

Curriculum Vitae

Min Li, M.D., Ph.D.

Section of Nephrology and Hypertension
Department of Medicine, School of Medicine
Tulane University Health Sciences Center
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Education

- 1990-1994 Ph.D., School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka, Japan
Doctoral Dissertation: "Biochemical studies of neuropeptides vasoactive intestinal polypeptide (VIP), helodermin and pituitary adenylate cyclase-activating polypeptide (PACAP) in human neuroblastoma."
- 1981-1987 M.D., School of Medicine, Shanghai Jiaotong University School of Medicine, Shanghai, P.R.China

Research and Teaching Experiences

Associate Professor:

- 10/07-present Section of Nephrology and Hypertension, Department of Medicine, Tulane University School of Medicine, New Orleans, LA
- Development of peptide therapeutics for acute kidney injury.
 - Study on acute kidney injury-induced renal tubule DNA damage, signaling pathway and molecular mechanisms.
 - Studying the correlative functional process in the animal models of acute kidney injury or chronic kidney disease to understand the pathophysiology, the molecular mechanisms of proteinuria-induced tubulointerstitial fibrosis.
 - Designing novel therapeutic strategies and examining the efficacy of novel drugs to slow progressive renal decline and preserve kidney function in plasma cell dyscrasias.
 - Clinical study and fellows, medical residents and medical students (4th year) research training under fellowship program and clinical study program.

Assistant Professor:

- 3/06-9/07 Section of Nephrology and Hypertension, Department of Medicine, Tulane University School of Medicine, New Orleans, LA

- Study on renal injury associated with multiple myeloma and development of peptide therapeutics for inflammatory disorders of the kidney.
- Studying the role of epithelial to mesenchymal transition in nephrotoxicity of myeloma light chain-induced renal interstitial inflammation and fibrosis in cell culture and animal model.
- Investigating the molecular mechanism and the potential of PACAP to prevent the renal tubular injury as well as the pathophysiology of renal fibrosis in multiple myeloma that may be reversible upon the administration of PACAP.

Research Assistant Professor:

7/00-1/06

Department of Medicine, Tulane University School of Medicine, New Orleans, LA

- Study on therapeutic potential of PACAP in multiple myeloma, and investigate the molecular mechanisms of PACAP as a potent inhibitor that directly suppresses myeloma cell growth and indirectly affects tumor cell growth by modifying the BM milieu of the MM.
- Study on the renoprotective effect by PACAP in myeloma kidney and other nephropathies. Established the molecular and cellular basis to investigate the signaling cascades involved in renoprotection by PACAP through the suppression of proinflammatory cytokines production caused by myeloma light chain-overloading both *in vivo* and *in vitro*.
- Cytogenetic study on the genetic heterogeneities of myeloma cells result variable growth inhibitory responses to novel chemotherapies for preventing bone marrow contributed mechanisms of drug resistance.
- Developingment of ubiquitous endoprotease furin-processible PACAP recombinant adeno-associated virus vector by site-directed mutagenesis.
- Gene therapy for hematological diseases by continuous delivery of bioactive PACAP through skeletal muscle-targeted gene transfer.
- Clinical pharmacokinetics study of intravenous infusion of PACAP in human.

Research Instructor:

9/95-6/00

Department of Medicine, Tulane University School of Medicine, New Orleans, LA

- Studied the molecular mechanisms of neuropeptides for regulating neuroendocrine functions.
- Study on various peptide hormones and their receptors using advanced biochemical and molecular biological technologies.
- Instructed Ph.D.-level graduate students in techniques for peptide research.

Research Associate:

9/95-present

U.S.-Japan Biomedical Research Laboratories, F. Edward Hebert Research Center, Tulane University Health Sciences Center, Belle Chasse, LA

- Molecular neuroendocrinological study on the therapeutic potential of PACAP as a neuroprotectant in neurological disorders.
- Currently Study on the signaling cascades involved in neuroprotection by PACAP using neuron/astroglia co-cultures and PACAP receptor-deficient mice.
- Studying the physiological role of PACAP, VIP and related peptides in reproductive endocrine function.
- Defining the regulatory mechanisms of signal transduction pathways for treatment of hormone-dependent infertility and improvement of reproductive health.
- Investigating the mechanisms of diverse reproductive cell signaling in coordinating/controlling sperm maturation, fertilization competence and activation.
- Developing new techniques for diagnosis, prevention and treatment of male and female reproductive system disorder, including infertility and contraception.
- Performing chromatographic analysis of chemical compounds, conducting development of a quality control program and the training of junior staff.

