NAME **ANIL GULATI**

Founder, Chairman and Chief Executive Officer
Pharmazz, Inc.
50 W. 75th Street, Suite 105
Willowbrook, Illinois 60527, USA
Tel: (630) 780-6087
Fax: (630) 560-0110
Email: anil.gulati@pharmazz.com

Professor Emeritus
Department of Pharmaceutical Sciences
Midwestern University
Email: agulat@midwestern.edu
Department of Bioengineering
The University of Illinois at Chicago
Email: gulati@uic.edu

ACADEMIC QUALIFICATIONS

1977	M.B., B.S. (Medicine) King George's Medical College, Lucknow, India.
1982	M.D. (Pharmacology) King George's Medical College, Lucknow, India.
1992	Diplomate American Board of Clinical Pharmacology
1996	Ph.D. (Pharmacology) Erasmus University Rotterdam, Rotterdam, The Netherlands

Pioneered the invention, development, and successful market entry of a new resuscitative agent, centhaquine, tailored for patients facing massive blood loss. This resuscitative agent is free of arterial constriction and is a new concept of using venous blood return to the heart in treating shock. His concept of stimulating the dormant regenerative cells to repair the damaged brain has led him to a novel drug creation, poised to revolutionize the treatment of cerebral stroke. He invented, developed, and obtained marketing authorization in India for an endothelin-B receptor agonist, sovateltide, to treat cerebral stroke. The USFDA approved phase III IND for both Centhaquine and Sovateltide and granted Special Protocol Assessment for Sovateltide to treat stroke.

CITATIONS

Google Scholar 7,340 citations, h-index of 47, i10-index of 188.

LICENSE

Permanent license to practice medicine in India (License number 22910 issued January 23, 1979)

PATENTS

1. Manish S. Lavhale and Anil Gulati: Lyophilized sovateltide-based injectable formulation and a process for preparation. Application PCT/IB2023/062892. Application filed by Pharmazz, Inc. date December 18, 2023.

2. Gulati, Anil: Pharmaceutical composition and method for treatment of acute respiratory distress syndrome (ARDS) in corona virus disease (COVID-19). Application US17/741,719. Application filed by Pharmazz, Inc. date November 5, 2022.

3. Gulati, Anil: Compositions and Methods for Treating Neuropsychiatric Disorders Using an Endothelin-B Receptor Agonist. Japanese Patent No. 6928450; Japanese Patent Application No. 2016-525428; Issue date August 11, 2021.

4. Gulati, Anil: Novel Therapeutic Treatments Using Centhaquin. United States Patent Number 10,828,368; Issue date November 10, 2020.

5. Gulati, Anil: Compositions and Methods for Treating Neuropsychiatric Disorders Using an Endothelin-B Receptor Agonist. European Patent Number EP3019242; Application No.14823205.1; Issue date: August 19, 2020.

6. Novel Therapeutic Treatments Using Centhaquin. Brazilian Patent Number PI 1013903-6; Issue date March 3, 2019.

7. Gulati, Anil: Compositions and methods for treating neuropsychiatric disorders using endothelin-B receptor agonist. United States Patent Number 10,561,704; Issue date February 18, 2020.

8. Gulati, Anil: Compositions and methods for treating neuropsychiatric disorders using endothelin-B receptor agonist. Australian Patent Number 2014287427; Issue date October 29, 2019.

9. Gulati, Anil; Lavhale, Manish; and Andurkar, Shridhar: Methods and compositions for hypotensive resuscitation. Canadian Patent Application Number 2882811; Issue date March 4, 2019.

10. Gulati, Anil: Methods for treatment of stroke or cerebrovascular accidents using an ETB receptor agonist. United States Patent Number 10,112,981; Issue date: October 30, 2018.

11. Gulati, Anil; Lavhale, Manish; and Andurkar, Shridhar: Methods and compositions for hypotensive resuscitation. Australian Patent Number 2012388759; Issue date September 27, 2018.

12. Gulati, Anil: Methods for treatment of stroke or cerebrovascular accidents using an ET_B receptor agonist. Canadian Patent Application Number 2696398; Issue date May 8, 2018.

13. Gulati, Anil: Novel therapeutic treatments using centhaquin. Canadian Patent Application Number 2759791; Issue date April 10, 2018.

14. Gulati, Anil: A pharmaceutical composition comprising centhaquin. Indian Patent Application Number 8783/CHENP/2011; Indian Patent Number 282155; Issue date March 31, 2017.

15. Gulati, Anil; Lavhale, Manish; and Andurkar, Shridhar: Methods and composition for hypotensive resuscitation. Japanese Patent No. 6096299; Issue date February 24, 2017.

16. Gulati, Anil: Methods for treatment of stroke or cerebrovascular accidents using an ETB receptor agonist. United States Patent Number 9,493,524; Issue date: November 15, 2016.

17. Gulati, Anil: Method and composition for treating diabetic ketoacidosis. Canadian Patent Application Number 2759795; Issue date June 2, 2016.

18. Gulati, Anil: Methods for treatment of stroke or cerebrovascular accidents using an ETB receptor agonist. Japanese Patent No. JP5956715B2; Application No. 2010-521975; Issue date May 6, 2016.

19. Gulati, Anil: MEDICAMENT USE OF CENTHAQUIN. China patent No. ZL201410085543.8; Issue date March 30, 2016.

20. Gulati, Anil: Method and Composition for Treating Diabetic Ketoacidosis. China patent No. 201080030271.1; Issue date March 23, 2016.

21. Gulati, Anil: Method and composition for treating diabetic ketoacidosis. Australian Patent Number 2010242930; Issue date January 21, 2016.

22. Gulati, Anil: Method and composition for treating diabetic ketoacidosis. European Patent Number EP2424530; Application No. 10770393.6; Issue date: October 23, 2015.

23. Gulati, Anil: Compositions for treatment of stroke or cerebrovascular accidents with an ETB receptor agonist. European Patent Number EP2182977; Application No. 08798175.9; Issue date: July 10, 2015.

24. Gulati, Anil: Method and composition for treating diabetic ketoacidosis. United States Patent Number 8,980,874; Issue date: March 17, 2015.

25. Gulati, Anil and Gulati, Kartike: Diagnostic use of endothelin ET_B receptor agonists and ET_A receptor antagonists in tumor imaging. United States Patent Number 8,980,222; Issue date: March 17, 2015.

26. Gulati, Anil, Reddy, Guru; Lenaz, Luigi: Sensitization of tumor cells to radiation therapy through administration of endothelin agonists. United States Patent Number 8,957,014; Issue date: February 17, 2015.

27. Gulati, Anil: Method and composition for treating diabetic ketoacidosis. Japanese Patent Application No. 2012-508762; Issue date March 26, 2014.

28. Gulati, Anil: Novel therapeutic treatments using centhaquin. Australian Patent Application Number 2010241564; Australian Patent Number 61/174,257; Issue date November 13, 2014.

29. Gulati, Anil: Methods for treatment of stroke or cerebrovascular accidents using an ETB receptor agonist. United States Patent Number 8,623,823; Issue date: January 7, 2014.

30. Gulati, Anil, Reddy; Guru; Lenaz; Luigi: Methods, compositions and articles of manufacture for contributing to the treatment of cancers. United States Patent Number 8,729,023; Issue date: May 20, 2014.

31. Gulati, Anil: Methods, compositions and articles of manufacture for contributing to the treatment of solid tumors. United States Patent Number 8,703,709; Issue date: April 22, 2014.

32. Gulati, Anil: Novel therapeutic treatments using centhaquin. Chinese Patent Application No. 201080029672.5; Issue date: January 8, 2014.

33. Gulati, Anil: Novel therapeutic treatments using centhaquin. Japanese Patent Application No. 2012-508721; Issue date: January 8, 2014.

34. Gulati, Anil: Compositions for the treatment of stroke or cerebrovascular accidents with an endothelin B receptor agonist. Chinese Patent Application Number 200880113425.6; Issue date August 2, 2013.

35. Gulati, Anil; Reddy; Guru; Lenaz; Luigi: Methods, compositions and articles of manufacture for contributing to the treatment of cancers. United States Patent Number 8,440,620; Issue date: May 14, 2013.

36. Gulati, Anil: Method and composition for potentiating an opiate analgesic. United States Patent Number 8,410,148; Issue date: April 2, 2013.

37. Gulati, Anil; Reddy; Guru; Lenaz; Luigi: Sensitization of tumor cells to radiation therapy through the administration of endothelin agonists. United States Patent Number 8,394,757; Issue date: March 12, 2013.

38. Gulati, Anil; Reddy; Guru; Lenaz; Luigi: Methods and compositions for contributing to the treatment of cancers. United States Patent Number 8,349,802; Issue date: January 8, 2013.

39. Gulati, Anil: Methods, compositions and articles of manufacture for contributing to the treatment of solid tumors; United States Patent Number 8,217,010; Issue date: July 10, 2012.

40. Gulati, Anil: Method and composition for potentiating an opiate analgesic; United States Patent Number 8,114,896; Issue date: February 14, 2012.

41. Gulati, Anil, Reddy, Guru, Lenaz, Luigi: Methods, compositions and articles of manufacture for contributing to the treatment of solid tumors; United States Patent Number 8,030,278; Issue date: October 4, 2011.

42. Gulati, Anil, Reddy, Guru, Lenaz, Luigi: Methods and compositions for contributing to the treatment of cancers; United States Patent Number 8,026,216; Issue date: September 27, 2011.

43. Gulati, Anil: Method and composition for preventing and treating solid tumors; United States Patent Number 7,976,835; Issue date: July 12, 2011.

44. Gulati, Anil: Method and composition for potentiating an opiate analgesic; United States Patent Number 7,973,064; Issue date: July 5, 2011.

45. Gulati, Anil: Method and composition for potentiating the antipyretic action of a nonopioid analgesic; United States Patent Number 7,351,692; Issue date: April 1, 2008.

46. Gulati, Anil: Method and composition for potentiating an opiate analgesic; Canadian Patent Number 2,464,768; Issue date: December 12, 2009.

47. Gulati, Anil: Endothelin antagonists in a method and composition for potentiation an opiate analgesic. India Patent Number 210044 granted for a term of 20 years on September 17, 2007, base date of November 22, 2002.

48. Gulati, Anil and Gulati, Kartike: Diagnostic use of endothelin ET_B receptor antagonists and ET_A receptor antagonists in tumor imaging. India Patent Number 243532 granted for a term of 20 years on October 22, 2010, base date of November 21, 2005.

49. Gulati, Anil and Gulati, Kartike: Diagnostic use of endothelin ET_B receptor agonists and ET_A receptor antagonists in tumor imaging; EPO Patent Application Number 05824775.0 granted November 20, 2013.

COMPANIES STARTED

1. Chicago Labs, Inc – raised millions of dollars through private investment, licensed some of the above patents from UIC, and established collaborative research and development programs with various Pharmaceutical Companies. Subsequently, it merged with EndogenX, Inc.

2. Oxygen Therapeutics, Inc – licensed some of the above patents from UIC and established collaborative research and development programs with various Pharmaceutical Companies. Subsequently, it merged with EndogenX, Inc.

3. EndogenX, Inc – a specialty pharmaceutical company based in Los Gatos, CA.

4. Pharmazz, Inc. USA and Pharmazz India Private Limited – pharmaceutical companies focused on developing emergency and critical care medicine products.

DISTINCTIONS, HONORS, AND AWARDS

1. Member, Scientific Advisory Committee World Endothelin Congress ET-18, Rome, Italy 2023

2. Member, Scientific Advisory Committee World Endothelin Congress ET-17, Rockville, USA 2021
3. Member, Scientific Advisory Committee World Endothelin Congress ET-16, Kobe, Japan 2019
4. Outstanding Faculty Award 2017 Midwestern University Chicago College of Pharmacy
5. Scientific Reviewer, 2016 and 2017 United States Defense Medical Research and Development Program, Combat Casualty Care Research Program.
6. N.S. Dhalla Oration Award 2015.
7. Recipient of 2014 Paul R Dawson Biotechnology Award for Outstanding Research and Education.
8. Recipient of 2014 Littlejohn Award.
9. Member, Scientific Advisory Committee ET-15 Conference, 2017
10. Co-Chair, ET-14: World Endothelin Congress, 2015.
11. Consultant, Advocate Children's Hospital, 2010 to present.
12. Member, International Advisory Board, World Endothelin Congress, Tokyo, Japan 2013.
13. Guest Associate Editor, Special Issue of Life Sciences dedicated for the Proceedings of the Thirteenth International Conference on Endothelin, Tokyo, Japan 2013.
14. Appointed to Journal of Blood Disorders & Transfusion Editorial Board.
15. Appointed to International Scholarly Research Network Editorial Board
16. Elected Fellow, American College of Clinical Pharmacology, USA - 2010.
17. US Fulbright Scholar 2008 to 2009.
18. Member, International Advisory Board, World Endothelin Congress, Cambridge, UK 2011.
19. Member, International Advisory Board, World Endothelin Congress, Montreal, Canada 2009.
20. Ranbaxy Research Foundation Award 2007 for contribution to the field of endothelin and possible applications.
21. Winner of Advocate Health Care Award for most outstanding research project, 2009 and 2012.
22. Winner of KS Research Day Award for best poster presentation by student, 2011 and 2012.
23. Member, Scientific Advisory Committee, International Conference on Translational Pharmacology, December 18-20, 2008.
24. Member, International Advisory Board, World Endothelin Congress, Bergamo, Italy 2007.
25. Gujral-Bhargava Memorial Oration Award 2007, King George Medical University, Lucknow, India; November 6th 2007.
26. Member Editorial Board, Canadian J Physiology Pharmacology, Special Edition on Endothelin; 2007-2008.
27. Member of Midwestern University Patent Review Committee 2007 to present.
28. Midwestern University CCP Committees: (a) Chair, Research Grant Stimulation Proposal Review Committee; (b) Chair, Committee on Mentoring; (c) Member, Student Leadership and Research Award Committee; (d) Member, Self Study Committee; (e) Member, Executive Committee; and (f) Member, Budget Managers Committee; 2007 to present.
29. Member, International Advisory Board, Indian Journal of Pharmacology; 2007 to 2010.
30. Member, Advisory Committee of the 40th Annual Conference of Indian Pharmacology Society, 2007.
31. Director and Guest Speaker, UIMP course on Endothelin in cancer and other pathological processes, Valencia, Spain; October 1 to 6, 2006.
32. Independent Director, Board of Directors, Venus Remedies Ltd, India; 2005 to 2010. Winner of the 2007 Emerging India Award in the Pharmaceutical & Chemicals category for excellence and exemplary growth.
33. Invited Speaker, Ninth World Congress on Endothelin, Salt Lake City, Utah; September 2005.
34. Inaugural Address, Drug Development Symposium, National Institute Pharmaceutical Education and Research, India; February 28, 2005.

