Curriculum Vitae

Stewart Dean Allison
Department of Basic Pharmaceutical Sciences
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Education

1993-1998 Ph.D. Pharmaceutical Sciences, University of Colorado Health Sciences Center. John F. Carpenter Ph.D., thesis advisor.

1985-1987 Graduate study, Cell and Developmental Biology, University of California, Davis.

1981-1985 Bachelor of Arts, Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder.

Professional Experience

2008- Assistant Professor, Department of Basic Pharmaceutical Sciences, Regis University School of Pharmacy, Denver, CO.

2006-2008 Assistant Professor of Drug Delivery, South Carolina College of Pharmacy, Columbia, SC.

2004-2006 Principal Scientist, Pharmaceutical Research and Development, PR Pharmaceuticals, Fort Collins, CO.

2001-2004 Senior Scientist, Pharmaceutical Research and Development, PR Pharmaceuticals Fort Collins, CO.

2000-2001 Scientist, Pharmaceutical Research and Development, PR Pharmaceuticals, Fort Collins, CO.

1998-2000 Postdoctoral Fellow, Laboratory of Thomas Anchordoquy, Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center.

1995-1998 Graduate Research Assistant, Department of Pharmaceutical Sciences, University of Colorado Health Sciences Center.

1996-1998 Graduate Intern, Cytoskeleton Inc. Denver, CO.

1993-1995 Teaching Assistant, University of Colorado School of Pharmacy.

1987-1993 Research Associate, National Jewish Center for Immunology and Respiratory Medicine.

Research Funding

2007-2008 Manufacturing effects on structural relaxation and drug release performance in poly(D,L-lactide-co-glycolide) nanoparticle drug delivery systems. University of South Carolina, Office of Research and Health Sciences Research Funding program. Role: Principal Investigator. $17,900.

2008-2009 Inhaled Antibiotic Nanoparticles for Protection From Pneumonic Burkholderia Infection . NIAID Rocky Mountain Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Developmental Grant U54-A1-065357. Role: Co-Investigator. $100,000. S. Dow (PI).

Professional Service

2011- Editorial Board Member, Pharmaceutical Patent Analyst

2011- Manuscript Reviewer, European Journal of Pharmaceutics and Biopharmaceutics

2009 Session Chair, Colorado Protein Stability Conference

2007 Session Chair, Colorado Protein Stability Conference

2007 Judge, South Carolina State Science Fair

2006 - Manuscript Reviewer, Journal of Pharmaceutical Sciences

2006- Manuscript Reviewer, Journal of Controlled Release

2001-2006 Industrial Mentor, University of Colorado Center for Pharmaceutical Biotechnology. Supervisor to Danielle Biggs, graduate student, 2001.

University/ College Service

2010- Regis University Rueckert-Hartman College for Health Professions Academic Council

2008-	Regis University Institutional Review Board
2008-2009	Regis Universtiy Rueckert-Hartman College for Health Professions Education and Outcomes Committee
2007	Electron Microscopy Center Advisory Board
2007	MUSC Peng Lectureship Search Committee
2007-2008	South Carolina College of Pharmacy Admissions Committee
2006-2007	South Carolina College of Pharmacy Curriculum Committee

School Service Leadership

2009-	Chair, Rueckert-Hartman College for Health Professions School of Pharmacy Curriculum Committee

Patent Filings

2006	**Allison, SD**, Schmidt, P, and Hudnut, P. "Controlled Release Compositions of Estradiol Metabolites" PR Pharmaceuticals. US2006/008378 A1
2004	**Allison, SD**. "Composition and Method for the Encapsulation of Water-Soluble Molecules Into Nanoparticles" PR Pharmaceuticals. U.S. patent 6,720,008
2003	**Allison, SD**., Schmidt, P., and Hudnut, P. "Stabilized Sustained-Release Estradiol Metabolite Pharmaceutical Preparations" PCT/US no. 03/12727. PR Pharmaceuticals.
1999	Anchordoquy, T. and **Allison, SD**. Provisional Patent Application, "Stabilized Nucleotide-Based Products", University Technology Corporation # 9072

Awards and Honors

2005	Employee of the Year, PR Pharmaceuticals.
2002-2003	"HiPo" management training program for high potential employees. PR Pharmaceuticals.
1997	Outstanding Student Poster Presentation, Colorado Institute for Research in Biotechnology Annual Meeting.