Postdoctoral Fellow:

- 4/94-3/95 Department of Molecular Neurobiology, the Institute of Medical Science, the University of Tokyo, Tokyo, Japan
- Studied the Molecular mechanisms of InsP₃ receptors for proper brain function.
 - Characterized InsP₃ receptor-mediated Ca²⁺ signaling pathway and receptor/channel function, and using molecular diagnostics to detect genetic diseases.
 - Studied the differential cellular expression of InsP₃ receptors (type1, 2 & 3) in gastrointestinal epithelium and the involvement of InsP₃-induced Ca²⁺ release in various gut secretory functions.
- 4/90-3/94 Laboratory of Bioorganic Chemistry, School of Pharmaceutical Sciences, University of Shizuoka, Shizuoka, Japan
- Studied towards a Ph.D. degree in biochemistry. Structure-function studies of neuropeptides PACAP, VIP, helodermin, CCK and galanin, and their specific receptor-mediating signal transduction pathways.
 - Studied the biological functions of peptide hormone analogues (agonist and antagonist) and oncogene products.
 - Performed chromatographic isolation and characterization of VIP/PACAP-related peptides.
 - Graduate instructor for biochemistry.

Clinical Assistant Professor:

- 4/95-8/96 Shanghai Institute of Digestive Disease, Ren-Ji Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, P.R.China

- Performed clinical research on qualitative and quantitative drug analyses and therapeutic drug monitoring.
- Performed clinical research and screening on regulatory hormones to detect endocrine diseases.

Clinical Instructor:

- 9/87-3/90 Section of General Internal Medicine, Department of Internal Medicine and Nuclear Medicine, Ren-Ji Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, P.R.China
- Worked as clinical physician and lecturer.
 - Instructed medical students for medical chemistry, internal medicine and nuclear medicine.
 - Performed various hormone analyses which other clinical laboratory did not provide, clinical analyzer evaluation and maintenance.

Academic Awards and Honors

- 2005 2005 Fellows' Award (Multiple Myeloma Research Foundation, New Canaan, CT)
- 2000-2002 Dean's List (University College of Tulane University, New Orleans, LA)
- 1994 Japan-China Medical Award (Japan-China Medical Society, Tokyo, Japan)
- 1989 Distinguished Young Physician Award (Shanghai Jiaotong University School of Medicine, Shanghai, P.R.China)
- 1982-1986 Shanghai Jiaotong University School of Medicine Scholarship (Shanghai, P.R.China)

Membership in Professional Organizations

- American Society of Nephrology
- American Society of Hematology
- American Cancer Society
- The American Endocrine Society
- Louisiana Cancer Research Consortium
- Association of American Medical Colleges (AAMC)
- The New York Academy of Science
- The Japan Endocrine Society

Peer-Reviewed Publications (Publications selected from a total of 52 peer-reviewed publications)

1. **M. Li, S. Balamuthusamy, E. E. Simon and V. Batuman. SILENCING MEGALIN AND CUBILIN GENES INHIBITS MYELOMA LIGHT CHAIN ENDOCYTOSIS AND AMELIORATES ITS TOXICITY IN HUMAN RENAL PROXIMAL TUBULE CELLS. *Am. J. Physiol. Renal Physiol.*, 295, F82-F90, 2008**