35. Chairman, Conflict Review Committee, The University of Illinois at Chicago, 2004 to December 2006.
36. Member, Scientific Advisory Board, SynZyme Technologies; 1999 to 2009.
37. Member, Advisory Committee, Department of Biopharmaceutical Sciences, UIC, Chicago; September 2004 to 2007.
38. Member, Curriculum Committee, Department of Biopharmaceutical Sciences, UIC, Chicago; September 2004 to December 2006.
39. Member, US FDA Promotion Reviews, CBER Blood Substitutes; 2003, 2007.
40. Invited Speaker, Eighth World Congress on Endothelin, Tsukuba, Japan; October 2003.
41. Director and Guest Speaker, UIMP course on Artificial Blood Substitutes, Valencia, Spain; September 15, 2003.
42. Member, Advisory Board, AIDS and Drug Foundation, Valencia, Spain; 2003 to 2010.
43. Member, Clinical Review Committee, Department of Biopharmaceutical Sciences, UIC, Chicago; 2000 to 2005.
44. Member, Research Advisory Committee, College of Pharmacy, UIC, Chicago; 2000 to 2002.
45. Elected member, Executive Committee, Academy of Scientists of Indian Origin in America; 2000-2001.
46. Elected member, Executive Committee, India Medical Association (Illinois) USA; 2000-2001.
47. Recipient of Nuveen International Development Fund Award, 2000.
48. Elected Member, Executive Committee, College of Pharmacy, The University of Illinois at Chicago; 1998 to 2003.
49. Invited to attend the Round Table Conference on Tissue Oxygenation in Acute Medicine at Brussels, Belgium on March 14 to 16, 1998.
50. Invited Faculty at the 18th International Symposium on Intensive Care and Emergency Medicine at Brussels, Belgium on March 17 to 20, 1998.
51. Best poster award at the 18th International Symposium on Intensive Care and Emergency Medicine presented by Dr. Ken Burhop, C. Ince, A. Gulati and D. Malcom, March 17 to 20, 1998.
52. Member, Grant Review Committee, Campus Research Board, The University of Illinois at Chicago, Chicago, IL, 1996-2000.
53. Member, Hans W. Vahlteich Award Review Committee, College of Pharmacy, The University of Illinois at Chicago, Chicago, IL, 1998.
54. Consultant, Blood Substitutes Program, Baxter Healthcare Corporation, Deerfield, IL, 1992-2000 (Closely and extensively involved in the Blood Substitutes Program of Baxter Healthcare Corporation).
55. Consultant, SmithKline Beecham 1997 (Involved in the Endothelin program of SmithKline Beecham).
56. Member, University Judiciary Committee, The University of Illinois at Chicago, Chicago, IL, 1996-2002.
57. Reviewer, Department of Veterans Affairs for Merit Review Application, 1995.
58. Leadership and Commitment Award, Urban Health Program, University of Illinois at Chicago, 1995.
59. Faculty Appreciation Award, Urban Health Summer Enrichment Program, University of Illinois at Chicago, 1994.
60. Member, Student Discipline Committee, College of Pharmacy, University of Illinois at Chicago, 1993-present.
61. Consultant, National Institute on Drug Abuse Technical Review, Washington, D.C. September 28-29, 1993.
62. NIH Award for training of Minority students, 1992.
63. Secretary, International Affairs, Indian Academy of Neurosciences, 1989-1992.
64. Member, Hypertension Club, American Heart Association of Metropolitan Chicago, 1992-1994.
65. Member, Animal Care Committee, The University of Illinois at Chicago, Chicago, IL, 1992-present.
66. Secretary, Biomedical Safety Committee of CDRI, 1985-1986, Lucknow, India.

67. Project Convener, of the project "Role of central adrenergic mechanism in cardiovascular control" at CDRI, 1985-1986, Lucknow, India.
68. Secretary cum Treasurer of Lucknow branch of Indian Academy of Neurosciences, 1985-1986.
69. Winner of Hamdard National Foundation Award (1985) for the paper Experimental and Clinical studies on the cardiovascular effects of Rooh-Afza.
70. Winner of S.S.Parmar Research Foundation Prize for best poster paper presentation at the ITRC-IBRO symposium, 1984.
71. Elected member, Executive Committee, Indian Pharmacological Society, 1983-84.
72. Winner of Achari Award (1984) for the best paper presented at the 17th Annual Conference of Indian Pharmacological Society and the 1st Asian Congress of Pharmacology.
73. Awarded bursary by International Congress of Pharmacology to attend the IUPHAR meeting at London, 1984.
74. Winner of Uvnas Prize 1982 for publishing the best paper on autocoids from India.
75. Awarded gold medal and certificate of honor in first Professional M.B.,B.S. Examination in Anatomy.
76. Member of the advisory board of the following journals:
    i. Drugs: News and Views
    ii. Journal of Alzheimer's Disease
    iii. International Scholarly Research Network Editorial Board
    iv. Journal of Blood Disorders & Transfusion
77. Reviewer for more than 50 journals.
78. Plenary or Keynote Speaker at more than 100 organizations and institutions.

POSITIONS HELD

Pharmazz, Inc., Willowbrook, IL, USA.

Chairman and CEO	July 1, 2019 to present
Chairman and Director	October 21, 2010 to present.

Midwestern University, Downers Grove, IL, USA.

Emeritus Professor	July 1, 2019 to present Chicago College of Pharmacy, Department of Pharmaceutical Sciences
Associate Dean and Professor	January 2, 2007 to June 28, 2019 Chicago College of Pharmacy, Department of Pharmaceutical Sciences

The University of Illinois at Chicago, Chicago, IL, USA.

Adjunct Professor	2007 to Present Department of Bioengineering
Adjunct Professor	2010 to 2018 Department of Biopharmaceutical Sciences

Associate Professor	September 1, 1994, to January 1, 2007 Department of Biopharmaceutical Sciences
Associate Professor	September 1, 1995 to 2006 Department of Neurology and Rehabilitation Medicine
Associate Professor	September 1, 1996 to 2006 Department of Bioengineering
Assistant Professor	September 1, 1988 to August 31, 1994. Department of Pharmaceutics and Pharmacodynamics
Research Associate	March 1, 1987 to August 31, 1988. Department of Pharmaceutics and Pharmacodynamics

Central Drug Research Institute (CDRI), Division of Pharmacology, Lucknow, India.

Scientist	October 15, 1982 to February 28, 1987

Gandhi Memorial and Associated Hospitals and K.G. Medical College, Lucknow, India.

Senior Research Fellow	April 1, 1982 to October 14, 1982
Demonstrator	January 1, 1979 to March 31, 1982
Intern	January 10, 1978 to December 31, 1978

SOCIETY MEMBERSHIPS

1. American Heart Association (member)
2. American College of Clinical Pharmacology (Fellow)
3. Society for Critical Care Medicine (member)
4. American Diabetes Association (member)
5. American Association of Colleges of Pharmacy (member)
6. International Brain Research Organization (IBRO) (member)
7. American Association for Cancer Research (past member)
8. American Association Pharmaceutical Sciences (past member)
9. American Society of Pharmacology and Experimental Therapeutics (ASPET) (past member)
10. Society for Neuroscience (past member)
11. American Association for the Advancement of Science (past member)
12. International Society for Artificial Cells, Blood Substitutes and Immobilization Biotechnology (past member)
13. Collegium Internationale Neuro-Psychopharmacologicum (CINP) (past member)
14. Indian Academy of Neurosciences (Life member)
15. Indian Pharmacological Society (Life member)
16. Academy of Scientists of Indian Origin in America (Life member)

17. India Medical Association (Illinois) USA (Life member)

RESEARCH GRANTS

Date of Submission	Role	Agency	Title of Proposal	Amount Requested	Amount Funded	Funding Period
01/01/2020	PI (5%)	Advocate Health and Hospitals Corporation	Mentor, train and assist Pediatric Critical Care Medicine and Neonatal-Perinatal Medicine fellows in scholarly activity	$170,000	$170,000	01/01/20 to 12/31/21
01/01/2018	PI (5%)	Advocate Health and Hospitals Corporation	Mentor, train and assist Pediatric Critical Care Medicine and Neonatal-Perinatal Medicine fellows in scholarly activity	$208,000	$208,000	01/01/18 to 12/31/20
01/01/2017	PI (5%)	Advocate Health and Hospitals Corporation	Mentor, train and assist Pediatric Critical Care Medicine and Neonatal-Perinatal Medicine fellows in scholarly activity	$63,036	$63,036	01/01/17 to 12/31/17
09/03/2016	PI (5%)	National Institutes of Health	Toxicokinetics and toxicity of centhaquin in dogs	$277,059 (sub-award of $23,616 to MWU)	$277,059 (sub-award of $23,616 to MWU)	08/20/17 to 11/19/18
01/01/2016	PI (5%)	Advocate Health and Hospitals Corporation	Mentor, train and assist Pediatric Critical Care Medicine and Neonatal-Perinatal Medicine fellows in scholarly activity	$93,200	$93,200	01/01/16 to 12/31/16
01/01/2014	PI (2%)	Tian Medical, Inc.	Regulation of blood brain barrier by sphenopalatine ganglion	$75,914	$75,914	02/10/14 to 02/09/16
06/11/2013	Consultant	National Institutes of Health	Elucidation of an informed drug dosing scheme to minimize kidney injury	$458,764	$458,764	04/01/14 to 03/31/17
01/01/2015	PI (5%)	Advocate Health and Hospitals Corporation	Mentor, train and assist Pediatric Critical Care Medicine and Neonatal-Perinatal Medicine fellows in scholarly activity	$89,360	$89,360	01/01/15 to 12/31/15

01/15/2012	PI (15%)	Alzheimer's Drug Discovery Foundation	Nanocarrier formulation of ETB receptor agonist, IRL-1620, for the treatment of Alzheimer's disease	$96,694	$96,694	11/01/12 to 10/30/14
01/01/2013	PI (5%)	Advocate Health and Hospitals Corporation	Mentor, train and assist Pediatric Critical Care Medicine and Neonatal-Perinatal Medicine fellows in scholarly activity	$162,000	$162,000	01/01/13 to 12/31/14
06/01/2012	PI (5%)	Novo Nordisk, Inc.	Effect of Liraglutide on oxidative stress and apoptosis in the brain of rats with focal cerebral ischemia	$53,191	$53,191	11/01/12 to 12/31/13
03/01/2013	PI	Sangart, Inc.	MP4OX in Cerebral Ischemia	$5,000	$5,000	04/01/13 to 12/31/13
03/15/2012	PI	Novo Nordisk, Inc.	Symposium on New Drug Discoveries and Therapies	$12,500	$10,000	04/01/12 to 09/30/12
11/01/2011	PI	Advocate Lutheran General Hospital	Projects in neonatology and pediatric critical care medicine	$18,000	$18,000	01/01/12 to 12/31/12
01/02/2010	PI	Advocate Lutheran General Hospital	Projects in pediatric critical care medicine	$21,900	$21,900	01/25/10 to 01/24/11
06/30/2010	PI	Novo Nordisk, Inc.	Symposium on New Drug Discoveries and Therapies	$12,500	$12,500	06/01/10 to 10/30/10
06/30/2010	PI	Lilly, Inc.	Symposium on New Drug Discoveries and Therapies	$12,500	$12,500	06/01/10 to 10/30/10
02/02/2010	PI	Novo Nordisk, Inc.	Effect of liraglutide on permanent middle cerebral artery occlusion stroke model in normal and diabetic rats	$46,618	$46,618	06/01/10 to 05/31/12
01/02/2010	PI	Advocate Lutheran General Hospital	Central nervous system complications of diabetes mellitus	$201,500	$201,500	01/25/10 to 01/24/12
04/30/2008	PI	Novo Nordisk, Inc.	Symposium on New Drug Discoveries and Therapies	$5,000	$5,000	06/01/08 to 10/30/08
04/30/2008	PI	EndogenX, Inc.	Symposium on New Drug Discoveries and Therapies	$3,000	$3,000	06/01/08 to 10/30/08