1996 Rho Chi Pharmacy Honor Society.

1994-1997 American Foundation for Pharmaceutical Education Predoctoral Fellowship.

1993-1995 Colorado Doctoral Fellowship.

Podium Presentations and Invited Lectures

2007 Chemistry and Biochemistry Department, University of South Carolina. "Structural Relaxation in Amorphous Drug Delivery Systems."

2006 Infusion Nurses Society Annual Academy. "Liposomal Drug Delivery."

2005 University of South Carolina. "Using Molecular Mobility Analysis to Understand the Effects of Processing and Storage on the Stability of an Encapsulated Drug."

2005 University of Alberta, Canada. "Blood Doping and Detection Methods."

2005 University of Alberta, Canada. "Using Molecular Mobility Analysis to Understand the Effects of Processing and Storage on the Stability of an Encapsulated Drug."

2005 University of Cincinnati. "Quantitation of the Effect of the Microencapsulation Process on Drug Stability and Release."

2004 University of Minnesota, Duluth. "Quantitation of the Effect of the Microencapsulation Process on Drug Stability and Release."

2000 University of Bath, UK. "Using Physical Stress to Determine Structure-Activity Relations in Nonviral Gene Therapy Vectors."

1998 Protein Design Labs, Inc. Mountain View, CA. "Mechanism of Protein Stabilization During Freeze-Drying: Implications for Long-Term Stability."

1997 American Chemical Society Annual Meeting, San Francisco, CA. "Inhibition of lyophilization-induced protein unfolding is lost at high disaccharide to protein ratios due to amorphous phase separation into protein- and sugar-rich domains during freezing."

Abstracts

2007 American Association of Pharmaceutical Scientists Annual Meeting. "Structural relaxation in PLGA microparticles affects drug release."

2003 Controlled Release Society Annual Meeting. "Correlation of relaxation time and stability of an estradiol analog encapsulated in PLGA microspheres."

2002 Controlled Release Society Annual Meeting. “Improved method for the encapsulation of water soluble macromolecules into PLGA nanoparticles using microemulsions.”

2000 Colorado Biotechnology Conference. “Lyophilization of nonviral gene therapy vectors.”

1999 Colorado Biotechnology Conference. “Mechanisms of protection of cationic lipid-DNA complexes during lyophilization.”

1999 Colorado Biotechnology Conference. “Analysis of self-assembled cationic lipid-DNA complexes using flow field-flow fractionation and light scattering.”

1998 Colorado Biotechnology Conference. “Development of a stable dried formulation of actin.”

1998 Colorado Biotechnology Conference. “Hydrogen bonding between disaccharides and protein is responsible for structural stabilization of protein during dehydration.”

1997 American Association of Pharmaceutical Scientists Annual Meeting. "Amorphous phase separation between trehalose and lysozyme leads to loss of ability to maintain native secondary structure in lyophilized preparations."

1996 American Association of Pharmaceutical Scientists Annual Meeting. "Counteracting effects of thiocyanate and sucrose on the structure and aggregation of chymotrypsinogen during freezing, drying, and rehydration."

1996 Colorado Institute for Research in Biotechnology Annual Meeting. "Structure-activity comparison of freeze-dried versus air-dried actin formulations."

1995 American Association of Pharmaceutical Scientists Annual Meeting. "Inhibition of dehydration-induced protein unfolding by carbohydrates is due to direct hydrogen bonding between sugar and protein."

1994 American Chemical Society Annual Meeting. "Differential quantitation of freezing- and drying-induced protein unfolding and inhibition by sucrose."

1994 Biophysical Society Annual Meeting. "Quantitative relationship between lyophilization-induced protein unfolding and aggregation."

Publications-papers

Allison, SD (2008) Analysis of Initial Burst in PLGA Microparticles. *Expert Opin. Drug Del*. 5(6):615-628.

Allison, SD (2008) Effect of Structural Relaxation on the Preparation and Drug Release Behavior of Poly(lactic-co-glycolic)acid Microparticle Drug Delivery Systems. *J. Pharm. Sci*. 97 (6):2022-2035.

Allison, SD (2007) Liposomal drug delivery. J. Infus. Nurs. 30(2):89-95.