2. S. Sengul, **M. Li** and V. Batuman. Myeloma Kidney: TOWARD MYELOMA KIDNEY PREVENTION: NEW INSIGHTS FROM *IN VITRO* AND *IN VIVO* MODELS OF RENAL INJURY. *J. Nephrol.*, (In press), 2009
3. **M. Li**, K. S. Hering-Smith, E. E. Simon and V. Batuman. MYELOMA LIGHT CHAINS INDUCE EPITHELIAL-MESENCHYMAL TRANSITION IN HUMAN RENAL PROXIMAL TUBULE EPITHELIAL CELLS. *Nephrol. Dial. Transplant.*, 23 (3), 860-870, 2008
4. **M. Li**, J. L. Maderdrut, J. J. L. Lertora and V. Batuman. RENOPROTECTION BY PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE IN MULTIPLE MYELOMA AND OTHER KIDNEY DISEASES. *Regul. Pept.*, 145 (1-3), 24-32, 2008
5. **M. Li**, J. L. Maderdrut, J. J. L. Lertora and V. Batuman. INTRAVENOUS INFUSION OF PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE (PACAP) IN A PATIENT WITH MULTIPLE MYELOMA AND MYELOMA KIDNEY. *Peptides*, 28 (9), 1891-1895, 2007
6. **M. Li**, V. Batuman and A. Arimura. TREATMENT OF RENAL FAILURE ASSOCIATED WITH MULTIPLE MYELOMA AND OTHER DISEASES BY PACAP-38. *Ann. N. Y. Acad. Sci.*, 1070, 1-4, 2006
7. **M. Li**, S. Cortez and A. Arimura. PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE IS A POTENT INHIBITOR OF THE GROWTH OF LIGHT CHAIN-SECRETING HUMAN MULTIPLE MYELOMA CELLS. *Cancer Res.*, 66 (17), 8796-8803, 2006
8. T. Nakamachi, **M. Li**, S. Shioda and A. Arimura, SIGNALING INVOLVED IN PITUITARY ADENYLATE CYCLASE- ACTIVATING POLYPEPTIDE - STIMULATED ADNP EXPRESSION, *Peptide*, 27 (7), 1859-1864, 2006
9. A. Arimura, **M. Li** and V. Batuman. POTENTIAL PROTECTIVE ACTION OF PITUITARY ADENYLATE CYCLASE- ACTIVATING POLYPEPTIDE (PACAP38) ON *IN VITRO* AND *IN VIVO* MODELS OF MYELOMA KIDNEY INJURY. *Blood*, 107 (2), 661-668, 2006
10. **M. Li**, C. David, T. Kikuta, A. Somogyvari-Vigh and A. Arimura. SIGNALING CASCADES INVOLVED IN NEUROPROTECTION BY SUBPICOMOLAR PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE 38. *J. Mol. Neurosci.*, 27, 91-105, 2005
11. **M. Li**, H. Funahashi H, M. Mbikay, S. Shioda and A. Arimura. PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE- MEDIATED INTRACRINE SIGNALING IN THE TESTICULAR GERM CELLS. *Endocrine*, 23 (1), 59-76, 2004
12. S. Srinivasan, D. O. Bunch, Y. Feng, R. M. Rodriguiz, **M. Li**, R. L. Ravenell, G. X. Luo, A. Arimura A, L. D. Fricker, E. M. Eddy and W. C. Wetsel. DEFICITS IN REPRODUCTION AND PRO-GONADOTROPIN-RELEASING HORMONE PROCESSING IN MALE CPEFAT MICE. *Endocrinology*, 145 (4), 2023-2034, 2004

