
CURRICULUM VITAE
GREGORY PHILIP TOCHTROP

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Born: July 4, 1974 in St. Louis, MO

EDUCATION

8/96–5/02: Washington University Medical School, St. Louis, MO, Ph.D. Bioorganic Chemistry
8/92–5/96: University of Missouri, Columbia, MO, B.S. Biochemistry (Honors)

RESEARCH INTERESTS

Chemical biology, steroids, molecular recognition, NMR, diversity oriented synthesis, chemical technology development

EXPERIENCE

7/06 – Present **Assistant Professor:** *Case Western Reserve University, Department of Chemistry & Department of Pharmacology.* My research program uses an interdisciplinary approach to explore the chemistry and biology of steroids. A central goal of this research is to answer fundamental aspects of site-selectivity and site-specificity of protein–steroid binding interactions

6/02 – 6/06 **Postdoctoral Research:** *Harvard University & The Broad Institute, Department of Chemistry and Chemical Biology* In the laboratories of Dr. Stuart Schreiber and Dr. Randall King I used diversity oriented synthesis (DOS) to synthesize natural product-like small molecule libraries to be used in chemical genetic studies.

12/04 – 5/06 **Instructor:** *Harvard University*

I taught the traditional sophomore organic chemistry course at Harvard's extension school. I served in the role of coursemaster, organizing and administrating 14 teaching assistants in addition to lecture responsibilities for a class of 200 students.

8/96 – 5/02 **Ph.D. Graduate Research:** *Washington University, St. Louis, MO. Department of Biochemistry & Molecular Biophysics & Department of Molecular Biology and Pharmacology.* I successfully executed a joint project in the laboratories of Dr. David Cistola and Dr. Douglas Covey in which the structural, dynamic, and thermodynamic aspects of bile acid binding to human bile acid binding protein were illuminated using an NMR-based experimental strategy relying on synthetically isotopically enriched bile acids.

DISTINCTIONS

2007 Reuter Foundation Award
2003–2006 Ruth L. Kirschstein National Research Service Award (NIH-NIGMS) Postdoctoral Fellow
2002 Ceil Degutis Award for Outstanding Achievement in Bioorganic Chemistry
2001 Appointed to the Chemistry Biology Interface Pathway (NIH Training Grant)
1999–2001 Gerti T. Cori Sigma Chemical Company Predoctoral Fellow
1996 Biochemistry Department Honors Scholar (University of Missouri, Columbia)
1995 USDA Plant Genetics Fellow (One of five nationwide)

PUBLICATIONS

- (1) Gregory P. Tochtrop "Using the Gasoline Octane Rating to Teach Organic Radical Stability", *Journal of Chemical Education* (in press)
 - (2) Orsolya Toke, John D. Monsey, Gregory T. DeKoster, **Gregory P. Tochtrop**, Changguo Tang, and David P. Cistola "Determinants of Cooperativity and Site Selectivity in Human Ileal Bile Acid Binding Protein", *Biochemistry* **45**, 727-737 (2006)
 - (3) Lynette Cegelski, Charles V. Rice, Robert D. O'Connor, Amy L. Caruano, **Gregory P. Tochtrop**, Zu Yun Cai, Douglas F. Covey and Jacob Schaefer "Mapping the Locations of Estradiol and Potent Neuroprotective Analogues in Phospholipid Bilayers by REDOR NMR" *Drug Development Research* **66**, 93-102 (2006)
 - (4) Rati Verma, Noel R. Peters, Mariapina D'Onofrio, **Gregory P. Tochtrop**, Kathleen M. Sakamoto, Ranjani Varadan, David Fushman, Raymond J. Deshaies, and Randall W. King "Inhibition of Proteasome-Dependent Degradation by a Small Molecule that Binds the Ubiquitin Chain", *Science* **306**, 117-120 (2004)
Featured in David S. Bellows and Mike Tyers "Chemical Genetics Hits Reality", *Science* **306**, 67-68 (2004) & *Chemical and Engineering News Concentrates* **82**, 31 (October 4th 2004)
 - (5) **Gregory P. Tochtrop**, Gregory T. Dekoster, Douglas F. Covey, and David P. Cistola "Ligand Site Specificity in Human Ileal Bile Acid Binding Protein" *Journal of the American Chemical Society* **126**, 11024-11029 (2004)
 - (6) **Gregory P. Tochtrop** and Randall W. King "Target Identification Strategies in Chemical Genetics" *Journal of Combinatorial Chemistry and High Throughput Screening* **7**, 677-689 (2004)
 - (7) **Gregory P. Tochtrop**, Jamie L. Bruns, Changguo Tang, Douglas F. Covey, and David P. Cistola "Calorimetric Analysis of Bile Salt Binding to Human Ileal Bile Acid Binding Protein" *Biochemistry* **42**, 11561-11567 (2003)
 - (8) **Gregory P. Tochtrop**, Gregory T. DeKoster, David P. Cistola, and Douglas F. Covey "Synthesis of [3,4-¹³C₂]-Enriched Bile Salts As NMR Probes of Protein-Ligand Interactions" *Journal of Organic Chemistry* **67**, 6764-6771 (2002)
 - (9) **Gregory P. Tochtrop**, Klaus Richter, Changguo Tang, James J. Toner, Douglas F. Covey, and David P. Cistola, "Energetics by NMR: Site-Specific Binding in a Positively Cooperative System," *Proceedings of the National Academy of Sciences of the United States of America* (Track II) **99**, 1847-1852 (2002)
 - (10) **Gregory P. Tochtrop**, Gregory T. DeKoster, David P. Cistola, and Douglas F. Covey, "A Simple Efficient Synthesis of [23,24]-¹³C₂-Labelled Bile Salts as NMR Probes of Protein Ligand Interactions" *Bioorganic and Medicinal Chemistry Letters* **12**, 433-434 (2002)
 - (11) George W. Gokel, E. A., Stephen L. DeWall, John P. Evans, Takashi Jin, Glenn E.M. Maguire, Eric S. Meadows, Oscar Murillo, Akio Nakano, Mayur R. Shaw, Iwao Suzuki, **Gregory P. Tochtrop**, and Shigeru Watanabe, "Tris(Macrocycles) As Models For Transmembrane, Cation-Conducting Channels," In *Molecular Recognition and Inclusion*; Coleman, A. W., Ed.; Kluwer Academic Publishers: Amsterdam, 1998, p 19-29
 - (12) C.A. Roberts, A. L. Karr, P.R. Beuselinck, **Gregory P. Tochtrop**, S.M. Marek, "New Chitinase Methods to Measure Activity and Detect Isozymes," In *Chitin Enzymology*; Muzzarelli, R. A. A., Ed. Sengallia, Italy, 1996
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INVITED TALKS AND ABSTRACTS

