

CURRICULUM VITAE
Mukut Sharma, Ph.D.
Assistant Professor of Medicine
Division of Nephrology

<u>Education and Training:</u>	1969	B.Sc., Chemistry, Biology University of Jodhpur Jodhpur India
	1971 – 1979	M.Sc., Ph.D., Biochemistry MS University of Baroda Baroda, India
	1-0	Post-Doc - Neurobiology Ohio State University UCLA, California
	1982	Fellowship, Neurobiology University of Lausanne Lausanne, Switzerland
	1990 – 1994	Res. Fellowship, Nephrology Kansas University Medical Center

1995 - Workshop on Modern Methods in Analytical Morphology, organized by Cell Vision, Journal of Analytical Morphology, Deborah Research Institute, Browns Mills, NJ, USA

1995 - Molecular Biology Workshop, New England Biolabs and Smith College, Northampton, MA, USA

2000 - Workshop on techniques of proteomics MALDI-TOF Mass Spectrometry Workshop, Medical College of Wisconsin, Milwaukee, WI, USA

2004 - Workshop on Multiphoton Intravital Microscopy, Indiana Center for Biological Microscopy, O'Brien Center, Division of Nephrology, Indiana University School of Medicine, Indianapolis, IN, USA

2006- Indiana University O'Brien center intravital microscopy of the kidney. Division of Nephrology, Indiana University of Medicine, Indianapolis, IN, USA.

Academic Honors and Awards

1966	Higher Secondary School with distinction in Biology
1971	Master of Science with first rank, Anil Starch Prize
1979	The Rotary Foundation Fellowship Award from India
1982	United Nations Development Program Fellowship
2003	Department of Medicine, Research Day, Best Poster Award, (McCarthy, ET et al)
2005	Department of Medicine, Research Day, Best Poster Award, (McCarthy, ET et al)
2005	Harry Goldblatt Award for research published in the journal Hypertension, (Dahly-Vernon AJ et al Hypertension 45;643-648, 2005)
2006	8 th Winter Eicosanoid Conference, Baltimore, MD. Travel award (Sharma M. et al)

Faculty Appointments:

1994 – Present	Assistant Professor, Nephrology Division
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1990 – 1994	Department of Medicine, Medical College of Wisconsin Milwaukee, WI, USA Senior Research Associate, Nephrology Division
1987 – 1990	Department of Medicine Kansas University Medical Center Kansas City, KS, USA Director, R&D and Market Planning
1986 – 1987	Ira Lab Private Limited Baroda, India Manager (Technical)
1984 – 1986	Ira Lab Pvt. Ltd Baroda, India Reader (Associate Professor)
1976 – 1984	Department of Biochemistry MS University of Baroda, India Lecturer (Assistant Professor)
1975 – 1976	Department of Biochemistry MS University of Baroda, India Research Fellow
1973 – 1975	Department of Biochemistry MS University of Baroda, India Biochemist, Clinical Laboratory SDM Clinic
1972 – 1973	Degana, India Research Scholar University of Jodhpur
1971 – 1972	Jodhpur, India Research Fellow Indian Institute of Science Bangalore, India

Memberships in Professional and Honorary Societies:

1980 – 1986	Indian Society of Biological Chemists
1995 – Present	American Society of Nephrology
2000 – Present	Radiation Research Society
2000 – Present	Society for Experimental Biology and Medicine
2002 – Present	Society for Free Radical Biology and Medicine
2004 – Present	International Society of Nephrology

Teaching and Administration

1-0.0	Master of Science level teaching in Biochemistry, Membrane Biology, Molecular Biology. Teaching responsibilities included development of new additions to the curriculum, 2-3 lectures x 1.5 hr each/week.
1975 - 1986	Department of Biochemistry, MS University, Baroda, India Weekly and monthly tests, annual examinations and evaluation of papers, Department of Biochemistry, MS University, Baroda, India
1975 – 1986	Laboratory courses in Biochemistry for MS and Diploma students. 2-3 x 4-6 hr each labs, Department of Biochemistry, MS University, Baroda, India