13. **M. Li** and A. Arimura. NEUROPEPTIDES OF THE PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE/VASOACTIVE INTESTINAL POLYPEPTIDE/GROWTH HORMONE-RELEASING HORMONE/SECRETIN FAMILY IN THE TESTIS. *Endocrine*, 20 (3), 201-214, 2003
14. T. Kozicz, **M. Li** and A. Arimura. THE ACTIVATION OF UROCORTIN IMMUNOREACTIVE NEURONS IN THE EDINGER-WESTPHAL NUCLEUS FOLLOWING ACUTE PAIN STRESS IN RATS. *Stress*, 4 (2), 85-90, 2001
15. D. Reglodi, A. Somogyvari-Vigh, S. Vigh, **M. Li**, I. Lengvari and A. Arimura. PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE IS HIGHLY ABUNDANT IN THE NERVOUS SYSTEM OF ANOXIA-TOLERANT TURTLE, PSEUDEMYX SCRIPTA ELEGANS. *Peptides*, 22, 873-878, 2001
16. **M. Li**, M. Mbikay and A. Arimura. PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE PRECURSOR IS PROCESSED SOLELY BY PROHORMONE CONVERTASE 4 IN THE GONADS. *Endocrinology*, 141 (10), 3723-3730, 2000
17. **M. Li**, M. Mbikay, K. Nakayama, A. Miyata and A. Arimura. PROHORMONE CONVERTASE PC4 PROCESSES THE PRECURSOR OF PACAP IN THE TESTIS. *Ann. N. Y. Acad. Sci.*, 921, 333-339, 2000
18. A. Somogyvari-Vigh, D. Reglodi, **M. Li**, I. Lengvari, S. Vigh and A. Arimura. TISSUE DISTRIBUTION OF PACAP27 AND -38 IN OLIGOCHAETA: PACAP27 IS THE PREDOMINANT FORM IN THE NERVOUS SYSTEM OF LUMBRICUS POLYPHEMUS. *Peptides*, 21 (8), 1185-1191, 2000
19. A. Miyata, H. Sano, **M. Li**, Y. Matsuda, H. Kaiya, K. Sato, H. Matsuo, K. Kangawa and A. Arimura. GENOMIC ORGANIZATION AND CHROMOSOMAL LOCALIZATION OF THE MOUSE PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE (PACAP) GENE. *Ann. N. Y. Acad. Sci.*, 921, 344-348, 2000
20. **M. Li**, Y. Shuto, A. Somogyvari-Vigh and A. Arimura. PROHORMONE CONVERTASES 1 AND 2 PROCESS PROPACAP AND GENERATE MATURED, BIOACTIVE PACAP38 AND PACAP27 IN TRANSFECTED RAT PITUITARY GH₄C₁ CELLS. *Neuroendocrinology*, 69, 217-226, 1999
21. **M. Li**, K. Nakayama, Y. Shuto, A. Somogyvari-Vigh and A. Arimura. TESTIS-SPECIFIC PROHORMONE CONVERTASE PC4 PROCESSES THE PRECURSOR OF PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE (PACAP). *Peptides*, 19 (2), 259-268, 1998
22. C. G. Yu, **M. Li**, J. Z. Mo and S. D. Xiao. EFFECTS OF PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE ON ADENOSINE 3', 5-MONOPHOSPHATE AND CELL GROWTH IN HUMAN GASTRIC CARCINOMA CELL LINE. *Chin. J. Gastroenterol.*, 3, 194-198, 1998
23. **M. Li**, S. Shioda, A. Somogyvari-Vigh, H. Onda, and A. Arimura. SPECIFIC ANTIBODY RECOGNITION OF RAT PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE RECEPTORS. *Endocrine*, 7 (2), 183-190, 1997
24. C. G. Yu, **M. Li**, J. Z. Mo and S. D. Xiao. INHIBITION OF GASTRIC CARCINOMA CELL GROWTH BY PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE. *Chin. J. Gastroenterol.*, 2, 98-100, 1997