05/2008	PI	EndogenX, Inc.	Studies on role of body temperature on stroke	$81,345	$81,345	06/01/08 to 07/31/10
08/31/2007	Co-PI	Advocate Lutheran General Health Partners Endowment Grant	Endothelin (ET-1) Levels in Neonates	$54,500	$54,500	10/01/07 to 09/30/09
06/01/2007	PI	Advocate Lutheran General Hospital	Central nervous system complications of diabetes mellitus	$126,676	$126,676	08/01/07 to 07/01/09
04/2007	PI	Midwestern University CCP Faculty Research Grant Program	Endothelin: Role in Aging and Alzheimer's Disease	$5,000	$5,000	06/01/07 to 05/31/08
02/2007	PI	EndogenX, Inc.	Studies on role of endothelin in opiate tolerance and withdrawal	$57,500	$57,500	03/01/07 to 12/31/07
06/2006	PI	Chicago Labs, Inc.	Tumor drug delivery, Gulati Laboratory	$30,500	$30,500	Unrestricted Gift
03/2005	PI	Wendy Will Cancer Fund, Inc., Chicago	Use of Endothelin B (ET_B) receptor agonist as an adjuvant to increase the delivery of chemotherapeutic agents selectively to the breast tumor	$18,000	$18,000	07/01/05 to 06/30/06
10/2003	PI	Chicago Labs, Inc.	Delivery of chemotherapeutics agents to the tumor tissue by endothelin agonists	$169,199	$169,199	12/01/03 to 07/31/06
02/2005	PI	Chicago Labs, Inc.	Tumor drug delivery, Gulati Laboratory	$10,000	$10,000	Unrestricted Gift
08/2003	PI	Chicago Labs, Inc.	Endothelin antagonists on morphine tolerance	$62,500	$62,500	09/01/03 to 08/31/04
09/2004	PI	Chicago Labs, Inc.	Tumor drug delivery, Gulati Laboratory	$10,000	$10,000	Unrestricted Gift
09/2003	PI	Chicago Labs, Inc.	Tumor drug delivery, Gulati Laboratory	$10,000	$10,000	Unrestricted Gift
01/2003	PI	Advocate Lutheran General Hospital	Studies on role of endothelin in neonatal morphine tolerance	$8,500	$8,500	Unrestricted Gift
01/2001	PI	Erasmus University Rotterdam	Studies on radioactive microspheres	$8,500	$8,500	Unrestricted Gift
04/2000	PI	UIC, Campus Research Board	Role P-glycoprotein in morphine transfer across BBB	$15,000	$15,000	07/00 to 07/01

11/1999	PI	Abbott Corporation, IL	Efficacy of modified starch in hemorrhage	$20,000	$20,000	01/00 to 12/01
12/1999	PI	SynZyme Technologies	Efficacy studies of polynitroxyl hemoglobin	$59,000	$59,000	01/00 to 12/01
11/1999	PI	Baxter Healthcare Corporation	Role of endothelin and nitric oxide mechanisms in the resuscitation effect of DCLHb	$45,000	$45,000	01/00 to 12/01
09/1999	PI	Erasmus University Rotterdam	Studies on radioactive microspheres	$5,000	$5,000	Unrestricted Gift
11/1998	PI	Baxter Healthcare Corporation	Test the efficacy of genetically modified hemoglobins	$52,981	$52,981	01/99 to 12/99
11/1998	PI	SynZyme Technologies	Efficacy studies of polynitroxyl hemoglobin	$101,887	$101,887	12/98 to 11/99
10/1998	PI	Ace Laboratories	Cardiovascular studies of endothelin antagonists	$14,667	$14,667	10/98 to 09/99
09/1998	PI	Erasmus University Rotterdam	Studies on radioactive microspheres	$4,420	$4,420	Unrestricted Gift
08/1998	PI	SynZyme Technologies	Research on blood substitutes using radioactive microspheres	$12,000	$12,000	Unrestricted Gift
05/1998	PI	SynZyme Technologies	Research on blood substitutes using radioactive microspheres	$6,775	$6,775	Unrestricted Gift
02/1998	PI	North Atlantic Treaty Organization (NATO)	Blood substitutes: Role in post-hemorrhagic resuscitation	$7,942	$7,942	07/98 to 06/99
03/1998	Co-PI	State-Campus research Board, UIC (PI: Dr. H. Kastrissios)	Validation of a hepatic cirrhosis model for pharmacokinetic studies	$7,500/ $14,995	$7,500/ $14,995	07/98 to 06/99
09/1997	PI	Erasmus University Rotterdam	Studies on radioactive microspheres	$6,288	$6,288	Unrestricted Gift
09/1996	PI	Erasmus University Rotterdam	Studies on radioactive microspheres	$7,448	$7,448	Unrestricted Gift
11/1995	PI	Baxter Healthcare Corporation	Role of endothelin and nitric oxide mechanisms in the resuscitative effect of DCLHb	$542,397	$542,397	12/95 to 12/99
06/1995	PI	UIC Equipment Grant	Grant for the purchase of equipment-Blood gas Analyzer	$12,000	$12,000	07/95 to 06/96
02/1995	PI	NIH-UIC Equipment Grant	Grant for the purchase of equipment-Ultracentrifuges	$45,000	$45,000	07/95 to 06/96

02/1995	PI	North Atlantic Treaty Organization (NATO)	Blood substitutes: Role in post-hemorrhagic resuscitation	$7,942	$7,942	07/95 to 06/96
11/1994	PI	Baxter Healthcare Corporation	Role of endothelin and nitric oxide mechanisms in the resuscitative effect of DCLHb	$171,993	$171,993	12/94 to 11/95
11/1993	PI	Baxter Healthcare Corporation	Mechanisms involved in the regional circulatory and systemic hemodynamic effects of DCLHb	$290,633	$290,633	12/93 to 11/94
02/1992	PI	National Institute of Health	Permeability of morphine across BBB during development	$96,232	$96,232	08/92 to 07/94
02/1992	PI	Miles Inc.	Efficacy of nisoldipine in endothelin mediated hypertension	$17,376	$17,376	12/93 to 11/94
11/1991	Co-PI	National Institute of Health	Morphine metabolism in preterm and term newborns	$125,763	$125,763	03/92 to 02/94
01/1991	PI	Baxter Healthcare Inc.	Role of endothelin in pressor effect of DCLHb	$1,078	$1,078	Unrestricted Gift
01/1991	PI	Baxter Healthcare Inc.	Role of endothelin in pressor effect of DCLHb	$6,775	$6,775	Unrestricted Gift
01/1991	PI	Baxter Healthcare Inc.	Role of endothelin in pressor effect of DCLHb	$57,000	$57,000	05/92 to 04/93
01/1991	PI	Baxter Healthcare Inc.	Role of endothelin in pressor effect of DCLHb	$9,337	$9,337	Unrestricted Gift
01/1991	Co-PI	College of Nursing Research Grants	Pharmacokinetics and Metabolism of morphine in preterm and term newborns	$7,500	$7,500	09/91 to 09/92
11/1990	PI	National Center for RSCH Resources	Biomedical Research Support Grant-Brandel Cell Harvester	$3,000	$3,000	04/91 to 03/92
06/1990	PI	National Institute on Aging - Pilot Study Program	Aging and neurochemical regulation of BBB	$3,494	$3,494	01/91 to 12/91
03/1990	Co-PI	National Institute of Health	Hypothalamus and narcotic effects" $323,268	$323,268	$323,268	07/90 to 06/93
03/1990	PI	The University of Illinois at Chicago	BBB changes for morphine during development	$10,000	$10,000	07/90 to 06/91
03/1990	PI	State - Campus Research Board	BBB changes for morphine during development	$6,500	$6,500	07/90 to 06/91
03/1990	PI	The University of Illinois at Chicago	Aging and neurochemical regulation of BBB	$7,200	$7,200	03/90 to 06/91

TEACHING EXPERIENCE

Mentoring numerous mid and senior level faculty researchers in career development and research programs.

The following courses taught at the Midwestern University:

Semester/ Term	Course #	Course Title	Quarter Hours	Required/Elective Optional	Enrollment	% Taught
*SPG/2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019	PSCI 1515	Biopharmaceutics (Pharmacokinetics)	3.5	R	150-200	45%
@SPG/200, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019	PSCI 1376	Development of Newly Approved Drug Therapies	2	E	~100	100%
#SUM/200, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017	BISC 0660	Laboratory Research for Thesis	6	R	2	100%
#SUM/200, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019	Advocate Lutheran Hospital	Research training and guidance post-graduate medical fellows	6	-	3-4	100%
*FAL/2009	PSCI 0567	Advanced topics in medicinal chemistry	2	E	190	7.5%
*SPG/2008	PSCI 1363	Biopharmaceutics (Pharmacokinetics)	4	R	201	45%
@SPG/2008	PSCI 0669	Development of Newly Approved Drug Therapies	1	E	52	100%
*FAL/2008	PSCI 0567	Advanced topics in medicinal chemistry	2	E	190	7.5%
#SUM/2007	PSCI 0499	Special projects or research	3	E	1	100%
#SUM/2007	BISC 0660	Laboratory Research for Thesis	6	R	1	100%
#SUM/2007	Advocate Lutheran	Research training and guidance post-graduate	6	-	1	100%

	Hospital	medical fellows				
#FAL/2007	PSCI 0499	Special projects or research	3	E	2	100%
#FAL/2007	BISC 0660	Laboratory Research for Thesis	6	R	1	100%
#FAL/2007	Advocate Lutheran Hospital	Research training and guidance post-graduate medical fellows	6	-	1	100%
*FAL/2007	PSCI 0567	Advanced topics in medicinal chemistry	2	E	190	7.5%
#WIN/2007	BISC 0660	Laboratory Research for Thesis	6	R	1	100%
#WIN/2007	PSCI 0499	Special projects or research	3	E	1	100%
#WIN/2007	Advocate Lutheran Hospital	Research training and guidance post-graduate medical fellows	6	-	2	100%

* Indicates candidate was a participant in a team-taught course; # Indicates candidate was the sole instructor; @Indicates candidate was course coordinator.

The following courses taught at the University of Illinois at Chicago:

Semester/ Term	**Course #**	**Course Title**	**Semester Hours**	**Required/Elective Optional**	**Enrollment**	**% Taught**
*SPG/2005	BPS471	Clinical Pharmacology II	1	E	18	15%
*SPG/2005	BPS365	Survey of Receptors and Drug Actions	1	E	90	15%
*SPG/2005	PHAR403	Principles of Drug Action and Therapeutics III	4	R	150	15%
@SPG/2005	PHAR407	Principles of Drug Action and Therapeutics VII	4	R	154	5%
*SPG/2005	PMPG480	Biological evaluations of natural products	3	E	10	20%
#SPG/2005	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	1	100%
#SPG/2005	BPS599	Laboratory Research in Biopharmaceutical Sciences	6	R	1	100%
*SPG/2005	BPS502	Biopharmaceutical Sciences	4	R	11	20%
#SUM/2005	BPS390	Special Projects	3	E	1	100%

		Biopharmaceutical Sciences				
#SUM/2005	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	1	100%
*FAL/2005	BPS470	Clinical Pharmacology I	1	E	12	15%
*FAL/2005	BPS360	Survey of basic and clinical pharmacology	1	E	127	15%
*FAL/2005	PHAR402	Principles of Drug Action and Therapeutics II	4	R	155	10%
*FAL/2005	PHAR405	Principles of Drug Action and Therapeutics V	4	R	150	10%
#FAL/2005	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	1	100%
*SPG/2004	BPS471	Clinical Pharmacology II	1	E	18	15%
#SPG/2004	BPS380	Research Projects	2	E	10	100%
#SPG/2004	BPS390	Research Projects	3	E	3	100%
*SPG/2004	BPS365	Survey of Receptors and Drug Actions	1	E	70	15%
*SPG/2004	PHAR403	Principles of Drug Action and Therapeutics III	4	R	152	15%
@SPG/2004	PHAR407	Principles of Drug Action and Therapeutics VII	4	R	151	5%
*SPG/2004	BPS502	Biopharmaceutical Sciences	4	R	11	20%
#SPG/2004	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	2	100%
*SPG/2004	PMPG480	Biological evaluations of natural products	3	E	11	20%
#SPG/2004	BPS599	Laboratory Research in Biopharmaceutical Sciences	6	R	2	100%
#SUM/2004	BPS390	Research Projects	3	E	1	100%
#SUM/2004	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	3	100%
#SUM/2004	BPS599	Laboratory Research in	6	R	3	100%

		Biopharmaceutical Sciences				
*FAL/2004	BPS470	Clinical Pharmacology I	1	E	16	15%
*FAL/2004	BPS360	Survey of basic and clinical pharmacology	1	E	107	15%
#FAL/2004	BPS380	Research Projects	2	E	4	100%
#FAL/2004	BPS390	Research Projects	3	E	8	100%
*FAL/2004	PHAR401	Principles of Drug Action and Therapeutics I	4	R	159	7%
*FAL/2004	PHAR402	Principles of Drug Action and Therapeutics II	4	R	152	10%
*FAL/2004	PHAR405	Principles of Drug Action and Therapeutics V	4	R	150	10%
#FAL/2004	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	3	100%
#FAL/2004	BPS599	Laboratory Research in Biopharmaceutical Sciences	6	R	3	100%
*SPG/2003	BPS471	Clinical Pharmacology II	1	E	18	15%
#SPG/2003	BPS380	Research Projects	2	E	10	100%
#SPG/2003	BPS390	Research Projects	3	E	3	100%
*SPG/2003	BPS365	Survey of Receptors and Drug Actions	1	E	70	15%
*SPG/2003	PHAR403	Principles of Drug Action and Therapeutics III	4	R	150	15%
@SPG/2003	PHAR407	Principles of Drug Action and Therapeutics VII	4	R	154	5%
*SPG/2003	BPS502	Biopharmaceutical Sciences	4	R	9	20%
#SPG/2003	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	3	100%
*SPG/2003	PMPG480	Biological evaluations of natural products	3	E	12	20%
#SPG/2003	BPS599	Laboratory Research in Biopharmaceutical Sciences	6	R	3	100%

#SUM/2003	BPS390	Research Projects	3	E	2	100%
#SUM/2003	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	3	100%
#SUM/2003	BPS599	Laboratory Research in Biopharmaceutical Sciences	6	R	3	100%
*FAL/2003	BPS470	Clinical Pharmacology I	1	E	12	15%
*FAL/2003	BPS360	Survey of basic and clinical pharmacology	1	E	90	15%
#FAL/2003	BPS380	Research Projects	2	E	8	100%
#FAL/2003	BPS390	Research Projects	3	E	2	100%
*FAL/2003	PHAR401	Principles of Drug Action and Therapeutics I	4	R	159	7%
*FAL/2003	PHAR402	Principles of Drug Action and Therapeutics II	4	R	155	10%
*FAL/2003	PHAR405	Principles of Drug Action and Therapeutics V	4	R	150	10%
#FAL/2003	BPS593	Laboratory Research in Biopharmaceutical Sciences	4	R	4	100%
#FAL/2003	BPS599	Laboratory Research in Biopharmaceutical Sciences	6	R	4	100%

* Indicates candidate was a participant in a team-taught course; # Indicates candidate was the sole instructor; @Indicates candidate was course coordinator.