- 1975 – 1986 Member of Admissions Committee, Library Committee, Department of Biochemistry, MS University, Baroda, India
- 1980, 1982 Member Organizing-Committees for an International Conference and an International Workshop, Department of Biochemistry, MS University, Baroda, India
- 1976-1986 Operation and management of a 6-12 member Teaching and Research Laboratory, Weekly Research Conferences, Department of Biochemistry, MS University, Baroda, India
- 1991-1994 Operation and management of Research Laboratory, Nephrology Division, Kansas University Medical Center, Kansas City, KS, USA
- 1994- Present Operation and management of Research Laboratory, Nephrology Division, Medical College of Wisconsin, WI, USA
- 1994-present Operation and management of the Center for Studies on Glomerular Pathophysiology that serves as a facility for teaching and training as well as for testing serum specimens from patients with FSGS during pre-transplant evaluation and post-transplant management
- 2000-2001 Basic Science Lecture Series “Search for Etiologic Factors: From Clinical Findings to Proteomics”, Fellowship Training, Department of Medicine, Medical College of Wisconsin, WI, USA

Institutional Committees and Voluntary Services

- Admissions Committee, Biochemistry Department, MS University, Baroda, India.
Library Committee, Biochemistry Department, MS University, Baroda, India.
Library Committee, Medical College of Wisconsin, Milwaukee, USA. (2005 - Present)

Research Supervision and Membership of Advisory Committees

- 1978 - 1986 Collaboration with senior faculty that resulted in 4 doctoral dissertations
Department of Biochemistry, MS University, Baroda, India
- 1980 – 1986 Supervision of research dissertations by candidates for Master of Science (M.Sc.) in Biochemistry. Fourteen total dissertations. Department of Biochemistry, MS University, India
- 2005 Member of the Advisory Committee for Ph.D. dissertation of Annette Dahly-Vernon, Department of Physiology, Medical College of Wisconsin, Milwaukee
- 2006 Member of the Advisory Committee for PhD dissertation by Arthur Rangel-Filho, Department of Physiology, Medical College of Wisconsin, Milwaukee.

Supervision of Research/Training (1994-Present)

- KE Guglielmi, M.D., Nephrology Fellow (1997-98).
Ashraf Tamizzudin, M.D., Nephrology Fellow (1998-99).
Margi Bhat, M.D., Pre-Residency Research Training (1998-2000).
Samir Vadhvania, M.D., Pre-Residency Research Training (1998-2000).
Prasad Reddy, M.D., Pre-Residency Research Training (1998-2000).
R.K. Rao, M.D., Pre-Residency Research Training (1999-2001).
Yashwant Chowdhary, M.D., Nephrology Fellow (2000 – 2001).
Ganesh Shidham, M.D., Nephrology Fellow (2001- 2002).
Ron Zuiderweg, M.D., Resident, Internal Medicine, Research Rotation (2003)
Flora Isaacs, M.S., Pre-Doctoral Research Training (2003-Present).

Jaya Bhojak, M.S. Visiting Doctoral Student (2003-Present).

Deepak Sharma, M.D., Pre-Residency Research Training, Research Rotation, Internal Medicine Residency Program (2002-2003, 2004).

David Ramenofsky, Medical Student, Medical College of Wisconsin, Milwaukee, Summer Research Program (2004).

Sushma Anne, MS, Laboratory Technician (2005).

Abir Chaudhry, BS Trainee Research Assistant (2005-2006)

Mamatha Pannini, MBBS, Research Trainee (2006-)

Ruchi Singhal, MS, Research Assistant (2006-)

Faculty Development/Continuing Education

Nephrology Division Research Conference (1995 – present 1/yr)

Invited Reviewership

Nephron

Nephrology Dialysis and Transplantation

Kidney International

Conference Abstract Selection Reviewer

Society for Free Radical Biology and Medicine

Collaboration with Industry

1. Developed iron fortified table salt in India for a private group of industries from Kenya (1986-90).
2. Signed a non-disclosure agreement with Genzyme Corporation, USA, for identification of the active component(s) in purified fraction from FSGS plasma (October 2004).
3. Confidentiality disclosure agreement signed with Sigma Tau, Italy, for developing therapeutic agents for management of FSGS (November 2004).
4. Agreement with Japan Tobacco Corporation, Japan, to undertake determination of the circulating activity in serum samples from patients with FSGS/minimal change disease (2005).