25. **M. Li**, A. Miyawaki, M. Yamamoto-Hino, D. Yasutomi, T. Furuichi, M. Hasegawa and K. Mikoshiba. DIFFERENTIAL CELLULAR EXPRESSION OF THREE TYPES OF INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR IN RAT GASTROINTESTINAL EPITHELIUM. *Biomed. Res.*, 17 (1), 45-52, 1996
26. **M. Li**, L. Q. Zheng, M. Hoshino, M. Suzuki, A. Habu, K. Iguchi, C. Yanaihara, T. Mochizuki and N. Yanaihara. CHOLERA TOXIN ENHANCED CAMP PRODUCTION STIMULATED BY PACAP IN HUMAN NEUROBLASTOMA NB-OK-1 CELLS. *Biomed. Res.*, 15 (suppl. 2), 233-240, 1994
27. M. Hoshino, **M. Li**, L. Q. Zheng, M. Suzuki, K. Iguchi, C. Yanaihara, T. Mochizuki and N. Yanaihara. EFFECT OF PACAP38, PACAP27 AND VIP ON HUMAN NEUROBLASTOMA NB-OK-1 CELLS. In: *International Symposium on VIP and PACAP and Related Regulatory Peptides: From Molecular Biology to Clinical Applications*. (ed. G. Rosselin), World Scientific Publishing Co. Pte. Ltd., Singapore, 577-586, 1994
28. **M. Li**, L. Q. Zheng, M. Hoshino, M. Suzuki, K. Iguchi, C. Yanaihara, T. Mochizuki and N. Yanaihara. HELODERMIN-AFFINITY RECEPTORS ON HUMAN NEUROBLASTOMA NB-OK-1 CELLS. In: *International Symposium on VIP and PACAP and Related Regulatory Peptides: From Molecular Biology to Clinical Applications*. (ed. G. Rosselin), World Scientific Publishing Co. Pte. Ltd., Singapore, 173-178, 1994
29. C. Yanaihara, A. Kuwahara, M. Suzuki, M. Hoshino, **M. Li**, L. Q. Zheng, K. Kashimoto, Y. Takeda, K. Iguchi, T. Mochizuki and N. Yanaihara. NOVEL CCK ANALOGUES FOR STUDYING CCK-B RECEPTORS. In: *Cholecystokinin and Related Peptides*, Ann. N.Y. Acad. Sci. (eds. J. R. Reeve, Jr., et al.), The New York Academy of Sciences, New York, 713, 107-117, 1994
30. **M. Li**, M. Hoshino, L. Q. Zheng, S. Naruse, C. Yanaihara, K. Ohshima, K. Iguchi, T. Mochizuki and N. Yanaihara. HELODERMIN ANALOGUES: STRUCTURE-FUNCTIONAL STUDIES OF HELODERMIN. *Biomed. Res.*, 14 (suppl. 3), 61-69, 1993
31. M. Hoshino, **M. Li**, L. Q. Zheng, M. Suzuki, T. Mochizuki and N. Yanaihara. PITUITARY ADENYLATE CYCLASE ACTIVATING PEPTIDE AND VASOACTIVE INTESTINAL POLYPEPTIDE: DIFFERENTIATION EFFECTS ON HUMAN NEUROBLASTOMA NB-OK-1 CELLS. *Neurosci. Lett.*, 159, 35-38, 1993
32. N. Yanaihara, T. Mochizuki, N. Takatsuka, K. Iguchi, K. Sato, H. Kakuyama, **M. Li** and C. Yanaihara. GALANIN ANALOGUS: AGONIST AND ANTAGONIST. *Regul. Pept.*, 46, 93-101, 1993
33. M. Hoshino, **M. Li**, L. Q. Zheng, K. Tahino, M. Suzuki, T. Mochizuki and N. Yanaihara. THE RECEPTORS OF THE PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE (PACAP) IN HUMAN NEUROBLASTOMA. In: *Gut Hormone (XII)* (Japanese), The Gut Hormone Research Society, The Medical Library Publishing Co. Ltd., Tokyo, 158-163, 1993
34. **M. Li**, M. Hoshino and N. Yanaihara. ISOLATION OF LARGE VIP-RELATED PEPTIDES IN HUMAN NEUROBLASTOMA. *Biomed. Res.*, 13 (suppl.2), 47-50, 1992

35. **M. Li**, C. Y. Zhu and J. M. Yuan. RADIOIMMUNOASSAY OF PLASMA TRANSFERRIN AND ITS CLINICAL APPLICATIONS. *The Journal of Shanghai Second Medical University* (Chinese), 14 (Suppl.), 96-98, 1994
36. G. H. Lu, **M. Li**, J. M. Yuan and S. J. Jiang. RELATIONSHIP BETWEEN GRAVE'S AND HASHIMOTO'S DISEASES: CLINICAL IMMUNOLOGICAL AND PATHOLOGICAL ANALYSIS OF 102 CASES. *Shanghai Medicine* (Chinese), 12, 509-512, 1989

Book Chapter

Min Li, Tomoya Nakamachi and Akira Arimura. PACAP/VIP. In: Handbook of Biologically Active Peptides, Editor: Abba J. Kastin, SECTION ON BRAIN PEPTIDES, Chapter 94, Sub-editor: Hubert Vaudry, Academic Press, Elsevier Inc., USA, 673-681, 2006

Papers Presented at Scientific Meetings (Abstracts selected from 30 presentations since 2000)