1988 to 2002 In addition to the above following courses were taught at the University of Illinois at Chicago:
Experimental Techniques in Pharmacokinetics and Pharmacodynamics
Laboratory Techniques in Pharmacokinetics and Pharmacodynamics
Pharmacodynamics of substance abuse
Research in Pharmacodynamics
Thesis Research
Pharmacokinetics
Drug Standards and Quality Control
Research Projects
Special Projects
Topics in Adverse Drug Reactions

1977 to 1987 Lectures, demonstrations, tutorials and practical classes of Pharmacology, Clinical and Experimental Pharmacology of M.B.B.S. (Medical Graduates) and B.D.S. (Dental Graduates)

students, at the King George's Medical College, Lucknow, India.

1977 to 1987 Post-graduate seminars (M.D. Pharmacology) at the King George's Medical College, Lucknow, India.

Undergraduate Advising and Supervision

- Faculty Advisor for numerous Pharm D. students
- Routinely guide and advise Pharm.D. students on problems related to their academic career.

GRADUATE STUDENT TRAINING/EXPERIENCE

Grand Rounds at the following hospitals

1. Department of Pediatrics, Advocate Lutheran General Hospital, Park Ridge
2. Gastroenterology, Department of Medicine, The University of Illinois at Chicago.
3. Rheumatology, Department of Medicine, The University of Illinois at Chicago.
4. Department of Pediatrics, The University of Illinois at Chicago.
5. Department of Pediatrics, Cook County Hospital, Chicago.
6. Grant Hospital of Chicago, Chicago.
7. Jackson Park Hospital, Chicago.
8. All India Institute of Medical Sciences, New Delhi, India.
9. VP Chest Institute, New Delhi, India.
10. Department of Pharmacy Practice, The University of Illinois at Chicago.
11. Grand Round in Advocate Lutheran General Hospital, Park Ridge, IL
12. Endothelin and drug development; State of Illinois sponsored Pharma Industry meeting, Hilton Chicago
13. Role of endothelin antagonists in opioid tolerance; National Institute Pharmaceutical Education and Research, India
14. Grand Round in Post-Graduate Institute of Medical Research and Education, Chandigarh, India
15. Grand Round in Central Drug Institute India, Lucknow, India
16. Grand Round in Industrial Toxicology Research Center of India, Lucknow, India

Following graduate students have been being advised and supervised:

1. Sam Rebello, Thesis title “Endothelin mechanisms in the central nervous system: Role in cardiovascular regulation” Ph.D., The University of Illinois at Chicago, 1995. Presently, Director, Novartis Institute for Biomedical Research, One Health Plaza, Bldg 438-3410, East Hanover, NJ 07936.

2. Iyad Munib Ayob, Thesis title “Efficacy study of a blood substitute, DCLHb” M.S., The University of Illinois at Chicago, 1998. Presently working as Research Scientist, CPR Research Laboratories Building 1, Rm 208C 3001 Greenbay Road, VA Medical Center, North Chicago, IL 60054

3. Abhijit Barve, Thesis title “Adrenergic Mechanisms in the Cardiovascular Actions of Hemoglobin Therapeutics” Ph.D., The University of Illinois at Chicago, 1999. Presently, President R&D, Mylan Labs., USA.

4. Kye Won Park, M.S. Bioengineeering, The University of Illinois at Chicago, 1998. Present occupation not known.

5. Paul Buehler, Pharm.D., Thesis title "Cardiovascular Studies of Hemoglobin Therapeutic Agents" Ph.D., The University of Illinois at Chicago, 2002. Presently, Pharmacologist, Principal Investigator, U.S. Food and Drug Administration Center for Biologics Evaluation and Research, Office of Blood Research and Review/Division of Hematology, Laboratory of Biochemistry and Vascular Biology, NIH Building 29 room 129, Bethesda, MD 20892.

6. P.V.N. Rameshraja, Thesis title "Role of Endothelin and Nitric Oxide Mechanisms in Experimental Model of Hepato-Renal Failure" Ph.D., The University of Illinois at Chicago, 2002. Presently, Principal Scientist of Quantitative Pharmacology, Amgen Inc. Thousand Oaks, CA.

7. Shaifali Bhalla, Thesis title "Reversal of analgesic tolerance to morphine by endothelin receptor antagonists" Ph.D., The University of Illinois at Chicago, 2005. Presently, Associate Professor, Chicago College of Pharmacy, Midwestern University, Downers Grove, IL 60515.

8. Aarati J. Rai, Thesis title "A novel role for Endothelin-B receptor agonists in the delivery of paclitaxel to the breast tumor tissue" Ph.D., The University of Illinois at Chicago, 2005. Presently, Clinical Science Manager, Abbott Laboratories, 100 Abbott Park Road, Abbott Park, IL 60064.

9. Mary G. Leonard, Thesis title "Involvement of ET-B receptors in cerebral blood perfusion" M.S. Biomedical Sciences, Midwestern University, 2008. Presently Senior Research Associate Chicago College of Pharmacy, Midwestern University, Downers Grove, IL 60515.

10. Katie Koenig, Thesis title "The effects of endothelin antagonism during diabetic ketoacidosis" M.S. Biomedical Sciences, Midwestern University, 2009. Presently, DO student in CCOM, Midwestern University.

11. Robert Lugo, Thesis title "Enhancement of antipyretic action of non-steroidal anti-inflammatory drugs by endothelin antagonists" M.S. Biomedical Sciences, Midwestern University, 2009. Presently, DO student in California.

12. Mary G. Leonard, Thesis title "Studies involving ET-B receptor agonist IRL-1620 as an agent for treatment of acute stroke" 2008-2013. PhD student in Neural Bioengineering, The University of Illinois at Chicago. Presently Senior Research Associate Chicago College of Pharmacy, Midwestern University, Downers Grove, IL 60515.

13. David Garcia, Thesis title "Centhaquin improves the resuscitative effect of hypertonic saline in hemorrhaged rats" M.S. Biomedical Sciences, Midwestern University, 2010. Presently, DO student in CCOM, Midwestern University and Chair, Student Section of American Society of Anesthesiologists.

14. Tina Philip, Thesis title "The effects of endothelin antagonism on Alzheimer's and vascular dementia" M.S. Biomedical Sciences, Midwestern University, 2010. Presently, working as scientist at Lutheran General Hospital.

15. Cortney Shepard, Thesis title "Endothelin antagonism in Alzheimer's and vascular dementia" M.S. Biomedical Sciences, Midwestern University, 2011. Presently, DO student in CCOM, Midwestern University.

16. Sagar Shah, Thesis title "Endothelin antagonism in cerebral ischemia" M.S. Biomedical Sciences, Midwestern University, 2011. Presently, DO student in CCOM, Midwestern University.

17. Tiffany Forte, Thesis title "Effect of centhaquin resuscitation on catecholamine-induced cardiovascular responses in hemorrhaged rats" M.S. Biomedical Sciences, Midwestern University, 2012. Presently, MD student at University of Illinois at Chicago.

18. Tommy Quoc Dang, Thesis title "Catecholamine induced changes in cardiovascular effects of normal and beta-amyloid treated rats" M.S. Biomedical Sciences, Midwestern University, 2012. Presently, DO student in CCOM, Midwestern University.

19. Nora Mulloy, Thesis title "Resuscitative effect of centhaquin in rabbit model of uncontrolled hemorrhage" M.S. Biomedical Sciences, Midwestern University, 2013. Presently, DO student in CCOM, Midwestern University.

20. Karolina Kata, Thesis title "Effect of centhaquin on behavior and oxidative stress in rodent model of Autism" M.S. Biomedical Sciences, Midwestern University, 2013. Presently, Medical Student.

21. Kevin Cooper, Thesis title "Neuroprotective effect of IRL-1620 in diabetic rats with permanent cerebral ischemia" M.S. Biomedical Sciences, Midwestern University, 2014. Presently, DO student in CCOM, Midwestern University.

22. Christopher Nguyen, Thesis title "Stimulation of ET_B receptors modulates the progression of Alzheimer's disease" M.S. Biomedical Sciences, Midwestern University, 2014.

23. Luu Thanh, The Apoptotic Pathway Mediates the Neuroprotective Effect of IRL-1620 in a Rat Model of Focal Cerebral Ischemia. Presently Medical Student.

24. Anupama Puppala, Modulation of apoptotic pathway by ETB receptor agonist, IRL-1620, in rats with cerebral ischemia. Presently, PhD student at the University of Illinois at Chicago.

25. Monica Husby, Thesis title "Endothelin B receptor agonist, IRL-1620 provides neuroprotection and enhances angiogenesis in diabetic rats with cerebral ischemia" M.S. Biomedical Sciences, Midwestern University, 2016.

Students from CCOM doing research in our laboratory (2013): Colin Bohr-MS1; Lisa Dahl-MS1; Tommy Quoc Dang-MS1. Students from CCP doing research in our laboratory (2013): Ravina Gandhakwala. Member on Thesis Committee of more than 20 students.

Following students were supervised by Dr. Gulati as Thesis Advisor at King George's Medical

College/Central Drug Research Institute:

1. A clinico-biochemical study of childhood convulsive disorders (M.D. Pediatrics, University of Lucknow, Dr. P.K. Maheshwari, August, 1983).

2. Study of blood-brain barrier in inflammatory disorders of CNS and in neonatal jaundice (M.D. Pediatrics, University of Lucknow, Dr. Anil Mahesh, August, 1983).

3. Study of blood-brain barrier in asphyxia neonatorum and neonatal jaundice (M.D. Pediatrics, University of Lucknow, Dr. Ravi Bighe, August, 1984).

4. Interaction of some antihypertensive drugs with central adrenergic and dopaminergic receptors (M.Phil. Life Sciences, Aligarh Muslim University, Ms. Ghazala Hussain, March, 1985).

5. The study of biogenic amine receptors of platelets in patients suffering from myocardial infarction (M.D. Medicine, University of Lucknow, Dr. Devendra Soni, December 1986).

6. A study of some biogenic amine receptors in platelet of Parkinsonian patients (D.M. Neurology, University of Lucknow, Dr. P.K. Maheshwari, December 1986).

7. A study of blood-brain barrier in central nervous system infections (M.D. Medicine, University of Lucknow, Dr. Sanjiv Dhawan, February, 1988).

8. A study of CSF sugar and blood sugar levels in patients of febrile convulsions and status of blood brain barrier (M.D. Pediatrics, University of Lucknow, Dr. Geeta Dawar, February, 1988).

9. Interaction of some antihypertensive drugs with central monoaminergic and cholinergic receptors (Ph.D. Life Sciences, Aligarh Muslim University, Dr. Ghazala Hussain, March 1989).

Following persons have received postdoctoral research training under the supervision of Dr. Gulati:

1. Donna Wielbo, Ph.D., Research Associate, Department of Pediatrics, The University of Illinois at Chicago, Chicago, IL (1991-1992). Presently working as Research Associate Professor, Department of Medicinal Chemistry, College of Pharmacy, University of Florida, Gainesville, FL USA.

2. Greg A. Bertelsen, B.S., Research Assistant, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1990-1991). Present occupation not known.

3. Avadhesh C. Sharma, Ph.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1992-1996). Presently working as Associate Professor Department of Biomedical Sciences The Texas A&M University System, Health Science Center, Baylor College of Dentistry, 3302 Gaston Avenue Dallas, TX 75246.

4. Govind Singh, Ph.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1992-1995). Presently working as Professor and Head, Department of Biochemistry, Rajasthan University, India.

5. Yumi Dong, M.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1995-1996). Present occupation not known.

6. Ashok Kumar, Ph.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1995-1997). Present occupation not known.

7. Ananda P. Sen, Ph.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1994-1998). Presently working as Research Scientist, Research & Development, BEXEL Pharmaceuticals Inc., 32990 Alvarado Niles Rd., Suite 910, Union City, CA, 94587.

8. Huashan S. Wang, M.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1997-2001); Presently working as Research Associate, Department of Anesthesia and Critical Care, The Pritzker School of Medicine, The University of Chicago, Chicago, Illinois.

9. Jing-Tian Xie, M.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1998-2000); Presently working as Research Associate, Department of Anesthesia and Critical Care, The Pritzker School of Medicine, The University of Chicago, Chicago, Illinois.

10. Sangeeta Karve, M.D., Ph.D., Research Associate, Department of Pharmaceutics and Pharmacodynamics, The University of Illinois at Chicago, Chicago, IL (1997-2002); Presently working as Research Associate, Committee on Clinical Pharmacology, The Pritzker School of Medicine, The University of Chicago, Chicago, Illinois.