Collaborations with other Departments/Institutions:

1. Department of Pharmacology (Drs. OP Gulati, M.D., S. Desai, M.D.), Medical College of Baroda, India. "Pharmacokinetics and metabolism of rifampicin in malnourished patients of tuberculosis and in protein deficient rats". (Ph.D. dissertation to study the role of cytochrome P450, 1982-1985).
2. Department of Medicine (Dr. Kamal Pathak, M.D.), Medical College of Baroda, India. "Serum levels of trace elements (copper and zinc) in tuberculosis patients". (M.D. Dissertation, 1983-1984).
3. Department of Medicine (Dr. Kamal Pathak, M.D.), Medical College of Baroda, India. "Separation of hemoglobin fractions using high performance liquid chromatography and

- association of changes in the levels of glycosylated hemoglobin with diabetes”. (M.D. dissertation, 1985-1986).
4. Department of Radiation Oncology (Dr. John E. Moulder, Ph.D.), Medical College of Wisconsin, Milwaukee. Research collaboration on the treatment of radiation nephropathy using ACE inhibitors and ARBs.” (1998-ongoing)
 5. Department of Physiology (Dr. Richard J. Roman, Ph.D.), Medical College of Wisconsin, Milwaukee. “Protective effect of anti-TGF- α 1 antibody on renal fibrosis in salt-induced hypertension”. (Ph.D. dissertation, 2002-2005).
 6. Human Molecular and Genetics Center (Drs. Howard J. Jacob, Ph.D and Jozeph Lazar, M.D.), Medical College of Wisconsin. “Studies on the interaction between two loci, Rf-1 and Rf-4, in hypertension-induced renal failure”. (Ph.D. Dissertation of Michelle Feldmann, 2003-ongoing).
 7. Human Molecular and Genetics Center, (Drs. Howard J. Jacob, Ph.D. and Jozeph Lazar, M.D.), Medical College of Wisconsin. “Positional cloning of the Rf-2 gene and its role in the pathophysiology of renal disease in FHH rat”. (Ph.D. Dissertation of Artur Rangel-Filho, 2003-ongoing).
 8. Human Molecular and Genetics Center, (Drs. Howard J. Jacob, Ph.D. and Jozeph Lazar, Ph.D.), Medical College of Wisconsin. Studies on identification of chromosomal regions associated with renal failure. (2003-ongoing).
 9. Human Molecular and Genetics Center, (Drs. Howard J. Jacob, Ph.D. and Jozeph Lazar, M.D.), Medical College of Wisconsin. “Positional cloning of the Rf-2 gene and its role in the pathophysiology of renal disease in FHH rat”. (Ph.D. Dissertation of Artur Rangel-Filho, 2003-ongoing).
 10. Human Molecular and Genetics Center, (Drs. Howard J. Jacob, Ph.D. and Jozeph Lazar, M.D.), Medical College of Wisconsin. Studies on identification of chromosomal regions associated with renal failure. (2003-ongoing).
 11. Pulmonary and Critical Care Medicine, Department of Medicine (Dr. Meetha M. Medhora, PhD), Medical College of Wisconsin. Functions of epoxyeicosatrienoic acids. (2002-onging).
 12. Nephrology Research Laboratory (Drs. Thomas Wiegmann, MD and Dr. Ram Sharma, PhD), VA Medical Center, Kansas City, MO. Studies on type 2 diabetes. (2000-ongoing).
 13. Nephrology Division, Department of Medicine (Dr. Bruce Molitoris, MD and Dr. Kenneth Dunn, PhD). Indiana University, Intravital Microscopy of renal function. (2003-)
 14. Division of Nephrology, Department of Medicine (Dr. Ellen T. McCarthy, MD), Kansas Univerisity Medical Center, Kansas City, KS. Eiscosanoids in glomerular filtration barrier and renal function. (2006-)
 15. Department of Cell Biology and Anatomy (Dr. Vince Gattone, PhD), Indiana University, Indianapolis, IN. Electron microscopy of the renal ultrastructure. (2000-)
 16. Department of Biochemistry, (Dr. John R. Falck, PhD). University of Texas Southwestern Medical Center, Dallas, TX. (2004-)

Invention Disclosures/ Patent Applications:

1. "Use of a specific bioassay to detect the presence of a causative factor in the plasma of patients with recurrent focal segmental glomerulosclerosis and removal of this factor by a specific binding material, including the use in therapy of patients with kidney disease." Virginia J. Savin, Mukut Sharma, Ellen T McCarthy, Ram Sharma, Nephrology Division, Department of Medicine, Medical College of Wisconsin, Milwaukee. October 2001.
2. "Protective actions of 20-HETE agonists against renal disease" Richard J. Roman, Annette Dahly-Vernon, Mukut Sharma, Department of Physiology and Nephrology Division, Department of Medicine, Medical College of Wisconsin, Milwaukee. September 2004.
3. "Glomerular protective actions of 20-HETE and its agonist in model of minimal change disease" Ellen T McCarthy, Mukut Sharma, Richard J. Roman, Virginia J. Savin Nephrology Division, Department of Medicine and, Department of Physiology. Medical College of Wisconsin, Milwaukee. October 2004.
4. "8,9-epoxyeicosatrienoic acid (8,9-EET) and its analogs protect the glomerular structure/function to prevent increased albumin filtration and albuminuria/proteinuria". Mukut Sharma, Meetha Medhora, John R. Falck, Ellen T. McCarthy. Divisions of Nephrology and Medicine, Department of Medicine, Medical College of Wisconsin, Milwaukee. Department of Biochemistry, University of Texas Southwestern Medical Center, Dallas, TX. March 2006.

Research Projects Completed:

Title: "Studies on the effects of nutritional and physiological stress on phosphoinositide metabolism in rat intestine".

Principal Investigator: S.D. Bhandari

Co-Investigator: Mukut Sharma

Funding agency: University Grants Commission of India, New Delhi, India.

Funding period: June 1980- May 1983.

Title: "Effects of nutritional deficiencies on ganglioside metabolism in the central nervous system of the rat".

Principal Investigator: C.V. Ramakrishnan

Funding agency: University Grants Commission of India, New Delhi, India.

Funding period: June 1982- May 1985.

Title: "Effects of interactions of gestational undernutrition and alcohol intake on the capacity of newborn rat brain astrocytes and oligodendrocytes to grow and mature *in vitro* in a chemically defined medium".

Principal investigator: Mukut Sharma

Funding Agency: University Grants Commission of India, New Delhi, India.

Funding period: June 1984-May 1987.

Title: "Studies on effect of purified components of *Tripterygium wilfordii* on glomerular protein permeability".

Principal Investigator: Mukut Sharma

Funding agency: Research Affairs Committee, Medical College of Wisconsin, Milwaukee.
Funding period: July 1997- June 1998.

Title: "Initial Effects of Irradiation on Glomerular Function".
Principal investigator: Mukut Sharma
Funding agency: Cancer Research Center, Medical College of Wisconsin, Milwaukee.
Funding period: 07/01/99-06/30/2000

Title: "Etiologic Factor in Focal Glomerulosclerosis".
Principal Investigator: Virginia J. Savin.
Co-Investigator: Mukut Sharma
Funding Agency: American Society of Nephrology
Funding period: 1997-1998

Title: "Renal Immune Injury- Nitric Oxide-Eicosanoid Interactions".
Principal Investigator: Elias A. Lianos.
Collaborator: Mukut Sharma
Agency: National Institutes of Health
Funding period: October 1996-2000

Title: "Early glomerular changes in radiation nephropathy".
Principal investigator: Mukut Sharma.
Agency/ID#: American Heart Association/North Central
Funding period: 07-01-2000-06/30/02

Title: "Control of glomerular permeability in an animal model of type 2 diabetes".
Principal investigator: Mukut Sharma.
Agency/ID#: Midwest Biomedical Research Foundation
Funding period: 01-01-2001-06/30/01

Title: "Studies on effect of purified components of *Tripterygium wilfordii* on glomerular protein permeability".
Principal Investigator: Mukut Sharma.
Agency: Research Affairs Committee, Medical College of Wisconsin, Milwaukee.
Funding period: July 1997- June 1998.

Title: "Initial Effects of Irradiation on Glomerular Function".
Principal Investigator: Mukut Sharma.
Agency: Cancer Research Center, Medical College of Wisconsin, Milwaukee.
Funding period: 07/01/99-06/30/2000

Title: "Etiologic Factor in Focal Glomerulosclerosis".
Principal Investigator: V.J. Savin.
Co-Investigator: Mukut Sharma
Agency: American Society of Nephrology
Funding period: 1997-1998

Title: "Etiologic Factor in Focal Glomerulosclerosis"
Principal Investigator: Virginia J. Savin.