1. **M. Li**, S. Balamuthusamy, W. Cai, K. E. Gullo, J. L. Maderdrut, T. G. Voss, E. E. Simon and V. Batuman. Pituitary Adenylate Cyclase-Activating Polypeptide Ameliorates Cisplatin-Induced Renal Injury *In Vitro* and *In Vivo*. The American Society of Nephrology's 41th Annual Renal Week Meeting, November 4 - 9, 2008, Philadelphia, Pennsylvania.
2. S. Sengul, **M. Li**, S. Erturk and V. Batuman. Effect of Receptor-Associated Proximal Tubular Cells. The American Society of Nephrology's 41th Annual Renal Week Meeting, November 4 - 9, 2008, Philadelphia, Pennsylvania.
3. S. Balamuthusamy, **M. Li**, C. Primo, A. Wei, E. E. Simon and V. Batuman. Statins Decrease Cytotoxicity and Reduce IL-6 and MCP-1 Release in Light Chain Exposed HK2 Cells. The American Society of Nephrology's 41th Annual Renal Week Meeting, November 4 - 9, 2008, Philadelphia, Pennsylvania.
4. **M. Li**, W. Cai, C. E. Primo, K. S. Hering-Smith, E. E. Simon and V. Batuman. SILENCING MEGALIN AND CUBILIN GENES INHIBITS MYELOMA LIGHT CHAIN ENDOCYTOSIS AND AMELIORATES ITS TOXICITY IN HUMAN RENAL PROXIMAL TUBULE EPITHELIAL CELLS. The ASN's 40th Annual Renal Week Meeting, October 31-November 5, 2007, San Francisco, California
5. **M. Li**, K. S. Hering-Smith, E. E. Simon and V. Batuman. MYELOMA LIGHT CHAINS INDUCE EPITHELIAL-MESENCHYMAL TRANSITION IN HUMAN RENAL PROXIMAL TUBULE EPITHELIAL CELLS: A POTENTIAL ROLE IN RENAL FIBROSIS AND POSSIBLE INTERVENTION BY BMP-7 AND PACAP. American Federation of Medical Research and Southern Society for Clinical Investigation Southern Regional Meetings, February 8-10, 2007, New Orleans, Louisiana
6. **M. Li**, K. S. Hering-Smith, E. E. Simon and V. Batuman. MYELOMA LIGHT CHAINS INDUCE EPITHELIAL-MESENCHYMAL TRANSITION IN HUMAN RENAL PROXIMAL TUBULE EPITHELIAL CELLS: A