11. Chad R. Haney, Ph.D., Research Assistant Department of Pharmaceutics and Pharmacodynamics, "Purification and Polymerization of Hemoglobin Leading to Novel Therapeutic Agents" (1997-2002); Presently, Research Associate, Department of Radiation Oncology, 5841 S. Maryland Avenue, The Pritzker School of Medicine, The University of Chicago, Chicago, IL 60637-1463.

12. Chetna Mittal, , Ph.D., Research Associate, Department of Biopharmaceutical Sciences, The University of Illinois at Chicago, Chicago, IL (2002-2004); Presently, Research Scientist, Orochem Laboratories, IL.

13. Mahesh D. Chavanpatil, Ph.D., Research Associate, Department of Biopharmaceutical Sciences, The University of Illinois at Chicago, Chicago, IL (2003-2004); Presently, Research Associate, Department of Pharmaceutical Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, 259, Mack Avenue, Room No: 3250, Detroit, Michigan, 48201.

14. Rajeshkumar NV, Ph.D.; Research Associate, Department of Biopharmaceutical Sciences, The University of Illinois at Chicago, Chicago, IL (2003-2006). Presently, Department of Oncology, The Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins School of Medicine.

15. George Matwyshyn, MS; Research Associate, Chicago College of Pharmacy, Midwestern University; previously Research Technologist, Department of Biopharmaceutical Sciences, The University of Illinois at Chicago, Chicago, IL (1990-2012).

16. Manish S. Lavhale, Ph.D.; Research Associate, Department of Pharmaceutical Sciences, Midwestern University Chicago College of Pharmacy, Downers Grove, IL (2008-2011).

17. Seema Briyal, Ph.D.; Research Associate, Department of Pharmaceutical Sciences, Midwestern University Chicago College of Pharmacy, Downers Grove, IL (2009-2018).

18. Gwendolyn D'Souza, Ph.D.; Research Associate, Department of Pharmaceutical Sciences, Midwestern University Chicago College of Pharmacy, Downers Grove, IL (2011-2018).

19. Mary G. Leonard, Ph.D.; Research Associate, Department of Pharmaceutical Sciences, Midwestern University Chicago College of Pharmacy, Downers Grove, IL (2013-2018).

20. Amaresh K. Ranjan, Ph.D.; Research Associate, Department of Pharmaceutical Sciences, Midwestern University Chicago College of Pharmacy, Downers Grove, IL (2018-present).

Fellows and residents from clinical departments worked and conducted experiments under the guidance of Dr. Gulati.

1. Benzy J. Padanilam, M.D., Resident in Internal Medicine, Grant Hospital of Chicago, Chicago, IL (1991). Conducted experiments to determine the role of endothelin in regulation of blood pressure.

2. Venkateswarlu Thota, M.D., Resident in Internal Medicine, Grant Hospital of Chicago, Chicago, IL (1991; 1993). Conducted experiments to determine the role of endothelin in regulation of blood pressure.

3. Sujoy Roy, M.D., Resident in Internal Medicine, Grant Hospital of Chicago, Chicago, IL (1992). Conducted experiments to determine the role of endothelin in regulation of blood pressure.

4. Ravi Iyer, M.D., Fellow in Neonatology, The University of Illinois Hospitals, Chicago, IL (1992; 1993). Conducted experiments to determine the role of endothelin in regulation of blood pressure.

5. Rajendra Singh, M.D., Resident in Internal Medicine, Grant Hospital of Chicago, Chicago, IL (1993-1994). Conducted experiments to determine the role of endothelin in cardiovascular effects of blood substitutes.

6. Iman Fares, M.D., Fellow in Neonatology, The University of Illinois Hospitals, Chicago, IL (1993). Conducted experiments to determine the transfer of morphine across the blood brain barrier.

7. Dharmendra Marwah, M.D., Fellow in Nephrology, Rush Hospital and University, Chicago, IL (1996). Conducted experiments to determine the role of endothelin in cardiovascular effects of blood substitutes.

8. Duane Stich, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2004-2005). Planned and conducted a clinical study to determine the passage of morphine across the blood brain barrier in neonates of various gestational age and sepsis.

9. Preetha Prazad, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2005-2008).

10. Eileen Deano, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2005-2008).

11. Ramesh Muthukumar, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2007-2011).

12. Lourdes Ferreira, M.D., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2007-2008).

13. Chinedy Oranu, M.D., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2007-2010).

14. Mustufa Boxwalla, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2007-2009).

15. Stephnie Tolentino, M.D., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2011-2012).

16. Gospodin Stefanov, M.D., Neonatologist, Advocate Lutheran General Hospital, Park Ridge, IL (2011-present).

17. Mia Eppler, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2010-2012).

18. Awan Imran. M.D., Fellow in neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2010-2012).

19. Jacek Louis Ubaka, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2011-2013).

20. Ursula Colareta Ugarte, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2011-2013).

21. Oleksandr, Kachanov, M.D., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2012-2015).

22. Muralidhara Devarapalli, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2012-2015).

23. Aarti Amlani, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2013-2016).

24. Muhammad Ansari, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2013-2016).

25. Alejandra Gaxiola, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2014-present).

26. Eric Norman, M.D., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2014-present).

27. Shaista Shaik, D.O., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2014-present).

28. Abhinav Singla, M.D., Resident Physician, Advocate Illinois Masonic Medical Center, Chicago, IL (2015-2016).

29. Vrinda Shenoy, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2015-2017).

30. Sandy Aikara, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2015-2018).

31. Bhavna Gupta, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2016-2019).

32. Tarek Salman, M.D., Fellow in Pediatric Critical Care, Advocate Lutheran General Hospital, Park Ridge, IL (2016-2019).

33. Michelle Davis Ramos, M.D., Fellow in Neonatology, Advocate Lutheran General Hospital, Park Ridge, IL (2019-present).

Direction of Research Associates, Visiting Scholars, and Technicians

Dr. Gulati's research program has attracted numerous scientists from several countries. An international interest has been created because of his recognized abilities in endothelin, drug development and blood substitutes. The following scientists have visited Dr. Gulati's laboratory and have participated in research programs.

1. R.C. Srimal, M.D., Director, Industrial Toxicology Research Center, Lucknow, India (1992 and 1995). Conducted research work on the role of endothelin in blood pressure regulation. Role of central endothelin in the regulation of autonomic functions was studied. Results have been published in Eur. J. Pharmacology and a review article has been published in Drug Development Research.

2. P.R. Saxena, M.D., Professor and Chairman, Department of Pharmacology, Erasmus University Rotterdam, Rotterdam, The Netherlands (1994 and 1995). Visited Dr. Gulati's laboratory and a joint program to study the role of endothelin in migraine was initiated. Role of trigeminal nerve in triggering migraine was also planned. A grant was submitted to NIH, which was not funded.

3. Jan P.C. Heiligers, M.S., Research Technician, Department of Pharmacology, Erasmus University Rotterdam, Rotterdam, The Netherlands (1994 and 1998). Visited Dr. Gulati's laboratory and conducted experiments in rats, swine and non-human primates to determine the effect of blood substitutes on systemic and regional blood circulation. This data is yet to published.

4. V.K. Bhargava, M.D., Ph.D., Professor and Head, Department of Pharmacology, Postgraduate Institute of Medical education and research, Chandigarh, India (1997). Conducted research work to determine the role of endothelin in head injury cases and in bronchial asthma. A protocol was developed to estimate plasma concentration of endothelin in patients having bronchial asthma.

5. Y.K. Gupta, M.D., Professor, Department of Pharmacology, All India Institute of Medical Sciences, New Delhi, India (1997). A joint program has been initiated on the role of endothelin antagonists in intracranial hypertension. Extremely interesting results were obtained and discovery disclosure was submitted to the OVCR.

6. Peter De Varies, Ph.D., Research Assistant, Department of Pharmacology, Erasmus University Rotterdam, Rotterdam, The Netherlands (1998). Conducted experiments in non-human primates to determine the effect of blood substitutes on systemic and regional blood circulation.

7. Vincent Villar, Ph.D., Assistant Professor, Departmento de Farmacologia, Universitat de Valencia, Spain (1998). Conducted experiments to determine role of nociceptin in cardiovascular regulation. A joint program has been initiated to study the effect of nociceptin in bronchial asthma.

RESEARCH COLLABORATIONS

The following research collaborations were established and some are continuing at present:

1. Blood Substitute Group, Baxter Healthcare Corporation, Round Lake, IL (Dr. K. Burhop). Project: Development of Blood Substitute, Understanding the Cardiovascular Actions of Hemoglobin. Project was funded.

2. Cardiovascular Division, Miles Incorporated, Connecticut (Dr. D. Woods). Project: Cardiovascular Actions of Endothelin and its Antagonists and their Interaction with Nisoldipine. Project was funded.

3. Departmento de Farmacologia, Universitat de Valencia, Spain (Prof. Esteban Morcillo, Head). Project: Submitted a joint grant proposal to NATO on Role of Endothelin in Bronchial Asthma (Not funded).

4. Institute of Pharmacology, Erasmus University Rotterdam, Rotterdam, The Netherlands (Prof. P.R. Saxena, Head). Project: Joint Research Funded by NATO on Blood Substitutes in Hemorrhagic Shock. Project was funded.

5. Bristol-Myers Squibb, Pharmaceutical Research Institute, New Jersey (Dr. S. Moreland). Project: Cardiovascular Effects of Centrally Administered Endothelin Antagonist. Project was partly funded.

6. Department of Medicine, Rush University, Chicago, IL (Prof. C.G. Murlas). Project: Role of Endothelin in Pulmonary Disorders. Project led to several publications.

7. Department of Pediatrics, The University of Illinois at Chicago, Chicago, IL (Prof. D. Vidyasagar). Project: Morphine Pharmacokinetics in Premature Neonates. Project led to several publications.

8. Department of Physical Medicine and Rehabilitation, The University of Illinois at Chicago, Chicago, IL (Prof.

B.T. Shahani). Project: Role of Central Endothelin in Autonomic Regulation. Project led to several publications.

9. National Institute Pharmaceutical Education and Research, India (Prof. P. Ramarao, Director) Morphine tolerance dependence studies in animal models. Studies are being planned.

10. Department of Radiology, All India Institute of Medical Sciences, New Delhi, India (Dr. A. Malhotra, Prof and Head) Planning for a clinical trial on use of endothelin in tumor diagnosis.

11. Department of Pharmacology, All India Institute of Medical Sciences, New Delhi, India (Dr. Y.K. Gupta, Prof and Head); Endothelin in stroke. Project led to publications.

12. Amala Cancer Research Centre, Thrissur, India (Dr. Kuttan, Director Research). Endothelin in radiotherapy. Studies done and resulted in publications.

13. Department of Pediatrics, Advocate Lutheran General Hospital, Park Ridge, IL (Dr. B. Puppala, Director of Fellowship and Research Program). Endothelin in neonatal morphine tolerance and abstinence. Project led to publications.

RESEARCH PUBLICATIONS

Research Publications (Indexed Journals):	more than 300 (list attached)
Research Presentations:	more than 400

Books:

1. Editor of book entitled "Endothelin: Role in Health and Disease", Harwood Academic Publishers, Amsterdam, The Netherlands. Contributed 7 out of 22 chapters in this book.

2. Book entitled A Pharmacological Mechanisms in the Cardiovascular Effects of DCLHb, a Hemoglobin Based Blood Substitute, Ph.D. Thesis Pharmacology, Erasmus University Rotterdam, Rotterdam, The Netherlands.

Book Chapters:

Gulati, Anil; Writing a Grant Proposal, In Biomedical research, Eds G. Jagadeesh, S. Murthy, Y.K. Gupta and A. Prakash, Publisher Wolters Kluwer ISBN-13: 978-81-8473-200-9; First Edition 2010 pages519-526.