Co-PI: Mukut Sharma.
Agency: NIH, RO1 DK43752-04
Funding Period: 7/1/98 - 6/30/01

Title: "Control of glomerular permeability by angiotensin II".
Principal Investigator: Virginia J. Savin.
Co-PI: Mukut Sharma.
Agency/ID#: Research Affairs Committee, Medical College of Wisconsin, Milwaukee.
Funding period: 07/01/2000-06/30/01

Title: "Effect of irradiation on glomerular arachidonic acid metabolism".
Principal Investigator: Ellen T. McCarthy.
Co-PI: Mukut Sharma.
Agency/ID#: Cancer Research Center, Medical College of Wisconsin, Milwaukee.
Funding period: 07/01/2000-06/30/2001

Title: "Effect of FSGS factor on arachidonic acid metabolism"
Principal Investigator: Ellen T. McCarthy.
Collaborator: Mukut Sharma.
Agency/ID#: NIH DK02587
Funding period: 07/01/1998-06/30/2004

Currently active projects:

Title: "Early biomarkers that indicate mitigation of radiation injury".
Principle Investigator: Mukut Sharma, Ph.D. (20% effort)
Co-Investigator: B Wakim, Brian Halligan, Virginia J. Savin
Type: Pilot grant, NIAID/NIH. Center for medical countermeasures against radiological terrorism.
Funding Period: 04/01/2006-03/31/2008

Title: "Kidney response to radiation and chemotherapy".
Principal Investigator: J. Moulder, Ph.D.
Co-investigator: Mukut Sharma, Ph.D. (16% effort)
Type: R01 (CA24652, years 19-23).
Funding Period: 12/1/1997-1/31/2007

Title: "Cytochrome P-450 and glomerular protein permeability".
Principal Investigator: Ellen T. McCarthy, M.D.
Co-Investigator: Mukut Sharma (50% effort).
Agency/ID#: NIH 1RO1 DK64969-01 A2
Funding period: 04/01/2005-03/31/2010

Title: "20-HETE-TGF- β in hypertension-induced renal injury"
Principal Investigator: Richard J Roman
Co-Investigator: Mukut Sharma (20% effort)
Agency: NIH Grant number 2 RO1 HL036279-19
Funding period: 04/01/2005-03/31/2010

Title: Post-Irradiation Intervention to Mitigate and Treat Non-Hematological Injuries.
Program Director: John E Moulder.
Role: Co-Investigator
Agency/ID# 1U 18 AI67734-01, "Centers for Medical Countermeasures Against Radiological Terrorism"
Funding Period: September 1, 2005-August 31, 2010.

Title: "Eicosanoids in Focal Segmental Glomerulosclerosis"
Principal Investigator: Ellen T. McCarthy, M.D.
Collaborator: Mukut Sharma, Ph.D.
Agency/ID#: NIDDK R03 DK061588-01.
Funding period: 07/01/2002-06/30/2005 (no cost extension)

Title: "Effect of FSGS Serum on Glomerular Albumin Permeability"
Principal Investigator: Virginia J. Savin, M.D.
Co-PI: Mukut Sharma, Ph.D. (5% effort)
Agency/ID#: NIDDK contract 263-MK-319027
Funding period: 01/01/2004-12/31/2005.

Title: "Early effects of Vpr on glomerular protein permeability".
Principal Investigator: Virginia J. Savin, M.D.
Co-PI: Mukut Sharma, Ph.D.
Agency/ID#: Research Affairs Committee, Medical College of Wisconsin, Milwaukee.
Funding Period: 01/01/2004-12/31/2005. Extended to 06/30/2006.

Research Proposals Pending Approval:

Title: "Innovative *in vitro* tests of glomerular permeability"
Principal Investigator: Mukut Sharma
Funding agency: NIDDK/NIH
Funding period: 1 July 2005- 30 June 2007.

Title: "Early Detection of Genetic Defect Related to Glomerular Injury in Hypertensive Rats"
Principal Investigator: Mukut Sharma
Funding agency: New Idea Grant, Research Affairs Committee, Medical College of Wisconsin, Milwaukee
Funding period: 1 July 2005- 30 June 2006.

Title: "Mass Spectrometric Characterization of the FSGS Factor"
Principal Investigator: Virginia J. Savin.
Funding agency: Faculty Inducement Grant, Biochemistry and Bioengineering Center, Medical College of Wisconsin, Milwaukee
Funding period: 1 July 2005- 30 June 2006.

Title: "Characterization of the FSGS Factor"
Principal Investigator: Mukut Sharma
Funding agency: Genzyme Corporation.
Funding period: 1 August 2005- 30 July 2006.

Invited Lectures/Workshops/Site Visits:

Bhavan's Institute, Dakor, Gujarat, India. "Structural organization and functions of the nervous system". (1985).

