5-phosphate pathway of isoprenoid biosynthesis" • *FEMS Immunology and Medical Microbiology* 1999, *25*, 371-378
- M. Herderich** "Mass spectrometry in flavor chemistry: Past and prospect" in Flavor chemistry: THIRTY years of progress (Eds.: R. Teranishi, E. L. Wick, I. Hornstein), Kluwer Academic / Plenum Publishers, New York, 1999, p. 9-18.
- B. Gutsche, C. Grun, D. Scheutzow and **M. Herderich** "Tryptophan glycoconjugates in food and human urine" *Biochem. J.* 1999, *343*, 11-19.