PEER REVIEWED PUBLICATIONS

1. Khanna A, Vaidya K, Shah D, Ranjan AK, Gulati A. Centhaquine Increases Stroke Volume and Cardiac Output in Patients with Hypovolemic Shock. Journal of Clinical Medicine. 2024 Jun 27;13(13):3765.
2. Chalkias A, Pais G, Gulati A. Effect of Centhaquine on the Coagulation Cascade in Normal State and Uncontrolled Hemorrhage: A Multiphase Study Combining Ex Vivo and In Vivo Experiments in Different Species. International Journal of Molecular Sciences. 2024 Mar 20;25(6):3494.
3. Ranjan AK, Gulati A. Advances in Therapies to Treat Neonatal Hypoxic-Ischemic Encephalopathy. Journal of Clinical Medicine. 2023;12(20):6653.
4. Briyal S, Ranjan AK, Gulati A. Oxidative stress: A target to treat Alzheimer's disease and stroke. Neurochemistry International. 2023 May;165:105509.
5. Gulati A, Agrawal N, Vibha D, Misra UK, Paul B, Jain D, Pandian J, Borgohain R. Safety and efficacy of sovateltide (IRL-1620) in a multicenter randomized controlled clinical trial in patients with acute cerebral ischemic stroke. CNS drugs. 2021 Jan;35:85-104.
6. Ranjan AK, Gulati A. Controls of Central and Peripheral Blood Pressure and Hemorrhagic/Hypovolemic Shock. Journal of clinical medicine. 2023 Jan 31;12(3):1108.
7. Geevarghese M, Patel K, Gulati A, Ranjan A. Role of adrenergic receptors in shock. Frontiers in Physiology. 2023 Jan 1;14.
8. Ranjan AK, Gulati A. Sovateltide mediated endothelin B receptors agonism and curbing neurological disorders. International Journal of Molecular Sciences. 2022 Mar 15;23(6):3146.
9. Bhalla S, Lyne J, Gulati A, Andurkar SV. Attenuation of opioid tolerance by ETA receptor antagonist, BQ123, administered intravenously in mice. The Journal of pharmacy and pharmacology. 2022 May 20;74(5):769-78.
10. Ranjan AK, Gulati A. Sovateltide Mediated Endothelin B Receptors Agonism and Curbing Neurological Disorders. International Journal of Molecular Sciences. 2022 Mar 15;23(6).
11. Mannaerts D, Faes E, Gielis J, Van Craenenbroeck E, Cos P, Spaanderman M, Gyselaers W, Cornette J, Jacquemyn Y. Oxidative stress and endothelial function in normal pregnancy versus pre-eclampsia, a combined longitudinal and case control study. BMC pregnancy and childbirth. 2018 Dec;18:1-9.
12. Ramos MD, Briyal S, Prazad P, Gulati A. Neuroprotective Effect of Sovateltide (IRL 1620, PMZ 1620) in a Neonatal Rat Model of Hypoxic-Ischemic Encephalopathy. Neuroscience. 2022 Jan 1;480:194-202.
13. Gulati A, Choudhuri R, Gupta A, Singh S, Ali SKN, Sidhu GK, Haque PD, Rahate P, Bothra AR, Singh GP, Maheshwari S, Jeswani D, Haveri S, Agarwal A, Agrawal NR. A Multicentric, Randomized, Controlled Phase III Study of Centhaquine (Lyfaquin®) as a Resuscitative Agent in Hypovolemic Shock Patients *Drugs* volume 81, pages1079–1100 (2021). PubMed PMID: 34061314.
14. Gulati A, Jain D, Agrawal NR, Rahate P, Choudhuri R, Das S, Dhibar DP, Prabhu M, Haveri S, Agarwal R, Lavhale MS. Resuscitative effect of centhaquine (Lyfaquin®) in hypovolemic shock patients: a randomized, multicentric, controlled trial. *Advances in Therapy* volume 38, pages3223–3265 (2021). PubMed PMID: 33970455.
15. Gulati A, Agrawal N, Vibha D, Misra UK, Paul B, Jain D, Pandian J, Borgohain R. Safety and Efficacy of Sovateltide (IRL-1620) in a Multicenter Randomized Controlled Clinical Trial in Patients with Acute Cerebral Ischemic Stroke. CNS Drugs. 2021 Jan;35(1):85-104. PubMed PMID: 33428177.
16. Ranjan AK, Zhang Z, Briyal S, Gulati A. Centhaquine Restores Renal Blood Flow and Protects Tissue Damage After Hemorrhagic Shock and Renal Ischemia. Front Pharmacol. 2021 May 3;12:616253. PubMed PMID: 34012389.
17. Ranjan AK, Briyal S, Gulati A. Sovateltide (IRL-1620) activates neuronal differentiation and prevents mitochondrial dysfunction in adult mammalian brains following stroke. Sci Rep. 2020 Jul 29;10(1):12737. PubMed PMID: 32728189.

18. Ranjan AK, Briyal S, Khandekar D, Gulati A. Sovateltide (IRL-1620) affects neuronal progenitors and prevents cerebral tissue damage after ischemic stroke. Can J Physiol Pharmacol. 2020 Sep;98(9):659-666. PubMed PMID: 32574518.
19. Kasala S, Briyal S, Prazad P, Ranjan AK, Stefanov G, Donovan R, Gulati, A. Exposure to Morphine and Caffeine Induces Apoptosis and Mitochondrial Dysfunction in a Neonatal Rat Brain. Front Pediatr. 2020 Sep 18;8:593. doi: 10.3389/fped.2020.00593. PubMed PMID: 33042927.
20. Gulati, A, Lavhale, M, Giri, R, Andurkar, SV, and Xanthos, T. Centhaquine citrate. Alpha2B-Adrenoceptor ligand, Resuscitative agent for hypovolemic shock. Drugs of the Future 2020; 45 (3), 153-163.
21. Stefanov, G, Briyal, S, Pais, GM, Puppala, BL, and Gulati, A. Relationship Between Oxidative Stress Markers and Endothelin-1 Levels in Newborns of Different Gestational Ages. Frontiers in Pediatrics 8, (279) doi.org/10.3389/fped.2020.00279. PubMed PMID: 32582590.
22. Gupta, B, Hornick, MG, Briyal, S, Donovan, R, Prazad, P and Gulati, A. Anti-apoptotic and Immunomodulatory Effect of CB2 Agonist, JWH133, in a Neonatal Rat Model of Hypoxic-Ischemic Encephalopathy. Frontiers in Pediatrics 8 (65) doi.org/10.3389/fped.2020.00065. PubMed PMID: 32175293.
23. Briyal S, Ranjan AK, Hornick MG, Puppala AK, Luu T, Gulati A. Anti-apoptotic activity of ET B receptor agonist, IRL-1620, protects neural cells in rats with cerebral ischemia. Scientific Reports. 2019 Jul 18;9(1):10439. doi: 10.1038/s41598-019-46203-x. PubMed PMID: 31320660.
24. Joshi MD, Pais GM, Chang J, Hlukhenka K, Avedissian SN, Gulati A, Prozialeck WC, Lamar PC, Zhang Z, Scheetz MH, Griffin B. Evaluation of Fetal and Maternal Vancomycin-Induced Kidney Injury during Pregnancy in a Rat Model. Antimicrob Agents Chemother. 2019;63(10):e00761-19. Epub 2019/07/25. doi: 10.1128/AAC.00761-19. PubMed PMID: 31332061; PMCID: PMC6761542.
25. Pais GM, Avedissian SN, O'Donnell JN, Rhodes NJ, Lodise TP, Prozialeck WC, Lamar PC, Cluff C, Gulati A, Fitzgerald JC, Downes KJ, Zuppa AF, Scheetz MH. Comparative Performance of Urinary Biomarkers for Vancomycin-Induced Kidney Injury According to Timeline of Injury. Antimicrob Agents Chemother. 2019;63(7):AAC. 00079-19. Epub 2019/04/17. doi: 10.1128/AAC.00079-19. PubMed PMID: 30988153; PMCID: PMC6591602.
26. Ranjan AK, Gulati A. Two-Dimensional Electrophoresis and Mass Spectrometry for Protein Identification. Progenitor Cells: Humana, New York, NY; 2019. p. 185-95. PubMed PMID: 31273743
27. Schlich M, Sinico C, Valenti D, Gulati A, Joshi MD, Meli V, Murgia S, Xanthos T. Towards long-acting adrenaline for cardiopulmonary resuscitation: Production and characterization of a liposomal formulation. Int J Pharm. 2019;557:105-11. Epub 2018/12/27. doi: 10.1016/j.ijpharm.2018.12.044. PubMed PMID: 30586629.
28. Cifuentes, E.G., Hornick, M.G., Havalad, S., Donovan, R., and Gulati, A. Neuroprotective effect of IRL-1620, an endothelin B receptor agonist, on a pediatric rat model of middle cerebral artery occlusion. Frontiers in Pediatrics, 2018; 6:310. doi: 10.3389/fped.2018.00310. PubMed PMID: 30406063.
29. Kontouli, Z., Staikou, C., Iacovidou, N., Mamais, I., Kouskouni, E., Papalois, A., Papapanagiotou, P., Gulati, A., Chalkias, A., and Xanthos, T. Resuscitation with centhaquin and 6% hydroxyethyl starch 130/0.4 improves survival in a swine model of hemorrhagic shock: a randomized experimental study. Eur J Trauma Emerg Surg. 2018 Jul 13. doi: 10.1007/s00068-018-0980-1. PubMed PMID: 30006694.
30. Gulati, A., Hornick, M.G., Briyal, S. and Lavhale, M.S. Review: A novel neuroregenerative approach using ET_B receptor agonist, IRL-1620, to treat CNS disorders. Physiological Research 2018; 67(1):S95-S113. PubMed PMID: 29947531.
31. Briyal, S., Gandhakwala, R., Khan, M., Lavhale, M.S. and, Gulati, A. Alterations in endothelin receptors following hemorrhage and resuscitation by centhaquin. Physiological Research 2018: 67(1): S199-S214.

PubMed PMID: 29947540.

32. Mule, N.K., Singh, J.N., Shah, K.U., Gulati, A. and Sharma, S.S. Endothelin-1 decreases excitability of the dorsal root ganglion neurons via ETB receptor. Molecular Neurobiology, 2018; 55(5):4297-4310. PubMed PMID: 28623618.
33. O'Donnell JN, Rhodes NJ, Miglis CM, Catovic L, Liu J, Cluff C, Pais G, Avedissian S, Joshi M, Griffin B, Prozialeck W, Gulati A, Lodise TP, Scheetz MH. Dose, duration, and animal sex predict vancomycin-associated acute kidney injury in preclinical studies. Int J Antimicrob Agents. 2018; 51(2):239-243. [Epub ahead of print]. PubMed PMID: 28803934.
34. Amlani, A., Hornick, M.G., Cooper, K., Prazad, P., Donovan, R., and Gulati, A. Maternal Cannabinoid Use Alters Cannabinoid (CB1) and Endothelin (ETB) Receptor Expression in the Brains of Dams but Not Their Offspring. Developmental Neuroscience 2017; 39(6):498-506. PubMed PMID: 29131068.
35. O'Donnell, J.N., Rhodes, N.J., Lodise, T.P., Prozialeck, W.C., Miglis, C.M., Joshi, M., Venkatesan, N., Pais, G., Cluff, C., Lamar, P.C., Briyal, S., Day, J.Z., Gulati, A, Scheetz, M.H. 24-Hour Pharmacokinetic Relationships for Vancomycin and Novel Urinary Biomarkers of Acute Kidney Injury. Antimicrob Agents Chemother. 2017 Aug 14. pii: AAC.00416-17. doi: 10.1128/AAC.00416-17. PubMed PMID: 28807910.
36. Rhodes NJ, Prozialeck WC, Lodise TP, Venkatesan N, O'Donnell JN, Pais G, Cluff C, Lamar PC, Neely MN, Gulati A, Scheetz MH. Correction for Rhodes et al., Evaluation of Vancomycin Exposures Associated with Elevations in Novel Urinary Biomarkers of Acute Kidney Injury in Vancomycin-Treated Rats. Antimicrob Agents Chemother. 2017 Mar 24;61(4). pii: e00185-17. doi: 10.1128/AAC.00185-17. PubMed PMID: 28341810.
37. Papalexopoulou K, Chalkias A, Pliatsika P, Papalois A, Papapanagiotou P, Papadopoulos G, Arnaoutoglou E, Petrou A, Gulati A and Xanthos T (2017) Centhaquin effects in a swine model of ventricular fibrillation. Centhaquin and cardiac arrest. Heart, Lung and Circulation. DOI: 10.1016/j.hlc.2016.11.008; PubMed PMID: 28385449.
38. Galatianou, I., Karlis, G., Apostolopoulos, A., Intas, G., Chalari, E., Gulati, A., Iacovidou, N., Chalkias, A., Xanthos, T. Body mass index and outcome of out-of-hospital cardiac arrest patients not treated by targeted temperature management. American Journal Emergency Medicine 2017 Mar 21. DOI: 10.1016/j.ajem.2017.03.050; PubMed PMID: 28363619.
39. Gulati, S., Briyal, S., Jones, S., Bhalla, S. and Gulati, A. Attenuation of opioid tolerance by ET_B receptor agonist, IRL-1620, is independent of an accompanied decrease in nerve growth factor in mice. Heliyon, 2017; 3(6):e00317. DOI: 10.1016/j.heliyon.2017.e00317. PubMed PMID: 28626808.
40. Papalexopoulou, K., Gulati, A., Pliatsika, P., Aggelina, A., Papalois, A., Papadopoulos, G. and Xanthos, T. Centhaquin improves the outcome of cardiopulmonary resuscitation in a swine model of prolonged ventricular fibrillation. Resuscitation November 2015 Volume 96, Supplement 1, p7. Presented at the Congress of the European Resuscitation Council. October 29-31 2015 Prague, Czech Republic.
41. Pollock, D.M., Gulati, A. and Ergul, A. The Fourteenth International Conference on Endothelin (ET-14), Savannah, U.S.A. Life Sci. 2016; 159:2-9. PubMed PMID: 27321090.
42. Leonard, M.G., Jung, S., Andurkar, S.V., and Gulati, A. Centhaquin attenuates hyperalgesia and non-evoked guarding in a rat model of postoperative pain primarily through α_{2B}-adrenoceptors. European J. Pharmacology 2016; 789:81-87. PubMed PMID: 27397429.
43. Rhodes, N., Prozialeck, W., Lodise, T., Venkatesan, N., O'Donnell, J.N., Pais, G., Cluff, C., Lamar, P., Neely, M., Gulati, A. and Scheetz, M. Evaluation of vancomycin exposures associated with elevations in novel urinary biomarkers of acute kidney injury in vancomycin-treated rats. Antimicrobial Agents and Chemotherapy 2016; 60(10):5742-51. PubMed PMID: 27431226.
44. Stefanov, G., Puppala, B.L., Pais, G. and Gulati, A. Endothelin-1 concentrations in cord blood and renal

function in newborns of various gestational ages. Journal of Neonatal-Perinatal Medicine 2016; 9(2):145-52. PubMed PMID: 27197927.