- POTENTIAL ROLE IN RENAL FIBROSIS. The ASN's 39th Annual Renal Week Meeting, November 14-19, 2006, San Diego, California
7. A. Arimura, S. Cortez, T. Nakamachi and **M. Li**. PROTECTION OF RENAL DAMAGE BY PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE (PACAP38) IN THE DIABETIC NEPHROPATHY MODEL. The Endocrine Society's 88th Annual Meeting, June 24-27, 2006, Boston, Massachusetts
 8. **M. Li**, S. Cortez and A. Arimura. THERAPEUTIC POTENTIAL OF PACAP IN MULTIPLE MYELOMA. The 7th International Symposium on VIP, PACAP and Related Peptides, September 11-14, 2005, Rouen, France
 9. A. Arimura, **M. Li** and V. Batuman, TREATMENT OF RENAL FAILURE ASSOCIATED WITH MULTIPLE MYELOMA AND OTHER DISEASES BY PACAP38, The 7th International Symposium on VIP, PACAP and Related Peptides, September 11-14, 2005, Rouen, France
 10. T. Nakamachi, **M. Li**, C. David, S. Shioda and A. Arimura, SIGNALING CASCADE INVOLVED IN PACAP-INDUCED EXPRESSION OF ACTIVITY DEPENDENT NEUROTROPHIC PROTEIN IN MOUSE NEURO-GLIA CO-CULTURES, The 7th International Symposium on VIP, PACAP and Related Peptides, September 11-14, 2005, Rouen, France
 11. **M. Li** and A. Arimura. PITUITARY ADENYLATE CYCLASE ACTIVATING POLYPEPTIDE IS A POTENT INHIBITOR OF MYELOMA CELL GROWTH. The Endocrine Society's 87th Annual Meeting, June 4-7, 2005, San Diego, California
 12. **M. Li** and A. Arimura. THE SIGNALING CASCADE REGULATED BY THE MAJORITY OF TESTICULAR PACAP RECEPTORS IS INDEPENDENT OF HETEROTRIMERIC G-PROTEINS. The Endocrine Society's 86th Annual Meeting, June 16-19, 2004, New Orleans, Louisiana
 13. C. David, **M. Li** and A. Arimura. STIMULATION OF ACTIVITY DEPENDENT NEUROTROPHIC FACTOR (ADNF) EXPRESSION BY FEMTOMOLAR PITUITARY ADENYLATE CYCLASE ACIVATING POLYPEPTIDE (PACAP) IN NEURO/GLIA CO-CULTURES. The 2003 Annual Meeting of The Society for Neuroscience. November 8-12, 2003, New Orleans, Louisiana
 14. **M. Li**, S. Shioda, H. Funahashi, C. David and A. Arimura. PACAP-MEDIATED INTRACRINE SIGNALING IN THE TESTIS. The 6th International Symposium on VIP, PACAP and Related Peptides, September 1-4, 2003, Hakone, Japan
 15. T. Kikuta, C. David, **M. Li**, T. Quebedaux and A. Arimura. CULTURE CONDITIONS OF NEURON THAT AFFECT THE NEUROTOXIC EFFECT OF LPS AND THE NEUROPROTECTIVE EFFECT OF PACAP. The 6th International Symposium on VIP, PACAP and Related Peptides, September 1-4, 2003, Hakone, Japan
 16. **M. Li**, Shioda S., Arimura, A. PACAP-MEDICATED INSTRACRINE SIGNALING IN THE TESTIS. The Endocrine Society's 85th Annual Meeting, June 19-22, 2003, Philadelphia, Pennsylvania
 17. A. Arimura, T. Kikuta, T. Seki, **M. Li**, C. David and J. Maderdrut. SIGNALING CASCADE INVOLVED IN NEUROPROTECTION BY FEMTOMOLAR

- LEVELS OF PACAP. Summer Neuropeptide 2003 Conference, June 8-12, 2003, Montauk, New York
18. A. Arimura, **M. Li**, A. Somogyvari-Vigh and J. Maderdrut. DIFFERENT CONCENTRATIONS OF PACAP TRIGGER DIFFERENT SIGNALING PATHWAYS IN NERUO/GLIA CO-CULTURES AND GLIA CELLULAR RELEVANCE TO NEUROPROTECTION BY FEMTOMOLAR OR NANOMOLAR CONCENTRATION OF PACAP38. 31th Annual Meeting of Society for Neuroscience, November 10-15, 2001, San Diego, California
 19. **M. Li**, S.C. Sikka and A. Arimura. EXPRESSION AND MOLECULAR DIVERSITY OF PACAP/VIP RECEPTORS IN RAT TESTIS AND HUMAN SPERMATOOZOA. The Endocrine Society's 83th Annual Meeting, June 20-23, 2001, Denver, Colorado
 20. T. Kikuta, T. Kozicz, Y. Oki, **M.L i** and A. Arimura. DIFFERENTIAL EFFECTS OF UROCORTIN ON CYTOKINE EXPRESSION DURING STRESS. The Endocrine Society's 83th Annual Meeting, June 20-23, 2001, Denver, Colorado
 21. **M.Li**, D.Hurley, T.Kikuta and A.Arimura. THE PACAP RECEPTOR IN THE TESTIS IS NOT ASSOCIATED WITH MEMBRANES, BUT IS PRESENT IN THE SOLUBLE FRACTION, AND IS COUPLED TO THE MAPK PATHWAY. Serono Symposia USA, XIIIth Ovarian Workshop: Molecular and Cellular Basis of Paracrine, Autocrine and Juxtacrine Communication in the Ovary, July 12-14, 2000, Madsion, Wisconsin
 22. **M.Li**, M.Mbikay and A.Arimura. ABSENCE OF PACAP IN THE GONADS OF PC4-DEFICIENT MICE WITH IMPAIRED FERTILITY. 82th Annual Meeting of the Endocrine Society, June 21-24, 2000, Toronto, Ontario, Canada

