

BIOGRAPHICAL SKETCH

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NAME Ralph L. Henry	POSITION TITLE Professor
eRA COMMONS USER NAME	

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Kansas, Lawrence KS	BSE	1979-1984	Biology and Chemistry
Kansas State University, Manhattan KS	MS	1984-1987	Plant Physiology
Kansas State University, Manhattan KS	PhD	1987-1991	Membrane protein assembly
University of Florida, Gainesville FL	Postdoctoral	1992-1996	Protein targeting

PROFESSIONAL EXPERIENCE

Jan – Aug 1990	Program and Curriculum Assistant for the Space Life Sciences Training Program, NASA-Kennedy Space Center, Florida
1985-1991	Graduate Assistant, Div. Of Biology, Kansas State University
1992-1996	Postdoc, Plant Cell & Molecular Biology Dept. University of Florida
1996-2002	Assistant Professor, Biological Sciences Dept., University of Arkansas
2002-2005	Associate Professor, Biological Sciences Dept., University of Arkansas
2004-present	Co-founder & Vice President for Biopharmaceutics, InterveXion Therapeutics, LLC
2005-present	Professor, Biological Sciences Dept., University of Arkansas

HONORS

- National Science Foundation Grant Review Panel Member, Spring 2001.
- National Institutes of Health Grant Review Panel Member, Spring 2003.
- Dept. of Energy (Biosciences Division) Panel Member, Fall 2004 and Fall 2007.
- Undergraduate Excellence Award in the area of Discovery (awarded in consecutive years). This award is given to only one student/mentor combination each year and was presented to Tracey Johnson (1998) and Justin Delille (1999) by the Arkansas Teaching Academy for research conducted in my laboratory.
- Panel Moderator; NSF National Conference, Trajectory Toward Sustainable Scientific Based Success in EPSCoR Jurisdiction (September, 2005), *Panel on Biotechnology Initiatives*.
- Panel Moderator: Arkansas Venture Forum, Nanotechnology in Medicine and Life Sciences (November, 2006).
- Invited Speaking Engagements (since 2000):
 - Noble Foundation, Ardmore OK (March, 2001).
Title: *Protein routing to the thylakoid membrane.*
 - European Research Conference on Protein Targeting (September, 2001).
Title: *SRP and Oxa1 homologues in chloroplasts; components of a novel posttranslational targeting pathway.*
 - Business Ventures Group at Univ. of Arkansas for Medical Sciences (July, 2001).
Title: *Plant-based production of antibody therapies to treat Methamphetamine abuse.*
 - University of California San Francisco (November, 2001).
Title: *Posttranslational protein targeting by a chloroplast signal recognition particle.*
 - Cornell University (March, 2002).
Title: *Protein targeting by a chloroplast signal recognition particle; what pure components can tell us.*
 - Arkansas Biosciences Institute (April, 2002).
Title: *Using tobacco to treat drug abuse.*
 - University of Arkansas (April, 2002).
Title: *Protein Targeting: A chloroplast model to understand the structure/function of a mammalian SRP.*
 - University of California Davis (May, 2002).
Title: *Protein targeting by a chloroplast signal recognition particle: Defining the targeting-translocation interface.*
 - Ohio State University (January, 2003).

Title: *Protein interactions at the protein targeting-translocation interface*.
University of Stockholm, Stockholm Sweden (May, 2003).

Title: *Protein targeting to the thylakoid membrane by a chloroplast signal recognition particle; Protein interactions at the membrane interface*.

13th International Photosynthesis Conference, Montreal Canada (Sept. 2004)

Title: *SRP-based protein targeting to the ALB3 translocase in thylakoid membranes*.

Arkansas Biosciences Institute Fall Research Symposium (October, 2004).

Title: *Improving mother nature: Designer Proteins for Optimized Function*.

Arkansas Venture Forum (May, 2005).

Title: *Monoclonal Antibody Production in Plants: Making medical treatments 'affordable'*.

