

Prof. Andrew Marston

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Short CV

Prof. Andrew Marston was born in Zambia. He studied chemistry at University College London and in 1979 received a PhD from the Department of Organic Chemistry at Liverpool University, U.K., working on new synthetic methods for peptides. He was then awarded a Royal Society / NATO fellowship to perform postdoctoral research on plant-derived tumour promoters at the German Cancer Research Centre in Heidelberg.

From 1983 to 2004, he was a senior research scientist at the Institute of Pharmacognosy and Phytochemistry at the University of Lausanne in Switzerland and from 2004 to 2009 he was senior lecturer at the Laboratory of Pharmacognosy and Phytochemistry, University of Geneva, Switzerland.

Professor Marston joined the Department of Chemistry at the University of the Free State in 2009.

He is author of over 200 scientific publications and co-author of several books. His distinctions include the Rhône-Poulenc Rorer Award of the Phytochemical Society of Europe. He is a member of the editorial boards of Phytochemical Analysis, Phytochemistry Letters, Pharmaceutical Biology and is referee for over 20 journals in the natural product field. From 1996 to 2000, he was a member of the committee of the Phytochemical Society of Europe and he is currently a committee member of the "Fondation Gentiana" in Switzerland, a scientific advisor to the International

Foundation for Science and a member of the Countercurrent Chromatography International Advisory Board. From 1986 to 2008, Andrew Marston has co-organised 26 congresses, workshops and symposia, held all over the world.

Areas of Expertise

- Natural Product Chemistry
- Isolation Techniques of Natural Products
- Analytical and Preparative Chromatography Techniques
- Organic Structure Elucidation

Current Research Interests

- Bioactivity-guided isolation of natural products
- Centrifugal countercurrent chromatography
- Bioassays
- Tropical parasitic diseases
- Saponin-containing plants
- Fungicidal compounds from plants

Teaching

- Courses to pharmacy and chemistry students at undergraduate and postgraduate levels: different aspects of natural products, organic chemistry and analytical chemistry
- Supervision of PhD and Masters students
- Training of scientists from institutions inside and outside South Africa

Publications (recent)

Publications in international peer-reviewed journals:

Bruhlmann, C., Marston, A., Hostettmann, K., Carrupt, P.-A. and Testa, B. (2004). Screening of non-alkaloidal natural compounds as acetylcholinesterase inhibitors. *Chemistry and Biodiversity* 1, 819-829.

Urbain, A., Marston, A., Queiroz, E.F., Ndjoko, K. and Hostettmann, K. (2004). Xanthones from *Gentiana campestris* as new acetylcholinesterase inhibitors. *Planta Medica* 70, 1011-1014.

Hostettmann, K., Marston, A. and Wolfender, J.-L. (2005). Strategy in the search for new lead compounds and drugs from plants. *Chimia* 59, 291-294.

Urbain, A., Marston, A. and Hostettmann, K. (2005). Coumarins from *Peucedanum ostruthium* as inhibitors of acetylcholinesterase. *Pharmaceutical Biology* 43, 647-650.

Kissling, J., Ioset, J.-R., Marston, A. and Hostettmann, K. (2005). Bio-guided isolation of cholinesterase inhibitors from the bulbs of *Crinum x powellii*. *Phytotherapy Research* 19, 984-987.

B. Zanolari, D. Guilet, A. Marston, E.F. Queiroz, M.Q. Paulo and K. Hostettmann (2005). *J. Nat. Prod.* 68, 1153-1158.

Martin, A.M., Queiroz, E.F., Marston, A. and Hostettmann, K. (2006). Labdane diterpenes from *Juniperus communis* L. berries. *Phytochemical Analysis* 17, 32-35.

Ruegg, T., Calderon, A.I., Queiroz, E.F., Solis, P.N., Marston, A., Rivas, F., Ortega-Barria, E., Hostettmann, K. and Gupta, M.P. (2006). 3-Farnesyl-2-hydroxybenzoic acid is a new anti-*Helicobacter pylori* compound from *Piper multiplinervium*. *Journal of Ethnopharmacology* 103, 461-467.

Marston, A. and Hostettmann, K. (2006). Developments in the application of counter-current chromatography to plant analysis. *Journal of Chromatography A* 1112, 181-194.

Marston, A., Cabo, M., Lubrano, C., Robin, J.-R., Fromageot, C. and Hostettmann, K. (2006). Clarification of the saponin composition of *Ranunculus ficaria* tubers. *Natural Product Communications* 1, 27-32.

Cavin, A.-L., Hay, A.-E., Marston, A., Stoeckli-Evans, H., Scopellitti, R., Diallo, D. and Hostettmann, K. (2006). Bioactive diterpenes from the fruits of *Detarium microcarpum*. *Journal of Natural Products* 69, 768-773.

Hostettmann, K., Borloz, A., Urbain, A. and Marston, A. (2006). Natural product inhibitors of acetylcholinesterase. *Current Organic Chemistry* 10, 825-847.

Borloz, A., Marston, A. and Hostettmann, K. (2006). The determination of huperzine A in European Lycopodiaceae species by HPLC-UV-MS. *Phytochemical Analysis* 17, 332-336.