LJ Parekh and Mukut Sharma. "Biotechnology and the Industrial Chemist". Annual Meeting of Industrial Chemists of India. (1985).

Status Report on "Plant Biotechnology". Submitted to the Hon. Vice-Chancellor of Gujarat University, India. (1987).

National Institutes of Health, Laboratory of Metabolic Disorders, Dr. R.O. Brady and members of the group. (May 2000).

Kansas University, Department of Medicinal Chemistry and Pharmaceutical Chemistry, Prof. Gorge Gunda (December 2002).

University of Louisville, KY, Nephrology Division, Dr. Jon Klein and members of the research group, (December 2002).

Genzyme Corporation, Receptor Ligand Therapeutics Group, Dr. Susan Schiavi, (June 2004).

BIBLIOGRAPHY

Original Papers

1. Nakhasi HL, **Sharma M** and Singh H: Effects of nutritional deficiencies on the activity of 2',3'-cyclicnucleotide-3'- phosphohydrolase. *Exptl Neurol.* 57(3):659, 1977.
2. **Sharma M**, Swaminathan U and Aiyer M: Effects of neonatal undernutrition on rat brain phosphoinositides. *Ind J Biochem Biophys* 17:246, 1980.
3. Reddy TS, **Sharma M** and Horrocks LA: Effects of cycloleucine administration on the rat CNS lipids. *Baroda J Nutr* 7:21, 1980.
4. Singh H and **Sharma M**: Development of the rat during neonatal undernutrition. *Baroda J Nutr* 7:11, 1980.
5. Rajalakshmi R (Assistants-SD Telang and **M Sharma**): Malnutrition and the development of the brain. In: *CRC Handbook of Nutritional requirements in the functional context.* vol. I (Ed. R Miloslav) pp 289-364, CRC Press Inc, USA. 1981.
6. Horrocks LA and **Sharma M**: Plasmalogens and o-Glycerophospholipids. In: *New Comprehensive Biochemistry.* (Eds. A Neuberger and LLM van Deeden). vol 4: Phospholipids (Eds. JN Hawthorne and GB Ansell) pp 51-95, Elsevier Biomedical Press. 1982.
7. Ramakrishnan CV, Telang SD, Reddy TS, Uma S, **Sharma M** and Singh H: Nutrition and development of the CNS. In: *Proceedings of the International Workshop on Nutrition and Development of the Child.* (Ed. R Rajalakshmi), MS University Press, Baroda, India. pp 292, 1982.

8. **Sharma M**, Nakhasi HL, Ramakrishnan R, Ramakrishnan CV: Effects of different degrees of undernutrition on the lipid composition of the spinal cord in rats. In: Neuropeptides and Psychosomatic Processes.(Ed. Endrocz et al) pp 759-769,Separatum Akademiai Kiado, Publishing House of the Hungarian Academy of Sciences, Budapest, Hungary. 1983.
9. **Sharma M**: Nucleic acids and Proteins of the Nervous System. International Workshop on Neurobiology: Biochemistry, Department. MS University, Baroda, India, 1984.
10. Mukherji RAG, Oza RM and **Sharma M**: Neuropathology: International Workshop on Neurobiology, Biochemistry Department, MS University, Baroda, India. 1984.
11. Vaswani K and **Sharma M**: Effects of neonatal undernutrition on rat brain gangliosides. Intl J Vit Nutr Res 55:323-329, 1985.
12. Ye M, Grant M, **Sharma M**, Elzinga L, Swan S, Torres VE, and Grantham JJ: Cyst fluid from human autosomal dominant polycystic kidneys promotes cyst formation and expansion by renal epithelial cells. J Amer Soc Neph 3:984-994, 1992.
13. Grantham JJ, Ye M, Davidow C, Holub B, **Sharma M**: Evidence for a potent lipid secretagogue in the cyst fluids of patients with autosomal dominant polycystic kidney disease. J.Am Soc Neph.6:1242-1249, 1995.
14. Savin VJ, Sharma R, **Sharma M**, McCarthy ET, Swan SK, Ellis E, Lovell H, Warady B, Gunwar S, Wood E, Chonko AM, Fine R, Trachtman H, Artero M and Vinceti F: Circulating factor in recurrent focal segmental glomerularsclerosis.New Eng J Med., 334:878-883, 1996.
15. Sharma R, **Sharma M**, Ge Xiu Li, McCarthy ET, Savin VJ. Cyclosporine protects glomeruli from FSGS factor via an increase in glomerular cAMP. Transplantation Dec 27; 62(12): 1916-1920, 1996.
16. Sharma R., **Sharma M** Li JZ., McCarthy ET and Savin VJ: Direct effect of Platelet-Activating factor on glomerular capillary permeability. Kidney & Blood Pressure Research. Vol. 20(1): 25-30, 1997.
17. **Sharma M**, Li JZ, Sharma R, Artero M, Ge Xiu Li, McCarthy ET, Wang HY, Savin VJ: Inhibitory effects of *Trypterygium wilfordii* multiglycosides on increased glomerular permeability *in vitro*. Nephrol Dial Transplant 12:2064-2068, 1997.
18. **Sharma M**, Sharma R, Greene AS, McCarthy ET and Savin VJ: Documentation of angiotensin II receptors in glomerular epithelial cells. Amer J Physiol 274 (Renal Physiol 43):F623-F627, 1998.
19. McCarthy ET, Sharma R, **Sharma M**, Li JZ, Ge X, Dileepan KN, Savin VJ: Tumor Necrosis Factor- α increases albumin permeability of isolated rat glomeruli through the generation of superoxide. J Amer Soc Nephrol 9:433-438, 1998.
20. Lianos EA, Guglielmi K, and **Sharma M**: Regulatory interactions between inducible nitric oxide synthase and eicosanods in glomerular immune injury. Kidney Int 53:645-653, 1998.