Gordon Research Conference on 'Protein Transport Across Cell Membranes' (June, 2005)

Title: *Protein Interactions in Protein Targeting by a Chloroplast Signal Recognition Particle*.

Arkansas IDeA Networks of Biomedical Research Excellence, Spring Conference (February, 2006)

Title: *Making Medicines to Treat Methamphetamine Abuse*.

Laboratory of Plant Development, CEA Cadarache, Marseille, France (October, 2006)

Title: *Targeting of LHCs to the chloroplast thylakoid membrane by a chloroplast SRP and its receptor*.

University of Arkansas for Medical Sciences (December 2006)

Title: *The evolution of protein secretion by signal recognition particle and its receptor*.

Conference on 'Sustainable Nanotech Innovations, Products and Toxicology', Fayetteville AR (August, 2008)

Title: *Design of liposome-encased quantum dots for diagnostic and drug delivery applications*.

University of Arkansas for Medical Sciences and Arkansas Biosciences Institute (September 2008)

Title: *Selective targeting of endothelial cells by liposomes labeled with angiostatic peptide*.

Conference on Nanotechnology in Healthcare, Rockefeller Institute (January 2009).

Title: *Design of liposome-encased quantum dots for drug delivery and release*.

PATENTS

Pending:

Monoclonal antibodies that selectively recognize methamphetamine and methamphetamine like compounds.
SM Owens, M Gunnell, Y Chi, FI Carroll, R Henry, E Peterson. US Patent Application (Non-Provisional), Serial No 11/763,948, filed 6/15/07.

SELECTED PEER-REVIEWED PUBLICATIONS (since 2000)

1. Marty, NJ, R Dakshinamurthy, AD Kight, NE Lewis, D Fologea, TKS Kumar, **RL Henry**, RL Goforth (2009). The membrane-binding motif of chloroplast signal recognition particle receptor (cpFtsY) regulates GTPase activity. **J. Biol. Chem** 284(22), 14891-14903
2. Ananthamurthy, K, KM Kathir, A Kight, RL Goforth, **RL Henry**, TKS Kumar (2008). ¹H, ¹³C and ¹⁵N Resonance Assignments of the C-terminal Chromo domain of the chloroplast signal recognition particle. **J Biomolecular NMR Assignments** 2(1):37-39.
3. KM Kathir, D Rajalingam, V Sivaraja, A Kight, RL Goforth, C Yu, **RL Henry**, TKS Kumar (2008). Assembly of Chloroplast Signal Recognition Particle involves Structural Rearrangement in cpSRP43 **J Mol Biol** 381(1):49-60
4. Lewis, P, I Fritch, RE Gawley, **RL Henry**, A Kight, JO Lay, R Liyanage, J McLachlin (2008). Dynamics of saxitoxin binding to saxiphilin c-lobe reveals conformational change. **Toxicol.** 51:208-217.
5. **Henry, RL**, RL Goforth, D Scheunemann (2007). Chloroplast SRP/FtsY and Alb3 in Protein Integration into the Thylakoid Membrane; In **The Enzymes (Volume 25; Molecular Machines Involved In Protein Transport Across Cellular Membranes)**, Ross E. Dalbey, Carla Koehler, and Fuyuhiko Tamanoi Editors.
6. Tzvetkova-Chevolleau T, C Hutin, LD. Noël, RL Goforth, JP Carde, S Caffarri, I Sinning, M Groves, JM Teulon, NE Hoffman, **RL Henry**, M Havaux and L Nussaume (2007). Canonical SRP components can be bypassed for post-translational protein targeting in chloroplasts. **Plant Cell**. 19(5):1635-48.
7. Peterson E, MG Gunnell, Y Che, RL Goforth, FI Carroll, **RL Henry**, H Liu, SM Owens (2007). Using Hapten Design to Discover Therapeutic Monoclonal Antibodies for Treating Methamphetamine Abuse. **J Pharm. Exp. Therap.** 322(1):30-9.
8. Peterson E, SM Owens, **RL Henry** (2006). Monoclonal Antibody Form and Function: Manufacturing the Right Antibodies for Treating Drug Abuse. **AAPS Journal**. 8(2)
9. Sivaraja, V., T.K.S. Kumar, P.S.T. Leena, A. Chang, C. Vidya, R.L. Goforth, D. Rajalingam, K. Arvind, J. Ye, J. Chou, **RL Henry** and C Yu. (2005) Three-Dimensional Solution Structures of the Chromo Domains of cpSRP43. **J Biol Chem**, 280(50):41465-71.
10. Cai, Y, M. Moore, R. Goforth, **RL Henry**, and R. Beitle. (2004) Genomic data for alternate production strategies: Identification of major contaminating species for Co(II) immobilized metal affinity chromatography. **Biotechnology and Bioengineering**, 88(1):77-83.

