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### **Analysis and biochemical characterization of degradation products of anti-Alzheimer's drugs**

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# Appendices



## List of publications

Marques LA, Kool J, de Kanter F, Lingeman H, Niessen WMA and Irth H. Production and on-line acetylcholinesterase bioactivity profiling of chemical and biological degradation products of tacrine. *Journal of Pharmaceutical and Biomedical Analysis* 2010; 53: 609-616.

Marques LA\*, Giera M\*, de Kanter FJJ, Niessen WMA, Lingeman H and Irth H. Photohuperzine A-A new photoisomer of huperzine A: Structure elucidation, formation kinetics and activity assessment. *Journal of Pharmaceutical and Biomedical Analysis* 2010; 52: 190-194.

Marques LA, Giera M, Lingeman H and Niessen WMA. Analysis of acetylcholinesterases inhibitors: bioanalysis, degradation and metabolism. *Biomedical Chromatography* 2011; 25: 278-299.

Marques LA, Maada I, de Kanter FJJ, Lingeman H, Irth H, Niessen WMA and Giera M. Stability - indicating study of the anti-Alzheimer's drug galantamine hydrobromide. *Journal of Pharmaceutical and Biomedical Analysis* accepted.

### Not in this thesis

Catharino RR, Marques LA, Santos LS, Baptista AS, Gloria EM, Calori-Domingues MA, Facco EMP and Eberlin MN. Aflatoxin screening by MALDI-TOF mass spectrometry. *Analytical Chemistry* 2005; 77: 8155-8157.

Marques LA, Catharino RR, Bruns RE and Eberlin MN. Electrospray ionization mass spectrometry fingerprinting of perfumes: rapid classification and counterfeit detection. *Rapid Communication in Mass Spectrometry* 2006; 20: 3654-3658.

Haddad R, Catharino RR, Marques LA and Eberlin MN. Perfume fingerprinting by easy ambient sonic - spray ionization mass spectrometry: nearly instantaneous typification and counterfeit detection. *Rapid Communication in Mass Spectrometry* 2008; 22: 3662- 3666.

Riccio MF, Saraiva SA, Marques LA, Alberici R, Haddad R, Moller JC, Eberlin MN and Catharino RR. Easy mass spectrometry for metabolomics and quality control of vegetable and animal fats. *European Journal of Lipid Science and Technology* 2010; 112: 434-438.

Souza AL, Marques LA, Eberlin MN, Nascente PAP, Leite FL, Hermman PSP, and Rodrigues-Filho UP. Self assembled hybrid films of phosphotungstic acid and aminoalkoxysilanes on SiO<sub>2</sub>/Si surfaces. *Journal of Colloids and Interface Sciences*. submitted.

\* Authors contributed equally for this work.

## Curriculum Vitae

Lygia de Azevedo Marques was born in São Paulo, Brazil on the 4th December 1981. In 1999 she graduated from Bandeirantes School in São Paulo, Brazil. In 2000 she started studying chemistry at the State University of “Júlio de Mesquita Filho” – UNESP in Araraquara, São Paulo, Brazil. She did her internship in the department of physical chemistry in the area of statistics under supervision of Prof. Dr. Romeu Magnani from 2002 until 2003. During her graduation she did two internships: at Firmenich for 7 months and at the Institute of Technological Research (IPT) for 3 months. In both institutions she worked with GC-MS, in the first analysing fragrances and in the second analysing fuels. In 2004 she started her master at the State University of Campinas under supervision of Prof. Dr. Marcos Eberlin. There she worked with several ionization techniques (MALDI, EASI, EASY) applied in a variety of samples (e.g. mycotoxins, fragrances, polymers). In 2006 she got a scholarship from Alban, a European Union high level scholarship program, to do her PhD at the department of BioMolecular Analysis at the VU University Amsterdam, The Netherlands, under supervision of Dr. Martin Giera, Dr. Henk Lingeman, Prof. Dr. Wilfried Niessen and Prof. Dr. Hubertus Irth. The results of this PhD research are presented in this book that you have at this very moment in your hands.

## List of abbreviations

<b>AChE</b>	acetylcholinesterase
<b>ACN</b>	acetonitrile
<b>AD</b>	Alzheimer's disease
<b>APCI</b>	atmospheric-pressure chemical ionization
<b>BSA</b>	bovine serum albumin
<b>BTHA</b>	N-butylamide-tacrine
<b>CE</b>	capillary electrophoresis
<b>CE-LIF</b>	capillary electrophoresis–laser-induced fluorescence
<b>CNS</b>	central nervous system
<b>CSF</b>	cerebrospinal fluid
<b>DHB</b>	2,5-dihydroxy benzoic acid
<b>ECD</b>	electrochemical detection
<b>EI</b>	electron impact
<b>ESI-MS</b>	electrospray ionization–mass spectrometry
<b>EASY</b>	Easy ambient sonic spray ionization
<b>FASS</b>	field-amplified sampling stacking
<b>FDA</b>	food and drug administration
<b>GI</b>	gastrointestinal tract
<b>ICH</b>	International Conference on Harmonisation
<b>MALDI-TOF</b>	matrix-assisted laser desorption/ionization–time-of-flight
<b>MEKC</b>	micellar electrokinetic chromatography
<b>n.d.</b>	not determined
<b>OVM</b>	ovomucoid
<b>PDA</b>	photodiode array
<b>PNS</b>	peripheral nervous system
<b>RBITC</b>	rhodamine B isothiocyanate
<b>RH</b>	relative humidity
<b>SOS</b>	sodium octylsulphonate
<b>SPME</b>	solid phase micro extraction
<b>SRM</b>	selected reaction monitoring
<b>TCA</b>	trichloroacetic acid
<b>TFA</b>	trifluoroacetic acid
<b>TSP</b>	thermospray

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I am very grateful to Dr. Henk Lingeman for all the support and for the many advices in chromatography. Without your advices probably I would be still struggling.

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I would like to express my gratitude to the European Union high level scholarship program (Alban), which was my sponsor for three years of my PhD research and also the staff in particular to Ana Fonseca and Rita Miranda, who helped me with a lot of bureaucracy papers during my period as an "Albanista".

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*Lygia*