45. O'Donnell, J.N., O'Donnell, E.P., Kumar. E.J., Lavhale, M.S., Andurkar, S.V., Gulati, A., Scheetz, M.H. Pharmacokinetics of centhaquin citrate in a dog model. J. Pharmacy Pharmacology 2016; doi: 10.1111/jphp.12554. PubMed PMID: 27109141.
46. Gulati, A. Endothelin Receptors, Mitochondria and Neurogenesis in Cerebral Ischemia. Current Neuropharmacology 2016; 14(6): 619-626. PubMed PMID: 26786146.
47. Bhalla, S., Andurkar, S.V. and Gulati, A. Neurobiology of Opioid Withdrawal: Role of the Endothelin System. Life Sciences 2016: 159:34-42; doi:10.1016/j.lfs.2016.01.016. PubMed PMID: 26796510.
48. O'Donnell, J.N., Gulati, A., Lavhale, M.S., Sharma, S.S, Patel, A.J., Rhodes, N.J. and Scheetz, M.H. Pharmacokinetics of centhaquin citrate in a rat model. J. Pharmacy Pharmacology 2016; doi: 10.1111/jphp.12498. PubMed PMID: 26725913.
49. Gulati, A. Vascular endothelium and hypovolemic shock. Current Vascular Pharmacology 2016; 14(2): 187-195. PubMed PMID: 26638794.
50. Joshi, M.D., Oesterling, B., Wu, C., Gwizdz, N., Pais, G., Briyal, S. and Gulati, A. Evaluation of liposomal nanocarriers loaded with ETB receptor agonist, IRL-1620, using cell based assays. Neuroscience 2016; 312: 141-152. PubMed PMID: 26592721.
51. Papapanagiotou, P., Xanthos, T., Gulati, A., Chalkias, A., Papalois, A., Kontouli, Z., Alegakis, A., Iacovidou, N. Centhaquin improves survival in a swine model of hemorrhagic shock. J. Surgical Research 2016; 200: 227-235; PubMed PMID: 26216751.
52. Chalkias, A., Scheetz, M., Gulati, A. and Xanthos, T. Periarrest intestinal bacterial translocation and resuscitation outcome. J Crit Care. 2016; 31: 217-220. PubMed PMID: 26481507.
53. Bhalla, S., Leonard, M., Briyal, S. and Gulati, A. Distinct alteration in brain endothelin A and B receptor characteristics following focal cerebral ischemia in rats. Drug Res (Stuttg). 2016; 66: 189-195. PubMed PMID: 26398673.
54. Devarapalli. M., Leonard, M., Briyal, S., Stefanov, G., Puppala, B.L., Schweig, L. and Gulati, A. Prenatal Oxycodone Exposure Alters CNS Endothelin Receptor Expression in Neonatal Rats. Drug Res (Stuttg). 2016: 66(5):246-50. PubMed PMID: 26676852.
55. Goyal, A.O., Lavhale, M.S. and Gulati, A. Safety and Efficacy of Centhaquin as a Novel Resuscitative Agent for Hypovolemic Shock. Circulation November 10, 2015, Volume 132, Issue Suppl 3, Abstract 17521.
56. Husby, M., Leonard, M.G. and Gulati, A. Endothelin B Receptor Agonist, IRL-1620 is an Effective Neurovascular Remodeling Agent in Diabetic Rats With Cerebral Ischemia Circulation November 10, 2015, Volume 132, Issue Suppl 3, Abstract 10198.
57. Gulati, A., Puppala, A., Thanh, L., and Briyal, S. Apoptotic pathway mediates the neuroprotective effect of IRL-1620 in focal cerebral ischemia. Crit Care Med. 2015 Dec;43(12 Suppl 1):5. PubMed PMID: 26569680.
58. Gulati, A., Leonard, M., and Husby, M. IRL-1620 provides neuroprotection and enhances angiogenesis in diabetic rats with cerebral ischemia. Crit Care Med. 2015 Dec;43(12 Suppl 1):123. PubMed PMID: 26570148.
59. Gulati, A. Understanding neurogenesis in the adult human brain. Indian J Pharmacol 2015; 47:583-584. PubMed PMID: 26729946.
60. Varvarousis, D., Varvarousi, G., Iacovidou, N., D'Aloja, E., Gulati, A. and Xanthos, T. The Pathophysiologies of Asphyxial Versus Dysrhythmic Cardiac Arrest: Implications for Resuscitation and Post-Event Management. American J. Emergency Medicine 2015; 33:1297-304; PubMed PMID: 26233618.

61. Briyal, S., Nguyen, C., Leonard, M. and Anil Gulati, A. Stimulation of ET_B receptors by IRL-1620 decreases the progression of Alzheimer's disease. Neuroscience 2015; 301:1-11; PubMed PMID: 26022359.
62. Bhalla, S., Pais, G., Tapia, M. and Gulati, A. Endothelin ET_A receptor antagonist reverses naloxone-precipitated opioid withdrawal in mice. Can J Physiol Pharmacol. 2015; 93:935-44. PubMed PMID: 26440527.
63. Leonard, M., Prazad, P., Puppala, B.L. and Gulati, A. Selective endothelin-B receptor stimulation increases vascular endothelial growth factor in the rat brain during postnatal development. Drug Res (Stuttg). 2015; 65: 607-613. PubMed PMID: 25806822.
64. Puppala, B., Awan, I., Briyal, S., Mbachu, O., Leonard, M. and Gulati, A. Ontogeny of endothelin receptors in the brain, heart, and kidneys of neonatal rats at different postnatal ages. Brain and Development 2015; 37: 206-215. PubMed PMID: 24815227.
65. Kakavas, S., Mongardon, N., Cariou, A., Gulati, A., and Xanthos, T. Early-onset pneumonia after out-of-hospital cardiac arrest. J Infect. 2015; 70:553–562. PubMed PMID: 25644317.
66. Briyal, S., Shepard, C. and Gulati, A. Endothelin receptor type B agonist, IRL-1620, prevents beta amyloid (Aβ) induced oxidative stress and cognitive impairment in normal and diabetic rats. Pharmacology, Biochemistry and Behavior 2014; 120:65-72. PubMed PMID: 24561065.
67. Briyal, S., Shah, S. and Gulati, A. Neuroprotective and anti-apoptotic effects of liraglutide in the rat brain following focal cerebral ischemia. Neuroscience 2014; 281:269-281. PubMed PMID: 25301749.
68. Ugarte, U.C., Prazad, P., Puppala, B.L., Schweig, L., Donovan, R., Cortes, D.R. and Gulati, A. Emission of Volatile Organic Compounds from Medical Equipment inside Neonatal Incubators. J Perinatol. 2014; 34: 624-628; PubMed PMID: 24762411.
69. Reniguntala, M.J., Lavhale, M.S., Andurkar, S.V. and Gulati, A. Synthesis, characterization and pharmacological evaluation of centhaquin and its citrate salt as cardiovascular active agents. Drug Research 2015; 65:184-191. PubMed PMID: 24831242.
70. Chalkias, A., Fanos, V., Noto, A., Castrén, M., Gulati, A., Svavarsdóttir, H., Iacovidou, N. and Xanthos, T. 1H-NMR-Metabolomics: Can they be a useful tool in our understanding of cardiac arrest? Resuscitation 2014; 85: 595-601. PMID: 24513156.
71. Andurkar, S.V., Reniguntala, M.J., Gulati, A., and DeRuiter, J. Synthesis and antinociceptive properties of *N*-phenyl-*N*-(1-(2-(thiophen-2-yl)ethyl)azepane-4-yl)propionamide in the mouse tail-flick and hot-plate tests. Bioorganic & Medicinal Chemistry Letters 2014; 24(2):644-8. PubMed PMID: 24360563.
72. Gulati, A., Zhang, Z., Murphy, A. and Lavhale, M.S. Efficacy of centhaquin as a small volume resuscitative agent in severely hemorrhaged rats. American J. Emergency Medicine 2013; 31(9):1315-21. PubMed PMID: 23871440.
73. Dragasis, S., Bassiakou, E., Iacovidou, N., Papadimitriou, L., Andreas Steen, P., Gulati, A. and Xanthos, T. The role of opioid receptor agonists in ischemic preconditioning. European Journal of Pharmacology 2013 Oct 8; 10.1016/j.ejphar.2013.10.001. PubMed PMID: 24120367.
74. Lavhale, M.S., Havalad, S. and Gulati, A. Resuscitative effect of centhaquin following hemorrhagic shock in rats. J. Surgical Research 2013; 179(1): 115-24. PubMed PMID: 22964270.
75. Leonard, M.G. and Gulati, A. Endothelin B Receptor Agonist, IRL-1620, Enhances Angiogenesis and Neurogenesis Following Cerebral Ischemia in Rats. Brain Research 2013; 1528: 28-41. PubMed PMID: 23850649.
76. Bhalla, S., Ali, I., Andurkar, S.V., and Gulati, A. Centhaquin antinociception in mice is mediated by α_{2A} and α_{2B} but not α_{2C} adrenergic receptors. European Journal of Pharmacology 2013; 715(1-3):328-36. PubMed PMID: 23712005.
77. Bhalla, S., Andurkar, S.V., and Gulati, A. Involvement of α_2-adrenoceptors, imidazoline, and endothelin-

A receptors in the effect of agmatine on morphine and oxycodone induced hypothermia in mice. Fundamental & Clinical Pharmacology 2013; 27(5): 498-509. PubMed PMID: 22681550.

78. Bhalla, S., Ali, I., Lee, H., Andurkar, S.V., and Gulati, A. Potentiation of oxycodone analgesia in mice by agmatine and BMS182874 via an imidazoline I_2 receptor-mediated mechanism. Pharmacology, Biochemistry and Behavior 2013; 103: 550–560. PubMed PMID: 23103903.
79. Briyal, S., Lavhale, M.S. and Gulati, A. Repeated administration of centhaquin to pregnant rats did not affect postnatal development and expression of endothelin receptors in the brain, heart or kidney of pups. Arzneimittelforschung. 2012; 62(12): 670-6. PubMed PMID: 23154885.
80. Eppler, M., Donovan, R., Cortes, D.R., Prazad, P., Gulati, A., and Puppala, B. Effect of phototherapy on airborne concentrations of volatile organic compounds found in neonatal incubators. Journal of Neonatal-Perinatal Medicine 2012; 5(3). PubMed PMID: None.
81. Andurkar, S.V., Gendler, L. and Gulati A. Tramadol analgesia is potentiated by clonidine through α2-adrenergic and imidazoline but not by endothelin ET_A receptors in mice. European J. Pharmacology 2012; 683: 109-115. PubMed PMID: 22449379.
82. Kaundal, R.K., Deshpande, T., Gulati, A. and Sharma, S.S. Targeting Endothelin Receptors for Pharmacotherapy of Ischemic Stroke: Current Scenario and Future perspectives. Drug Discovery Today 2012;17(13-14): 793-804. PubMed PMID: 22406696.
83. Gulati, A., Lavhale, M.S., Garcia, D.J. and Havalad, S. Centhaquin improves the resuscitative effect of hypertonic saline in hemorrhaged rats. J. Surgical Research 2012;178(1):415-23. PubMed PMID: 22487389.
84. Leonard, M.G., Briyal, S., and Gulati, A. Endothelin B receptor agonist, IRL-1620, provides long-term neuroprotection in cerebral ischemia in rats. Brain Research 2012; 1464: 14-23. PubMed PMID: 22580085.
85. Gulati, A., Sunila, ES, and Kuttan, G.: IRL-1620, an endothelin-B receptor agonist, enhanced radiation induced reduction in tumor volume in Dalton's Lymphoma Ascites tumor model. Arzneimittelforschung 2012; 62: 14-17. PubMed PMID: 22331757.
86. Briyal, S., Gulati, K. and Gulati, A. Repeated administration of exendin-4 reduces infarction following focal cerebral ischemia in rats. Brain Research 2012; 1427: 23-34. PubMed PMID: 22055454.
87. Leonard, M.G., Briyal, S. and Gulati, A. Endothelin B receptor agonist, IRL-1620, reduces neurological damage following permanent middle cerebral artery occlusion in rats. Brain Research 2011; 1420: 48-58. PubMed PMID: 21959172.
88. Andurkar, S.V. and Gulati, A. Assessment of the analgesic effect of centhaquin in mice tail-flick and hot-plate tests. Pharmacology 2011; 88:233-241. PubMed PMID: 21997570.
89. Bhalla, S., Andurkar, S.V. and Gulati, A. Study of Adrenergic, imidazoline, and endothelin receptors in clonidine-, morphine-, and oxycodone-induced changes in rat body temperature. Pharmacology 2011; 87:169–179. PubMed PMID: 21389745.
90. Briyal, S., Philip, T. and Gulati, A. Endothelin-A receptor antagonists prevent beta-amyloid induced increase in ET_A receptor expression, oxidative stress and cognitive impairment. Journal Alzheimer's Disease 2011; 23: 491-503. PubMed PMID: 21116051.
91. Bhalla, S., Rapolaviciute, V. and Gulati, A. Determination of α2-adrenoceptor and imidazoline receptor involvement in augmentation of morphine and oxycodone analgesia by agmatine and BMS182874. European Journal of Pharmacology 2011; 651: 109–121. PubMed PMID: 21114998.
92. Lavhale, M.S., Briyal, S., Parikh, N. and Gulati, A. Endothelin modulates the cardiovascular effects of clonidine in the rat. Pharmacological. Research 2010; 62: 489-499. PubMed PMID: 20826213.
93. Briyal, S. and Gulati, A. Endothelin antagonist BQ123 potentiates acetaminophen induced hypothermia and reduces infarction following focal cerebral ischemia in rats. European J. Pharmacology, 2010; 644:

73-79. PubMed PMID: 20638381.

