

# Helen Archontaki

Assistant Professor of Analytical Chemistry

## Education

B.Sc. in Chemistry, [University of Athens](#) (1982)

Ph.D. in Chemistry (Analytical Chemistry), [Michigan State University](#), (1987)

Post Doctoral research at the [University of Athens](#), (1988)

## Research Field of Interest

1. Quantitative Proteomics with multidimensional liquid chromatography and hybrid mass spectrometry
2. Pharmaceutical analysis
3. Determination of drugs and metabolites in biological fluids
4. Quality control of cosmetic products
5. High performance liquid chromatography (including column coupling and non-aqueous reversed-phase liquid chromatography)
6. Chemical stability of drugs
7. Effect of cyclodextrins on drug solubility
8. Derivative spectrometry

## Teaching

### Undergraduate:

Qualitative and Quantitative Analysis, Instrumental Analysis

### Graduate:

Separation Techniques, High performance liquid chromatography

## Selected Papers

1. **H.A. Archontaki** and S.R. Crouch: "Evaluation of an Isolated Droplet Sample Introduction System for Laser-Induced Breakdown Spectroscopy", *Applied Spectroscopy* **42**, 741 (1988).
2. **Helen A. Archontaki**, Michael A. Koupparis and Constantinos E. Efstathiou: "Semi-Automated Kinetic Determination of Phenolic Compounds using a Fluoride-Selective Electrode and Based on their Micellar-Catalyzed Reaction with 1-Fluoro-2,4-Dinitrobenzene", *Analyst* **114**, 591 (1989).
3. **H.A. Archontaki**: "Kinetic Study on the Degradation of Indomethacin in Alkaline Aqueous Solutions by Derivative Ultraviolet Spectroscopy", *Analyst* **120**, 2627 (1995).
4. I. Panderi, **H. Archontaki**, E Gikas, M. Parissi-Poulou: "Acidic Hydrolysis of Bromazepam studied by High Performance Liquid Chromatography. Isolation of its Degradation Products", *J. Pharm. Biomed. Anal.* **17**, 327, (1998).
5. I.E. Panderi, **H.A. Archontaki**, E.E. Gikas, M. Parissi-Poulou: "Kinetic Investigation on the Degradation of Lorazepam in Acidic Aqueous Solutions by High Performance Liquid Chromatography", *J. Liq. Chrom. & Rel. Technol.* **21**, 1783 (1998).
6. **H.A. Archontaki**, I.E. Panderi, E.E. Gikas, M. Parissi-Poulou: "Kinetic Study on the Degradation of Prazepam in Acidic Aqueous Solutions by High Performance Liquid Chromatography and Fourth-Order Derivative Ultraviolet Spectroscopy", *J. Pharm. Biomed. Anal.* **17**, 739 (1998).
7. **H.A. Archontaki**, E.E. Gikas, I.E. Panderi, P.M. Ovezikoglou: "Kinetics and Mechanism of Acidic Hydrolysis of Nordazepam Studied by High Performance Liquid Chromatography and Fourth-Order Derivative Ultraviolet Spectroscopy", *Int. J. Pharm.* **167**, 69 (1998).
8. **H.A. Archontaki**, K. Atamian, I.E. Panderi, E.E. Gikas: "Kinetic Study on the Acidic Hydrolysis of Lorazepam by a Zero-Crossing First-Order Derivative UV Spectrophotometric

Technique", *Talanta* **48**, 685 (1999).

**9. H.A. Archontaki**, M.V. Vertzoni and M.H. Athanassiou-Malaki: "Study on the Inclusion Complexes of Bromazepam with  $\beta$ - and  $\beta$ -hydroxypropyl-cyclodextrins", *J. Pharm. Biomed. Anal.* **28**, 761 (2002).

**10. S.C. Marselos and H.A. Archontaki**: "Development and Validation of a Reversed-Phase HPLC Method for the Determination of Ethyl-3-(N-n-butyl-N-acetyl) aminopropionate in an Insect Repellent Semi-Solid Formulation" *J. Chromatogr. A* **946**, 295 (2002).

**11. S.C. Marselos and H.A. Archontaki**: "Development and Optimization of a Reversed-Phase High-Performance Liquid Chromatographic Method for the Determination of Piperacillin and Tazobactam in Tazocin Injectable Powder" *J. Pharm. Biomed. Anal.* **29**, 787 (2002).