11. Wang Q, RW Sullivan, A Kight, **RL Henry**, AM Jones, KL Korth. (2004) Deletion of the chloroplast-localized THYLAKOID FORMATION1 gene product in Arabidopsis thaliana leads to deficient thylakoid formation and variegated leaves. **Plant Physiol.** 136(3):3594-604.
12. Goforth RL, EC Peterson, J Yuan, MJ Moore, AD Kight, MB Lohse, JSakon, and **RL Henry** (2004). Regulation of the GTPase cycle in posttranslational signal recognition particle based protein targeting involves cpSRP43. **J Biol Chem.** 279(41):43077-84.
13. Kuhn, A, R Stuart, **RL Henry**, and R Dalbey (2003). The Alb3/Oxa1/YidC protein family: membrane localized chaperones facilitating membrane protein insertion? **Trends Cell Biol.** 13(10):510-6.
14. Moore, MJ, RL Goforth, H Mori, and **RL Henry** (2003). Functional interaction of chloroplast SRP/FtsY with the ALB3 translocase in thylakoids: substrate not required. **J Cell Biol.** 162(7):1245-54.
15. Yuan J, A Kight, R Goforth, M Moore, EC Peterson, J Sakon, and **RL Henry** (2002). ATP Stimulates SRP/FtsY-Supported Protein Integration in Chloroplasts. **J Biol Chem.** 277 (35): 32400-4.
16. Jiang F, Yi L, M Moore, M Chen, T Rohl, KJ van Wijk, JW de Gier, **RL Henry**, R Dalbey (2002). Chloroplast YidC homologue Albino3 can functionally complement the bacterial YidC depletion strain and promote membrane insertion of both bacterial and chloroplast thylakoid proteins. **J Biol Chem.** 277(22):19281-8.
17. Woolhead, C, S Thompson, M Moore, C Tissier, A Mant, A Rodger, **RL Henry**, and C Robinson (2001). Distinct Albino3-dependent and -independent pathways for thylakoid membrane protein insertion. **J Biol. Chem.** 276(44):40841-6.
18. Mant, A, CA Woolhead, M Moore **RL Henry**, C Robinson (2001). Insertion of PsaK into the thylakoid membrane in a 'horse-shoe' conformation occurs in the absence of signal recognition particle, nucleoside triphosphates or functional Alb 3. **J Biol. Chem.** 276(39):36200-6.
19. Eichacker, L. and **RL Henry**. (2001) Function of a chloroplast SRP in thylakoid protein export. **Biochim Biophys Acta.** 1541(1-2):120-34.
20. Tu, CJ, EC Peterson, **RL Henry**, NE Hoffman (2000). The L18 domain of LHCP binds to the cpSRP43 subunit of a chloroplast signal recognition particle. **J Biol. Chem.** 275:13187-90.
21. DeLille, J, EC Peterson, T Johnson, M Moore, A Kight, **RL Henry** (2000). A novel recognition element in LHCP enables post-translational binding by a chloroplast signal recognition particle. **Proc Natl Acad Sci.** 97: 1926-1931.