21. Feld SM, Figueroa P, Savin V, Nast CC, Sharma R, **Sharma M**, Hirschberg R and Adler S: Plasmapheresis in the treatment of steroid resistant focal glomerulosclerosis in native kidneys. *Amer J Kidney Dis* 32(2) : 230-237, 1998.
22. **Sharma M**, Sharma R, McCarthy ET, Savin VJ. The FSGS factor: Enrichment and *in vivo* effect of activity from FSGS. *J Am Soc Nephrol*, 10:552-561, 1999.
23. Trachtman H, Futterweit S, Singhal PC, Franki N, **Sharma M**, Sharma R, Savin VJ. Circulating factor in-patients with recurrent FSGS post-renal transplantation inhibits expression of inducible nitric oxide synthase and nitric oxide production by cultured rat mesangial cells. *J Invest Med* 47(3):114-20, 1999.
24. **Sharma M**, Hucke B, Lianos EA: Separation of hydroxyeicosatetraenoic acids and leukotrienes originating from kidney tissue by C-18 reverse-phase high-pressure liquid chromatography. In, *Methods in Molecular Biology*, vol. 120 (Ed. E A Lianos), pp. 45-54. Humana Press, Inc., Totowa, NJ, 1999.
25. Sharma R, **Sharma M**, Khanna AK and Savin VJ: Transforming Growth factor increases glomerular albumin permeability via hydroxyl radicals. *Kidney Int* 58:131-136, 2000.
26. Sharma R, **Sharma M**, McCarthy ET, Savin VJ: Components of normal serum block the focal segmental glomerulosclerosis factor activity *in vitro*. *Kidney Int* 58:1975-79, 2000.
27. Hariharan S and **Sharma M**: Recurrent and *de novo* diseases after renal transplantation. *Current Opinions in Organ Transplantation* 6:159-163, 2001.
28. **Sharma M**, Sharma R, Ge XL, Fish BL, McCarthy ET, Savin VJ, Cohen EP, Moulder JE: Early detection of radiation-induced glomerular injury by albumin permeability assay. *Radiation Research* 155:474-480, 2001.
29. Sharma R, **Sharma M**, Vamos S, McCarthy ET, Savin VJ and Wiegmann TB: Both subtype 1 and 2 receptors of angiotensin II participate in regulation of intracellular calcium in glomerular epithelial cells. *J lab Clin Med* 138:40-49, 2001.
30. McCarthy ET, **Sharma M**, Ge XL, Sharma R: Indomethacin protects glomeruli from increase in albumin permeability caused by sera from patients with focal segmental glomerulosclerosis. *Kidney Int* 61:534-541, 2002.
31. **Sharma M**, Sharma R, Reddy SR, McCarthy ET, Savin VJ: Proteinuria after injection of human focal sclerosis factor. *Transplantation* 73:366-372, 2002.
32. Sharma R, **Sharma M**, Dutta PK, Savin VJ: Induction of metallothionein-1 protects glomeruli from superoxide mediated increase in albumin permeability. *Exptl Biol Med* 227(1):26-31, 2002.
33. Yammani RR, **Sharma M**, Seetharam S, Moulder JE, Dahms NM, Seetharam B: Loss of albumin and megalin binding to renal cubilin in rats results in albuminuria after total body irradiation. *Am J Physiol Regul Integr Comp Physiol*. 283(2):R339-346, 2002.