- (1) **Gregory P. Tochtrop**, Julie M. Hall, Randall W. King, “Chemical Genetic Studies of Cyclin Degradation”, The 43rd Annual Meeting of the American Society for Cell Biology December 13-17, 2003 San Francisco, CA
- (2) **Gregory P. Tochtrop**, Douglas F. Covey, and David P. Cistola, “Cooperativity in Ligand-Protein Recognition: Human Ileal Bile Acid Binding Protein”, The 15th Annual Gibbs Conference on Biothermodynamics, September 29-October 2, 2001, Carbondale, IL.
- (3) **Gregory P. Tochtrop**, David P. Cistola, Douglas F. Covey, “Molecular Recognition of the Cholanic Acids by Human Ileal Bile Acid Binding Protein”, The 222nd National Meeting of the American Chemical Society, August 26-30, 2001, Chicago, IL.
- (4) **Gregory P. Tochtrop**, Gregory T. DeKoster, Douglas F. Covey, and David P. Cistola, “NMR Structure of Doubly Ligated Human Ileal Bile Acid Binding Protein”, Keystone Symposia: Frontiers of NMR in Molecular Biology VII, January 20-26, 2001, Big Sky, MT.

PROFESSIONAL SERVICE AND SOCIETIES

1996–Present	Member, American Chemical Society
2002–Present	Member, American Society for Cell Biology
2007–Present	Ad Hoc reviewer, Steroids
2007–Present	Ad Hoc reviewer, Organic Letters
2007–Present	Ad Hoc reviewer, Journal of Organic Chemistry
2007–Present	Ad Hoc reviewer, Journal of Chemical Education

PROFESSIONAL REFERENCES

Professor Stuart L. Schreiber
The Broad Institute of Harvard and MIT
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Professor Douglas F. Covey
Department of Molecular Biology and Pharmacology
Washington University School of Medicine
660 S. Euclid Ave. Campus Box 8103
St. Louis, MO 63110
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Professor David P. Cistola
East Carolina University
Dean of Research and Professor of Clinical
Laboratory Science and Biochemistry
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Professor George W. Gokel
Department of Molecular Biology and Pharmacology
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FUNDING

Current:

- American Cancer Society: Cuyahoga Pilot Grant Program: \$30,000
- Institutional start-up award package: \$450,000
- Reuter Foundation (CO-PI with John J. Letterio) \$35,000

Pending:

- NSF: CAREER Award \$870,462
- NIH: R03 Program in chemoprevention of cancer (CO-PI with John J. Letterio) \$100,000
- American Heart Association: Scientist Development Grant \$308,000

Completed

- NIH NRSA Postdoctoral Fellowship \$138,500

TRAINING

Independent Career

Tonibelle Gatbonton: (2006–Present) Tonibelle is a student in the Biomedical Sciences Training Program (BSTP) in the Department of Pharmacology at Case. Tonibelle is a joint graduate student between Dr, John Letterio (Chief of Pediatric Hematology and Oncology) and I, studying the chemistry and biology of triterpenoids as chemopreventives.

Qingjiang Li: (2006–Present) Qingjiang is a graduate student in the Department of Chemistry studying the chemistry and biology of bile acids and their interactions with lipid binding proteins and the nuclear receptor FXR

Yong Han: (2006–Present) Yong, is a postdoctoral fellow studying the ligand selectivity of lipid binding proteins and the effect this has on their signaling through nuclear receptors.

Training Career

Julie Hall (2002–2004): During my postdoctoral training in the King laboratory I was in charge of Julie's mentoring as I designed and oversaw her project evaluating molecules that had come out of chemical genetic screens. I have also served as Julie's primary reference from her undergraduate research. Currently, Julie is a medical student at University of California San Francisco, and is entering a research fellowship at the NIH this summer.
