

JIANZHONG CHEN

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EDUCATION

- Ph. D. (December 2003) in Analytical Chemistry, University of Nebraska-Lincoln
Dissertation: "Chromatographic Studies of Drug-Protein Interactions"
Advisor: Professor David Hage
- B. S. (July 1993) in Analytical Chemistry, University of Science & Technology of China, Hefei, Anhui, China

RESEARCH EXPERIENCE

12/2007-present Chemist, Henry M. Jackson Foundation for the Advancement of Military Medicine

Visiting Scientist, Campus Chemical Instrument Center, Ohio State University

- Identified molecular components of various types of lipids including wax esters, cholesteryl esters, triacylglycerols, diesters, free fatty acids and fatty acidic wax esters.
- Found differentially expressed proteins in rat urine samples for α -Naphthylisothiocyanate induced toxicity with 2D-Differential Gel Electrophoresis (DIGE) analysis

10/2006-12/2007 Research Associate, Washington State University, with Professor James Bruce

- Explored biomarkers in human serum samples for the diagnosis of ischemia using various types of mass spectrometers with bottom-up and top-down approaches
- Identified modifications of cysteine 34 amino acid on albumin in human serum samples
- Quantitated peptides in serum with Triple-quadrupole mass spectrometer

9/2004-9/2006 Postdoctoral Fellow, University of Michigan-Ann Arbor, with Professor David Lubman and Professor Diane Simeone

- Performed 2D-HPLC separation (chromatofocusing followed by nonporous RPLC) of proteins in serum samples with PF2D
- Quantified differentially expressed proteins between cancer and non-cancer serum samples with LC-ESI-TOF
- Identified differentially expressed proteins by MS and MS/MS of tryptic digested peptides with MALDI-QIT-TOF, MALDI-TOF and LC-ESI-Ion trap
- Confirmed the identification of proteins by combining intact protein molecular weights, MS and MS/MS database search including for specific peptides

7/2000-8/2004 Research Assistant, University of Nebraska-Lincoln, with Professor David Hage

- Investigated the interactions between phenytoin and other drugs with human serum albumin
- Designed a new approach to determine solution phase binding constants for drugs with cyclodextrins by High Performance Affinity Chromatography (HPAC)
- Discovered a novel method for quantitative studies of allosteric solute-ligand interactions by HPAC
- Performed purifications and separations of antibodies, proteins, drugs, etc.

TEACHING EXPERIENCE

7/1998-6/2000 Teaching Assistant, University of Nebraska-Lincoln

- Assisted in the Undergraduate Instrument Center with instruments such as GC, NMR, IR, HPLC, UV and AA

9/1996-6/1998 Teaching Assistant, University of Science & Technology of China

- Did recitation for the course of Analytical Chemistry

HONORS AND AWARDS

- Outstanding Graduate Research Assistant Award, Department of Chemistry, University of Nebraska-Lincoln, 2003
- Kwang-hua Scholarship, University of Science & Technology of China, 1997

AFFILIATION

- American Society for Mass Spectrometry

PUBLICATIONS

1. JZ Chen, JE Schiel, DS Hage, "Noncompetitive Peak Decay Analysis of Drug-Protein Dissociation by High-Performance Affinity Chromatography", J. Sep. Sci, 2009, 32 (10), 1632-1641.
2. JZ Chen, M Anderson, DE Misek, DM Simeone, DM Lubman, "Characterization of Apolipoprotein and Apolipoprotein Precursors in Pancreatic Cancer Serum Samples via Two-dimensional Liquid Chromatography and Mass Spectrometry", J. Chromatogr. A., 2007, 1162(2), 117-125.

3. JZ Chen, DS Hage, "Quantitative Studies of Allosteric Nonpolar Solute-Ligand Interactions by High-Performance Affinity Chromatography with a Solubilizing Agent", *Anal. Chem.*, 2006, 78(8), 2672-2683.
4. JZ Chen, I Fitos, DS Hage, "Chromatographic Analysis of Allosteric Effects between Ibuprofen and Benzodiazepines on Human Serum Albumin", *Chirality*, 2006, 18(1), 24-36.
5. JZ Chen, DS Hage, "Quantitative Studies of Allosteric Drug-Protein Binding by Biointeraction Chromatography", *Nat. Biotech.*, 2004, 22 (11), 1445-1448.
6. JZ Chen, C Ohnmacht, DS Hage, "Studies of Phenytoin Binding to Human Serum Albumin by High Performance Affinity Chromatography", *J. Chromatogr. B.*, 2004, 809 (1), 137-145.
7. DS Hage, JZ Chen "Quantitative Affinity Chromatography: Practical Applications ", In: *Handbook of Affinity Chromatography*, D.S. Hage, ed., CRC Press, Boca Raton, FL, July, 2005.
8. JZ Chen, C Ohnmacht, DS Hage, "Characterization of Drug Binding to Soluble beta-Cyclodextrin Using Immobilized Human Serum Albumin Columns", *J. Chromatogr. A.*, 2004, 1033 (1), 115-126.

RECENT PRESENTATIONS

1. JZ Chen, RL Pitsch, NJ DelRaso, KB Green-Church, JJ Schlager, P Shiyonov, "Exploring Biomarkers in Rat Urine for α -Naphthylisothiocyanate Induced Toxicity", 57th ASMS Conference on Mass Spectrometry, June, 2009, Philadelphia, PA
2. KB Green-Church, JZ Chen, KK Nichols, "Identification of Individual Lipid Components in Human Meibomian Gland Secretions with High Resolution Mass Spectrometry", ARVO 2009 Annual Meeting, May, 2009, Fort Lauderdale, FL
3. JZ Chen, KB Green-Church, KK Nichols, "Identification of Components of Major Lipid Classes in Human Meibomian Gland Secretions with Electrospray Ionization Mass Spectrometry Analysis", Sanibel Conference on Mass Spectrometry, Jan., 2009, St. Petersburg, FL
4. JZ Chen, NK Kaiser, Y Carella, H Huff, JE Bruce, "Top-Down Analysis of Modifications on Cysteine 34 of Albumin in Human Serum Samples" (Oral), 56th ASMS Conference on Mass Spectrometry, June, 2008, Denver, CO
5. JZ Chen, GR Munske, XT Tang, NK Kaiser, Y Carella, H Huff, JE Bruce, "Identification of Cysteine 34 Amino Acid Modifications on Albumin in Human Serum Samples", 55th ASMS Conference on Mass Spectrometry, June, 2007, Indianapolis, IN
6. JZ Chen, DS Hage, "Quantitative Analysis of Allosteric Effects in Biological Systems: A New Approach Based on High-Performance Affinity", 30th International Symposium on High Performance Liquid Phase Separations and Related Techniques, June, 2006, San Francisco, CA
7. JZ Chen, DM Simeone, DM Lubman, "Serum Protein Profiling for Detection of Pancreatic Cancer", 54th ASMS Conference on Mass Spectrometry, May, 2006, Seattle, WA
8. JZ Chen, DM Simeone, DM Lubman, "Exploring Serum Biomarkers for Pancreatic Cancer by Prefractionation, 2D-LC Separation and Mass Spectrometry Identification", 53rd ASMS Conference on Mass Spectrometry, June, 2005, San Antonio, TX
9. DS Hage, JZ Chen, "Quantitative Studies of Allosteric Drug-Protein Interactions by High Performance Affinity Chromatography: Development and Evaluation of a New Universal Model", 28th International Symposium on High Performance Liquid Phase Separations and Related Techniques, June, 2004, Philadelphia, PA