

# Chemical Analysis of Clinically Interesting Molecules



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## Education and Expertise

- B.A. Chemistry, Northwestern University, Evanston, IL
- Ph.D. Biological Chemistry, University of Illinois -Medical Center, IL
- Postdoc. Biophysics, Marianne Schiffer, Argonne National Labs, IL
- M.B.A., Leadership, New York Inst. Technology, Old Westbury, NY

- Analytical Measurements of Molecules of Clinical Significance
- FTIR, ICP, X-Ray Diffraction, HPLC, GC, HPLC-MS,

## Publications and Presentations: \*undergraduate

- Cox, R.A., McFarland, K.N., Holt Sackett, P., and Short, M.T., Correlation of Urokinase Activity from Biopotency and High-Performance Liquid Chromatographic Assays, *J. Chromatog.*, v. 370, 495, (1986)
- Moeller, M., Seymour, M., and Short, M., Analysis of Heavy Metals in Bulk Drug Substance Using Microwave Digestion-Inductively Coupled Plasma (ICP) Emission Spectroscopy, *Abst. Pittcon '97*, 899, (1997).
- Tapler, P., Vogt, C., Travis, P. and Short, M., USP Monograph - Gabapentin, USP 29, (2007)
- Short, M., Short, A., Vankempen, R., and Burnatowska-Hledin, M., Using HPLC-Mass Spectrometry to Teach proteomics Concepts with Problem-Based Techniques, *in preparation* for Biochemistry and Molecular Biology Education

## Research Interests

My work involves the use of chemical/biochemical measurement techniques to provide useful information regarding quantity, purity, structure, mechanism, and/or function about the target molecules. Like a carpenter, I am trained to use many tools. I am interested in chemicals that have significance in the health sciences. My specialty is protein structure and function, however, I have worked many years in the pharmaceutical industry where I have used analytical techniques to study fine chemicals, pharmaceutical intermediates, impurities, and pharmaceutical active ingredients.

Currently, I am collaborating with Dr. Maria Hledin to analyze the E3 ubiquitin ligase complex which contains VACM-1, a protein of the cullin superfamily. Using two-dimensional electrophoresis, we intend to examine the structural nature of the E3 ubiquitin ligase complex at various phases of the cell cycle. In addition, I have worked to develop a problem-based laboratory exercise to teach proteomics concepts in the Chemistry 315 course.

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are needed to see this picture.