Zacharia, LC, Piche, CA, Fielding, RM, Holland, KM, **Allison, SD**, Dubey, RK, and Jackson, EK (2004) 2-Hydroxyestradiol is a prodrug of 2-methoxyestradiol. J. Pharmacol. Exp. Ther. 309(3):1093-1097

Molina, M dC, **Allison, SD**, and Anchordoquy, TJ (2001) Maintenance of particle size during the freezing step of the lyophilization process is insufficient for preservation of activity: insight from other structural indicators. *J. Pharm. Sci*. **90**: 1445-1455.

Anchordoquy, TJ, **Allison, SD**, Molina, M dC, Girouard, LG, and Carson, TK (2001) Physical stabilization of DNA-based therapeutics. *Drug Discovery Today* **6**: 441-448.

Lee, H, Williams, KR, **Allison, SD**, and Anchordoquy, TJ (2001) Analysis of self-assembled cationic lipid-DNA gene carrier complexes using flow field-flow fractionation and light scattering. *Anal. Chem*. **73**: 837-843.

Allison, SD, Molina, M dC, and Anchordoquy, TJ (2000) Stabilization of lipid/DNA complexes during the freezing step of the lyophilization process: the particle isolation hypothesis. *Biochim. Biophys. Acta*. **1468**: 127-138.

Allison, SD, and Anchordoquy, TJ (2000) Mechanisms of protection of cationic lipid-DNA complexes during lyophilization. *J. Pharm. Sci.* **89**: 682-691.

Allison, SD., Manning, MC., Randolph, TW., Middleton, K, Davis, A, and Carpenter, JF. (2000) Optimization of storage stability of lyophilized actin using combinations of disaccharides and dextran. *J. Pharm. Sci.* **89**:199-214.

Allison, SD., Randolph, TW., Manning, MC., Middleton, K, Davis, A, and Carpenter, JF. (1998) Effects of drying methods and additives on structure and function of actin: Mechanisms of dehydration-induced damage and its inhibition. *Arch. Biochem. Biophys*. **358**:171-181.

Allison, SD., Chang, B., Randolph, TW., and Carpenter, JF. (1998) Hydrogen bonding between sugar and protein is responsible for inhibition of dehydration-induced protein unfolding. *Arch. Biochem. Biophys*. **365**:289-298.

Allison, SD., Dong, A., and Carpenter, JF. (1996) Counteracting effects of thiocyanate and sucrose on chymotrypsinogen secondary structure and aggregation during freezing, drying, and rehydration. *Biophys. J*. **71**: 2022-2032.

Kendrick, BS., Dong, A., **Allison, SD**., Manning, MC., and Carpenter, JF. (1996) Quantitation of the area of overlap between second-derivative amide I infrared spectra to determine the structural similarity of a protein in different states. *J. Pharm. Sci*. **85**: 155-158.

Dong, A., Matsuura, J., **Allison, SD**., Chrisman, E., Manning, MC., and Carpenter, JF. (1996) Infrared and circular dichroism spectroscopic characterization of structural differences between beta-lactoglobulin A and B. *Biochemistry*. **35**: 1450-1457.

Dong, A., Prestrelski, SJ., **Allison, SD**., and Carpenter, JF. (1995) Infrared spectroscopic studies of lyophilization- and temperature-induced protein aggregation. *J. Pharm. Sci*. **84**: 415-424.

Publications-book chapters

Allison, SD, and Anchordoquy, TJ. (2001) Lyophilization of Nonviral Gene Delivery Systems. In: “Nonviral Vectors for Gene Therapy,” M. Findeis, ed. Methods in Molecular Medicine, Humana press, Totowa, NJ.

Anchordoquy, TJ, Armstrong, TK, Molina, Md.C, **Allison, SD**, Zhang, Y, Patel, MM, Lentz, YK, and Koe, GS. Formulation considerations for DNA-based therapeutics. In: "Cellular Drug Delivery: Principle and Practice", DR. Lu and S. Øie eds., Humana Press, Totowa, NJ (2004).

Anchordoquy, TJ, Armstrong, TK, Molina, Md.C, **Allison, SD**, Zhang, Y, Patel, MM, Lentz, YK, and Koe, GS Physical stabilization of plasmid DNA-based therapeutics during freezing and drying. In: "Lyophilization of Biomaterials", M. Pikal and R. Costantino eds., Biotechnology: Pharmaceutical Aspects, Volume 1, AAPS Press, Washington D.C. (2004).