34. Savin VJ, McCarthy ET, **Sharma M**: Permeability factor in FSGS. *Semin Nephrol* 23(2):147-160, 2003.
35. Narayanan J, Munday K, **Sharma M**, Medhora M: Role of cytochrome P450-catalyzed metabolites of arachidonic acid in angiogenesis. *Recent Res Devel Physiol* 1:793-800, 2003.
36. **Sharma M**, Sharma R, McCarthy ET, Savin VJ: The focal segmental glomerulosclerosis permeability factor: Biochemical characteristics and biological effects. *Exp Biol Med* 229(1):85-98. 2004.
37. McCarthy ET, **Sharma M**, Sharma R, Falk RJ, Jennette JC: Effect of serum from patients with collapsing glomerulopathy on albumin permeability. *J Lab Clin Med.* 143(4):225-229, 2004.
1. Trachtman H, Greenbaum LA, McCarthy ET, **Sharma M**, Gauthier BG, Frank R, Warady B, Savin VJ: Glomerular permeability activity: prevalence and prognostic value in pediatric patients with idiopathic nephrotic syndrome. *Am J Kidney Dis.* 44(4):604-610, 2004.
39. McCarthy ET, Sharma R, **Sharma M**: Protective effect of 20-hydroxy- eicosatetraenoic acid (20-HETE) on glomerular protein permeability barrier. *Kidney Int* 67(1):152-156, 2005.
40. Rangel-Filho A, **Sharma M**, Datta Y, Moreno C, Roman RJ, Iwamoto Y, Provoost A, Lazar J, Jacob HJ. Rab38 is the Rf-2 gene and it modulates proteinuria and albuminuria independently of changes in glomerular permeability in the Fawn Hooded hypertensive rat. *J Am Soc Neph* 16(4):852-856, 2005.
41. Dahly-Vernon AJ, **Sharma M**, McCarthy ET, Savin VJ, Ledbetter SR and Roman RJ. Transforming Growth Factor- β , 20-HETE Interaction, and Glomerular Injury in Dahl Salt-Sensitive Rats. *Hypertension* 45:1-6, 2005.
42. Gohh RY, Yango AF, Morrissey PE, Gautam A, **Sharma M**, McCarthy ET, Savin VJ: Preemptive plasmapheresis to prevent recurrence of FSGS in high-risk renal transplant recipients. (In Press)
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**SUPERVISION OF DISSERTATIONS FOR MASTER OF SCIENCE DEGREE IN
BIOCHEMISTRY, BIOCHEMISTRY DEPARTMENT, MS UNIVERSITY, BARODA,
INDIA**

1. Effects of neonatal and post-weaning undernutrition on the lipid composition of the rat skeletal muscle.
2. Effect of undernutrition on the lipid composition of myelin from the rat spinal cord.
3. Effects of undernutrition on the metabolism of rat brain gangliosides.
4. Effects of undernutrition on the metabolism of rat brain phosphoinositides.
5. Changes in the composition of the rat spinal cord with age.
6. Calcium levels in normal and undernourished rat brain subcellular fractions.
7. Fatty acid composition of normal and undernourished rat central nervous system.
8. Effects of propylthiouracil-induced thyroxine deficiency on bulk isolated rat brain cells.
9. Effects of uterine artery ligation during pregnancy on the growth of rat fetuses.
10. Effects of propylthiouracil treatment on lipid composition of neonatal rat brain.
11. Effects of protein deficiency on the lipid composition of liver microsomes during postweaning period.
12. Effects of protein deficiency during the post-weaning period on the liver oxygen metabolizing systems (lipid peroxidation, superoxide dismutase, peroxidase, catalase, glutathione and glutathione peroxidase)- Alterations due to rifampicin treatment.
13. Effects of post-weaning protein deficiency on the liver heme, cytochromes (P-450, b and c) and their reductases- Alterations due to rifampicin treatment.
14. Effects of propylthiouracil-induced thyroid hormone deficiency on the lipid composition of the rat brain.