**12. M.V. Vertzoni, H.A. Archontaki, P. Galanopoulou**: "Development and optimization of a reversed-phase high-performance liquid chromatographic method for the determination of acetaminophen and its major metabolites in rabbit plasma and urine after a toxic dose" *J. Pharm. Biomed. Anal.* **32**, 487 (2003).

**13. C.G. Smyrniotakis, H.A. Archontaki**: "Development and validation of a non-aqueous reversed-phase high-performance liquid chromatographic method for the determination of four chemical UV filters in sun care formulations" *J. Chromatogr. A*, **1031**, 319 (2004).

**14. M.V. Vertzoni, C. Reppas, H.A. Archontaki**: "Optimized determination of lycopene in canine plasma using reversed-phase high-performance liquid chromatography" *J. Chromatogr. B*, **819** 149 (2005).

**15. Maria Vertzoni, Theodora Kartezini, C. Reppas, H.A. Archontaki, Georgia Valsami**: "Solubilization and quantification of lycopene in aqueous media in the form of cyclodextrin binary systems", *Int. J. Pharm.* **309** 115 (2006).

**16. M.V. Vertzoni, C. Reppas, H.A. Archontaki**: "Optimization and validation of a high performance liquid chromatographic method with UV detection for the determination of ketoconazole in canine plasma", *J. Chromatogr. B*, **839** 62 (2006).

**17. M.V. Vertzoni, C. Reppas, H.A. Archontaki**: "Sensitive and simple liquid chromatographic method with ultraviolet detection for the determination of nifedipine in canine plasma", *Anal. Chim. Acta*, 573 - 574 298 (2006).

**18. C. G. Smyrniotakis, H. A. Archontaki**: " $C_{18}$  columns for the simultaneous determination of oxytetracycline and its related substances by reversed-phase high performance liquid chromatography and UV detection", *J. Pharm. Biomed. Anal.*, **43**, 506 (2007).

**19. C. G. Smyrniotakis, H. A. Archontaki**: "Estimation of chromatographic parameters on two silica-based columns connected in series under nonaqueous reversed phase liquid chromatographic conditions", *J. Sep. Sci.*, **31**, 86 (2008).

**20. S. Gikas, F. Tsopelas, C. Giaginis, J. Dimitrakopoulos, T. Livadara, H. A. Archontaki, A. Tsantili-Kakoulidou**: "Chromatographic behavior of zwitterionic enalapril-Exploring the conditions for lipophilicity assessment", *J. Pharm. Biomed. Anal.*, **48**, 739 (2008).

**21. C. Alexanian, H. Papademou, M. V. Vertzoni, H. A. Archontaki, G. Valsami**: "Effect of pH and water-soluble polymers on the aqueous solubility of nimesulide in the absence and presence of  $\beta$ -cyclodextrin derivatives", *J. Pharm. Pharmacol.*, **60**, 1433 (2008).

**22. M. V. Vertzoni, H. A. Archontaki, C. Reppas**: "Determination of intraluminal individual bile acids by HPLC with charged aerosol detection", *J. Lipid Res.*, **49**, 2690 (2008).

**23. S. Maragos, H. Archontaki, P. Macheras and G. Valsami**: "Effect cyclodextrin complexation on the aqueous solubility and solubility/dose ratio of praziquantel", *AAPS PharmSciTech.*, **10**, 1444 (2009).

**24. K. M. Zorpas, G. N. Valsami, E. V. Vryonis, A. T. Skoutelis, H. A. Archontaki**: "Robust and sensitive liquid chromatographic/UV detection technique for the determination of tigecycline in rabbit plasma", *J. AOAC Int.*, in press.

**25. K. Margetis, E. Dimaraki, G. Charkoftaki, E. Vryonis, S. Markantonis, N. Boutos, H. Archontaki, D. E. Sakas, G. Valsami, A. Skoutelis**: "Penetration of Intact Blood-Brain Barrier by Doripenem", *Antimicrobial Agents and Chemotherapy (AAC)*, accepted for publication.

26. G. Papandreou, K. Zorpas, H. Archontaki: "Development and Validation of a liquid chromatographic method for the simultaneous determination of aniracetam and its related substances in the bulk drug and a tablet formulation", J. Pharm. Biomed. Anal., submitted.

**Contact**

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