Simoes-Pires, C.A., Farias, F.M., Marston, A., Queiroz, E.F., Chavez, C.G., Henriques, A.T. and Hostettmann, K. (2006). Indole monoterpenes with antichemotactic activity from *Psychotria myriantha*: chemotaxonomic significance. *Natural Product Communications* 1, 1101-1106.

Hostettmann, K. and Marston, A. (2007). The search for new drugs from higher plants. *Chimia* 61, 322-326.

Hostettmann, K. and Marston, A. (2007).

Plantes as a still unexpected source of new drugs. *Natural Product Communications* 3, 1307-1315.

Hostettmann, K. and Marston, A. (2007). Separation of natural products: centrifugal countercurrent chromatography as a versatile technique. *G.I.T. Laboratory Journal* 7-8, pp. 34-36.

Marston, A. (2007). Role of advances in chromatographic techniques in phytochemistry. *Phytochemistry* 68, 2786-2798.

Di Giovanni, S., Borloz, A., Urbain, A., Marston, A., Hostettmann, K., Carrupt, P.-A. and Reist, M. (2008). *In vitro* screening assays to identify natural or synthetic acetylcholinesterase inhibitors: thin layer chromatography versus microplate methods. *European Journal of Pharmaceutical Sciences* 33, 109-119.

Khwanchuea, R., Queiroz, E.F., Marston, A., Jansakul, C. and Hostettmann, K. (2008). Saponins from fresh fruits of *Randia siamensis* (Lour) Roem. & Schult. (Rubiaceae). *Natural Product Communications* 3, 163-170.

Marston, A. and Hostettmann, K. (2008). Modern countercurrent chromatography. *LC-GC Europe* 21, 218-222.

Urbain, A., Marston, A., Sintra Grilo, L., Bravo, J., Purev, O., Purevsuren, B., Batsuren, D., Reist, M., Carrupt, P.-A. and Hostettmann, K. (2008). Xanthones from *Gentiana amarella* ssp. *acuta* with acetylcholinesterase and monoamine oxidase inhibitory activities. *Journal of Natural Products* 71, 895-897.

Hostettmann, K. and Marston, A. (2008). Plants as a still unexploited source of new drugs. *Natural Product Communications* 3, 1307-1315.

Fan, P., Hay, A.-E., Marston, A. and Hostettmann, K. (2008). Acetylcholinesterase-inhibitory activity of linarin from *Buddleja davidii*, structure-activity relationships of related flavonoids, and chemical investigation of *Buddleja nitida*. *Pharmaceutical Biology* 46, 596-601.

Urbain, A., Marston, A., Batsuren, D., Purev, O. and Hostettmann, K. (2008). Preparative isolation of closely-related xanthones from *Gentianella amarella* ssp. *acuta* by high-speed countercurrent chromatography. (2008) *Phytochemical Analysis* 19, 514-519.

Lectures presented at international symposia (recent)

Marston, A. and Hostettmann, K. The potential of African plants as a source of new drugs for the treatment of killer diseases. Africa Genome Initiative, Nairobi, Kenya, 21-24 March 2005.

Marston, A. Centrifugal CCC in the separation of natural products. International Symposium on Natural Products and Medicinal Chemistry, Kuala Lumpur, Malaysia, 3-6 August 2005.

Marston, A. and Hostettmann, K. Plantes médicinales et phytomédecine, Symposium international sur les plantes médicinales et officinales, Interreg IIIA, Aoste, Italy, 31 March-1 April 2006.

Marston, A. and Hostettmann, K. Dynamic extraction technology as a tool in the discovery of new drugs of natural origin. Specialist Research Institute Launch, Brunel Institute for Bioengineering, Brunel University, London, U.K., 25 April 2006.

Marston, A. and Hostettmann, K. Strategies for the discovery of new plant-derived kinase inhibitors. 18th Helsinki Drug Research Meeting, Helsinki (Finland), 1-2 June 2006.

Marston, A. and Hostettmann, K. Strategies for the rapid isolation and identification of bioactive constituents. IOCD International Symposium on the Biology, Chemistry, Pharmacology and Clinical Studies of Asian Plants, Surabaya (Indonesia), 9-11 April 2007.

Marston, A. The role of advances in chromatographic techniques in phytochemistry. PSE 50th Anniversary Meeting, Cambridge (U.K.), 11-14 April 2007.

Marston, A. and Hostettmann, K. The potential of Alpine plants as a source of new drugs. The First Collaborative Meeting on Phytomedicine, Monte Verita, Ascona (Switzerland), 11-13 May 2007.

Marston, A. Centrifugal countercurrent chromatography as an efficient tool for the isolation of natural products. First International Joint IOCD-ISDNP Symposium "Natural products : unlimited resources for the development of drugs, cosmetics and food", Kasane (Botswana), 25-29 February 2008.

Marston, A. Centrifugal countercurrent chromatography as an alternative to semi-preparative HPLC in the separation of natural products. 6th International Symposium on Chromatography of Natural Products, Lublin (Poland), 15-18 June **2008**.
