

NATHAN E. GOLDFARB, Ph.D.

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HIGHLIGHTS

Experience with a variety of techniques and fields of biochemistry and molecular biology
History of method development and validation including industrial applications
Experience with GLP regulations
Skilled in analytical chemistry including HPLC, GC, and LC/MS
Creative, well-organized problem solver

EDUCATION

Ph.D., Biochemistry and Molecular Biology, University of Florida, Gainesville, FL, 2003
Dissertation Title: "Inspection of Ion Switch Residues that Mediate the pH-Dependent Conformational Change of 'Short' Recombinant Pseudocathepsin D"
Dissertation Chairperson: Distinguished Professor Ben M. Dunn, Ph.D.

M.S., Molecular Biology/Biotechnology, East Carolina University, Greenville, NC, 1998
Thesis Title: "Random Mutagenesis of the Extrinsic Loops C and E of the CP43 Protein of Photosystem II"
Thesis Chairperson: Professor Cindy Putnam-Evans, Ph.D.

B.S., Biology, Virginia Polytechnic Institute and State University, Blacksburg, VA, 1994

RESEARCH EXPERIENCE

R&D Chemist, Vistakon (Johnson & Johnson) 2007-present
Utilized HPLC and GC for analytical testing of customer samples
Delivered data reports to management for review

Senior Scientist, Schering-Plough Research Institute 2005-2007
Conducted expression, purification, and characterization of alcohol dehydrogenases
Involved in enzymatic desymmetrization of key pharmaceutical intermediates including:

- High-throughput screening of novel reductases
- Screening of commercial enzymes

Executed validation study of out-sourced technology

Post-Doctoral Fellowship, Schering-Plough Research Institute 2003-2005
Characterized Presenilin 2-gamma-secretase in an Sf9 insect cell reconstitution system to aid in the discovery of neurobiological therapeutics
Discovered Presenilin 2 isoforms

Graduate Assistant, University of Florida 1998-2003
 Discovered ionizable switches in “short” recombinant human pseudocathepsin D
 Performed site-directed mutagenesis, protein expression/refolding/purification, kinetic and structural characterization of native and mutant proteins
 Performed kinetic and molecular modeling with KINSIM, DynaFit, and SYBYL software

Graduate Assistant, East Carolina University 1995-1998
 Utilized random-mutagenesis to study the chlorophyll binding protein, CP43
 Generated a gene deletion and “revertant” strain of cyanobacterium using homologous recombination techniques

AWARDS

Travel Grant Recipient, University of Florida, 2001, 2003
 Travel Grant Recipient, International Proteolysis Society, 2001
 McDaniel Scholarship, East Carolina University, 1996

AFFILIATIONS

Sigma Xi, The Scientific Research Society, 1998-2003
 Phi Sigma, Biology/Biochemistry Honors Society, 1994
 Sigma Pi Fraternity International, 1991-1994

ARTICLES

Goldfarb N.E., Lam M.T., Bose A.K., Patel A.P., and Dunn B.M. Electrostatic switches that mediate the pH-dependent conformational change of “short” recombinant human pseudocathepsin D. *Biochemistry*. 2005, 44:48, 15725-33.

Beyer B.B., **Goldfarb N.E.**, and Dunn B.M. Expression, purification, and characterization of aspartic endopeptidases: *Plasmodium* plasmepsins and “short” recombinant human pseudocathepsin D. *Current Protocols in Protein Science*. 2003.

Wlowdower A., Li M., Gustchina A., Zbigniew D., Uchida K., Oyama H., Oda K., **Goldfarb N.E.**, and Dunn B.M. Inhibitor complexes of the *Pseudomonas* serine-carboxyl proteinase. *Biochemistry*. 2001, 40:51, 15602-15611.

Goldfarb N.E., Knoepfle N., and Putnam-Evans C. Construction of a *psbC* deletion strain in *Synechocystis* 6803. *SAAS Bull. Biochem. Biotechnol.* 1997, 10, 1-6.

ABSTRACTS

Dunn B.M., Li M., Gustchina A., Oda K., **Goldfarb N.E.**, Wlowdower A. (2002). Inhibitor complexes of the *Pseudomonas* serine-carboxyl proteinase. The Southeastern Branch of the American Society for Microbiology, pp. A19.

Goldfarb N.E., Lam M.T., Bose A.K., Patel A.P., and Dunn B.M. (2001). Evidence for E5, E180, and D187 as ionic switches mediating pH-dependent autoregulation of

“short” recombinant pseudocathepsin D. 2nd General Meeting of the International Proteolysis Society. Munich, Germany.

Beyer B., Chung A., Johnson J., **Goldfarb N.E.**, Clemente J., Moose R., Perry K., and Dunn B.M. (2001). Analysis of aspartic proteinase specificity utilizing targeted chromogenic combinatorial peptide libraries. *FASEB Journal*, vol. 15(5), pp. A539.

Lam M.T. and **Goldfarb N.E.** (2001). Inspection of putative ion switches in “short” recombinant pseudocathepsin D. *FASEB Journal*, vol. 15(5), pp. A537.

Goldfarb N.E. and Dunn B.M. (2001). Determination of the role of E180Q in the pH-dependent conformational change of “short” recombinant pseudocathepsin D. *FASEB Journal*, vol. 15(5), pp. A1159.

Goldfarb N.E., Knoepfle N., and Putnam-Evans C. (1998). Mutagenesis of the CP43 protein of photosystem II in *Synechocystis* 6803. *Journal of Elisha Mitchell Society*.

Goldfarb N.E., Knoepfle N., and Putnam-Evans, C. (1998). The CP43 protein of photosystem II in *Synechocystis* 6803: Random mutagenesis of the large extrinsic loop. *FASEB Journal*, vol. 12(8), pp. A1443.

ORAL PRESENTATIONS

Goldfarb N.E. (2005). Presinilin 2 and hCat D: Two unique aspartyl proteinases. Honorary Post-Doctoral Seminar. Schering-Plough Research Institute, NJ.

Goldfarb N.E., Kraus J., Hung S., and Dunn B.M. (1999). Inspection of putative ion switches in recombinant human “short” pseudocathepsin D. The 8th International Aspartic Protease Conference. Madeira, Portugal.

Goldfarb N.E., Knoepfle N., and Putnam-Evans C. (1998). Random mutagenesis of 185T to 185I in the hydrophilic loop C of the CP43 protein of photosystem II. Annual Meeting North Carolina Academy of Sciences, Greensboro, NC.

Goldfarb N.E., Knoepfle N., and Putnam-Evans C. (1998). Random mutagenesis of 185T to 185I in the hydrophilic Loop C of the CP43 protein of photosystem II. Annual Meeting American Society of Plant Physiologists-Southern Section. Roanoke, VA.

REFERENCES

| | <u>Phone</u> |
|---|----------------|
| Dr. Ben M. Dunn, Ph.D. Distinguished Professor | (352) 392-3362 |
| Dr. Fang Lu, Ph.D. Senior Research Fellow | (904) 443-3109 |
| Dr. Thomas J. Hosted, Ph.D Principal Scientist | (908) 740-7285 |