Research Support

Active Research Projects:

Design, Delivery and Development of Therapeutic Peptides: Development of Peptide Therapeutics for Multiple Myeloma and Myeloma Kidney
Louisiana Board of Regents (013RCEEP-07), Research Commercialization and Educational Enhancement Program October 2007 - September 2010
Principle Investigator of Project 7 and Investigator on Project 3, 5, and 6

The overall goal of this program project-type grant is to develop peptide-based therapeutics for major medical disorders. Project 7 involves the design and development of analogs of pituitary adenylate cyclase-activating polypeptide as therapeutics for myeloma myeloma and related kidney diseases.

Study of Pituitary Adenylate Cyclase-Activating Polypeptide for Multiple Myeloma
The Kaken American Foundation, July 1, 2008 – June 30, 2011.
Principle Investigator

The major goal of this project is to development of peptide therapeutics for multiple myeloma. Development of myeloma kidney and PACAP treatment in pre-clinical animal models will provide a solid foundation for subsequent detailed preclinical testing of the continuous administration of PACAP as an effective and safe renoprotectant in multiple myeloma.

Completed Research Support:

Renoprotection in Multiple Myeloma by Pituitary Adenylate Cyclase Activating Polypeptide
September 2005 - March 2007
Multiple Myeloma Research Foundation 2005 Fellows' Research Award
Principle Investigator

Renal failure in multiple myeloma complicates treatment and shortens life span. The goals of this project are to further study 1) the inhibitory effect of PACAP38 on the growth and survival of human *kappa* and *lambda* light chain-secreting myeloma cells in the presence of bone marrow stromal cells, 2) the role of epithelial-mesenchymal transition as a potential mechanism contributing to the characteristic tubulointerstitial renal fibrosis in multiple myeloma, and 3) hemodynamics of renoprotection by chronic administration of PACAP38 in human with multiple myeloma and myeloma kidney.

Therapeutic Potential of PACAP in Multiple Myeloma and Myeloma Kidney
Kaken American Foundation
February 2007 - January 2008
Co-Principle Investigator (PI: Akira Arimura)

Pending Research Proposal:

Targeting B-Cell Neoplasms with Magnetically-Directed PACAP Nanospheres
National Cancer Institute
December 2008 - November 2013
Principle Investigator

Drug resistance and significant side-effects of chemotherapy is common in hematological malignancies and implies a much worse prognosis. This project will develop magnetically-directed peptide nanospheres targeted specifically to the bone marrow for plasma cell neoplasms. These advances should help to delineate pathophysiological mechanisms of plasma cell cancer and related complications to design novel therapeutic approaches for subsequent detailed preclinical testing.

Patent

Provisional Application for U.S. Patent: THE USE OF PITUITARY ADENYLATE CYCLASE-ACTIVATING POLYPEPTIDE (PACAP) AND PACAP ANALOGS AS ADJUNCTIVE TREATMENTS WITH ANTICANCER AGENTS, Label No.: EQ 494710299 US, Inventors: **Min Li**, New Orleans, LA (US); Jerome L. Maderdrut, New Orleans, LA (US); David H. Coy, New Orleans, LA (US); **Vecihi Batuman**, New Orleans, LA (US), Assignee: The Administrators of the Tulane Educational Fund, September 25, 2008.

International Patent No. WO 2006012394
June 2, 2006
Entitled: Treatment of Renal Dysfunction and Multiple Myeloma Using PACAP Compounds

The present invention relates to methods and compns. for the treatment, management, or prevention of multiple myeloma and/or renal dysfunction in mammals. The methods of the invention comprise the administration of an effective amt. of one or more pituitary adenylate cyclase activating polypeptide ("PACAP") compds., which includes PACAP, vasoactive intestinal peptide ("VIP"), their agonists, analogs, fragments, or derivs., having one or more PACAP activities. The invention also provides pharmaceutical

comps. comprising one or more PACAP compds. of the invention either alone or in combination with one or more other prophylactic/therapeutic agents useful in therapy for the treatment, management, or prevention of multiple myeloma and/or renal dysfunction.