94. Gupta, Y.K., Briyal, S. and Gulati, A. Therapeutic potential of herbal drugs in cerebral ischemia. Ind. J. Physiology and Pharmacology 2010; 54:99-122. PubMed PMID: 21090528.
95. Boxwalla, M., Matwyshyn, G., Puppala, B.L., Andurkar, S.V. and Gulati, A. Involvement of imidazoline and opioid receptors in the enhancement of clonidine-induced analgesia by sulfisoxazole. Cand J. Pharmacol Physiol, 2010; 88: 541-552. PubMed PMID: 20555423.
96. Bhalla, S., Zhang, Z., Patterson, N. and Gulati, A. Effect of endothelin-A receptor antagonist on mu, delta and kappa opioid receptor-mediated antinociception in mice. Eur J Pharmacol 2010; 635:62-71. PubMed PMID: 20303944.
97. Negi G, Kumar A, Kaundal RK, Gulati A, Sharma SS. Functional and biochemical evidence indicating beneficial effect of melatonin and nicotinamide alone and in combination in experimental diabetic neuropathy. Neuropharmacology, 2010; 58:585-92. PubMed PMID: 20005237.
98. Sen, A.P. and Gulati, A. Use of magnesium in traumatic brain injury, Neurotherapeutics, 2010: 7: 91-99. PubMed PMID: 20129501.
99. Leonard, M.G. and Gulati, A. Repeated administration of ET_B receptor agonist, IRL-1620, produces tachyphylaxis only to its hypotensive effect. Pharmacological Research 2009 60: 402-410. PubMed PMID: 19666119.
100. Gulati, A., Bhalla, S., Matwyshyn, G., Zhang, Z. and Andurkar, S. Determination of adrenergic and imidazoline receptor involvement in augmentation of morphine and oxycodone analgesia by clonidine and BMS182874. Pharmacology, 2009; 83: 45-58. PubMed PMID: 19052482.
101. Kumar, A., Negi, G., Gulati, A. and Sharma, S.S. Diabetic Neuropathic Pain. Current Research & Information on Pharmaceuticals Sciences (CRIPS) 2008; 9, 69-72. PubMed PMID: None.
102. Negi, G., Kumar, A., Sharma, S.S. and Gulati, A. Biological actions of GLP-1 analogues: Recent advancements and development. Current Research & Information on Pharmaceuticals Sciences (CRIPS) 2008; 9, 73-76. PubMed PMID: None.
103. Reddy, G., Gulati, A., Kuttan, G., Es, S., Lenaz, G. SPI-1620 significantly improves survival in mice treated with radiation 6th International Symposium on Targeted Anticancer Therapies Bethesda, MD, USA, March 20-22, 2008. PubMed PMID: None.
104. Prazad, P., Cortes, D.R., Puppala, B.L., Donovan, R., Kumar, S. and Gulati, A. Airborne concentrations of volatile organic chemicals in a neonatal incubator. J Perinatology, 2008; 28, 534-540. PubMed PMID: 18563165.
105. Wang H, Onyuksel H, Gulati A, Rubinstein I. Self-association of endothelin-1 with sterically stabilized phospholipid nanomicelles amplifies its hemodynamic effects in rats. Journal of Biomedical Nanotechnology 2007;3(3):270-6. PubMed PMID: None.
106. Rajeshkumar NV, Matwyshyn G, Gulati A. IRL-1620, a tumor selective vasodilator, augments the uptake and efficacy of chemotherapeutic agents in prostate tumor rats. Prostate 2007;67(7):701-13. PubMed PMID: 17342753.
107. Briyal S, Gulati A, Gupta YK. Effect of combination of endothelin receptor antagonist (TAK-044) and aspirin in middle cerebral artery occlusion model of acute ischemic stroke in rats. Methods Find Exp Clin Pharmacol 2007;29(4):257-63. PubMed PMID: 17609737.
108. Rai A, Rajeshkumar NV, Gulati A. Effect of the ET(B) receptor agonist, IRL-1620, on paclitaxel plasma pharmacokinetics of breast tumor rats. Exp Biol Med (Maywood) 2006;231(6):1120-2. PubMed PMID: 16741060.
109. Puppala BL, Bhalla S, Matwyshyn G, Gulati A. Involvement of central endothelin receptors in neonatal morphine withdrawal. Exp Biol Med (Maywood) 2006;231(6):1157-60. PubMed PMID: 16741068.
110. Puppala BL, Bhalla S, Matwyshyn G, Gulati A. Role of endothelin (ETA) receptors in neonatal

morphine withdrawal. Peptides 2006;27(6):1514-9. PubMed PMID: 16293342.
111. Matwyshyn GA, Bhalla S, Gulati A. Endothelin ET(A) receptor blockade potentiates morphine analgesia but does not affect gastrointestinal transit in mice. Eur J Pharmacol 2006;543(1-3):48-53. PubMed PMID: 16814278.
112. Lenaz L, Gulati A, Sunila E. IRL-1620 increases the efficacy of radiation treatment in mice bearing lymphoma cell induced tumors. Blood 2006;108(11):269B-B. PubMed PMID: None.
113. Chavanpatil MD, Rajeshkumar NV, Gulati A. Determination of endothelin antagonist BMS182874 in plasma by high-performance liquid chromatography. Pharmazie 2006;61(6):525-7. PubMed PMID: 16826972.
114. Bhalla S, Ciaccio N, Wang ZJ, Gulati A. Involvement of endothelin in morphine tolerance in neuroblastoma (SH-SY5Y) cells. Exp Biol Med (Maywood) 2006;231(6):1152-6. PubMed PMID: 16741067.
115. Wei J, Wu C, Lankin D, Gulrati A, Valyi-Nagy T, Cochran E, et al. Development of novel amyloid imaging agents based upon thioflavin S. Curr Alzheimer Res 2005;2(2):109-14. PubMed PMID: None.
116. Rajeshkumar NV, Rai A, Gulati A. Endothelin B receptor agonist, IRL 1620, a novel adjuvant to enhance the delivery and efficacy of paclitaxel in a rat mammary tumor model. Clinical Cancer Research 2005;11(24):9138S-9S. PubMed PMID: None.
117. Rajeshkumar NV, Rai A, Gulati A. Endothelin B receptor agonist, IRL 1620, enhances the anti-tumor efficacy of paclitaxel in breast tumor rats. Breast Cancer Res Treat 2005;94(3):237-47. PubMed PMID: 16244791.
118. Rai A, Rajeshkumar NV, Shord S, Gulati A. ET(B) receptor agonist, IRL 1620, does not affect paclitaxel plasma pharmacokinetics in breast tumour bearing rats. J Pharm Pharmacol 2005;57(7):869-76. PubMed PMID: 15969946.
119. Rai A, Bhalla S, Rebello SS, Kastrissios H, Gulati A. Disposition of morphine in plasma and cerebrospinal fluid varies during neonatal development in pigs. J Pharm Pharmacol 2005;57(8):981-6. PubMed PMID: 16102253.
120. Haney CR, Buehler PW, Gulati A. Synthesis and characterization of a novel DTPA polymerized hemoglobin based oxygen carrier. Biochim Biophys Acta 2005;1725(3):358-69. PubMed PMID: 16102904.
121. Gupta YK, Briyal S, Sharma U, Jagannathan NR, Gulati A. Effect of endothelin antagonist (TAK-044) on cerebral ischemic volume, oxidative stress markers and neurobehavioral parameters in the middle cerebral artery occlusion model of stroke in rats. Life Sci 2005;77(1):15-27. PubMed PMID: None.
122. Bhalla S, Matwyshyn G, Gulati A. Morphine tolerance does not develop in mice treated with endothelin-A receptor antagonists. Brain Res 2005;1064(1-2):126-35. PubMed PMID: 16289404.
123. Rai A, Bhalla S, Gulati A. Endothelin ETA receptor antagonist did not affect development of tolerance to glyceryl trinitrate in rat. J Pharm Pharmacol 2004;56(2):271-5. PubMed PMID: None.
124. Puppala BL, Matwyshyn G, Bhalla S, Gulati A. Role of Endothelin in Neonatal Morphine Tolerance. J Cardiovasc Pharmacol 2004;44:S383-S5. PubMed PMID: 15838326.
125. Puppala BL, Matwyshyn G, Bhalla S, Gulati A. Evidence that Morphine Tolerance May Be Regulated by Endothelin in the Neonatal Rat. Biol Neonate 2004;86(2):138-44. PubMed PMID: 15218283.
126. Puppala BL, Bhalla S, Matwyshyn G, Gulati A. Involvement of endothelin receptors in neonatal morphine withdrawal. Pediatric Research 2004;56(4):670. PubMed PMID: None.
127. Gulati A, Rai A. Endothelin-1-induced Vasodilatation in Rat Breast Tumor is Mediated through Endothelin-B Receptors. J Cardiovasc Pharmacol 2004;44:S483-S6. PubMed PMID: 15838354.
128. Gulati A, Bhalla S, Matwyshyn G. A novel combination of opiates and endothelin antagonists to manage pain without any tolerance development. J Cardiovasc Pharmacol 2004;44:S129-S31. PubMed

PMID: 15838261.

129. Buehler PW, Haney CR, Gulati A, Ma L, Hsia CJC. Polynitroxyl hemoglobin: a pharmacokinetic study of covalently bound nitroxides to hemoglobin platforms. Free Radic Biol Med 2004;37(1):124-35. PubMed PMID: None.
130. Bhalla S, Matwyshyn G, Gulati A. Central endothelin-B receptor stimulation does not affect morphine analgesia in rats. Pharmacology 2004;72(1):20-5. PubMed PMID: 15292651.
131. Rai A, Gulati A. Evidence for the involvement of ET(B) receptors in ET-1-induced changes in blood flow to the rat breast tumor. Cancer Chemother Pharmacol 2003;51(1):21-8. PubMed PMID: 12497202.
132. Rai A, Bhalla S, Rebello S, Kastrissios H, Gulati A. Disposition of morphine in plasma and cerebrospinal fluid varies during neonatal development. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Salt Lake City, Utah; 2003. PubMed PMID: None.
133. Puppala BL, Bhalla S, Matwyshyn G, Gulati A. Evidence for the involvement of endothelin in neonatal morphine tolerance. Pediatric Research 2003;54(5):781. PubMed PMID: None.
134. Puppala B, Bhalla S, Matwyshyn G, Gulati A. Role of endothelin in neonatal morphine tolerance. In: World Endothelin Conference. Japan; 2003. PubMed PMID: None.
135. Puppala B, Bhalla S, Matwyshyn G, Gulati A. Evidence for the involvement of endothelin in neonatal morphine tolerance. In: Midwest Society for Pediatric Research. Ann Arbor, Michigan; 2003. PubMed PMID: None.
136. Matwyshyn G, Bhalla S, Gulati A. Effect of BMS182874, an Endothelin-A Receptor Antagonist, on Morphine Analgesia in Mice. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Salt Lake City, Utah; 2003. PubMed PMID: None.
137. Gulati A, Rai A. Endothelin-1 induced vasodilatation in rat breast tumor is mediated through ETB receptors. In: World Endothelin Conference. Japan; 2003. PubMed PMID: None.
138. Gulati A, Bhalla S, Rai A. Effect of Beta-Amyloid on Endothelin-1 induced changes in systemic and regional hemodynamics. In: World Endothelin Conference. Japan; 2003. PubMed PMID: None.
139. Gulati A, Bhalla S, Matwyshyn G. A Novel Combination of Opiates and Endothelin Antagonists to Manage Pain Without Any Tolerance Development. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Salt Lake City, Utah; 2003. PubMed PMID: None.
140. Bhalla S, Matwyshyn G, Gulati A. Changes in Morphine and Endothelin Induced GTP Stimulation in Morphine Tolerant Mice. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Salt Lake City, Utah; 2003. PubMed PMID: None.
141. Bhalla S, Matwyshyn G, Gulati A. Restoration of morphine analgesia in morphine tolerant rats using endothelin receptor antagonists. In: Pharmaceutics Graduate Student Research Meeting. University of Illinois at Chicago, Chicago, Illinois; 2003. PubMed PMID: None.
142. Bhalla S, Matwyshyn G, Gulati A. Endothelin receptor antagonists restore morphine analgesia in morphine tolerant rats. Peptides 2003;24(4):553-61. PubMed PMID: 12860199.
143. Gulati, A. Effect of Diaspirin Crosslinked Hemoglobin on Systemic and Regional Blood Circulation. Tissue Oxygenation in Acute Medicine, Springer Science 2002, January 21, pages 307-317.
144. Sharma AC, Singh G, Gulati A. Decompensation characterized by decreased perfusion of the heart and brain during hemorrhagic shock: role of endothelin-1. J Trauma 2002;53(3):531-6. PubMed PMID: 12352492.
145. Sharma AC, Gulati A. Resuscitation with proendothelin-1 improves hypotensive shock-induced regional perfusion alterations. Faseb Journal 2002;16(4):A569-A. PubMed PMID: None.
146. Rai A, Gulati A. Endothelin-1 (ET-1) induced vasodilatation in rat breast tumor is mediated through ETB receptors. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Toronto, Ontario, Canada; 2002. PubMed PMID: None.

147. Gulati A, Bhalla S, Matwyshyn G. BQ123, an endothelin antagonist, potentiates morphine analgesia, prevents morphine tolerance to analgesia, and does not affect naloxone-precipitated withdrawal: A novel approach to cancer pain. In: Summer Neuropeptide Conference. Marco Island, Florida; 2002. PubMed PMID: None.
148. Bhalla S, Matwyshyn G, Gulati A. Potentiation of morphine analgesia by endothelin receptor antagonist. In: Pharmaceutics Graduate Student Research Meeting. University of Nebraska Medical Center, Nebraska, Omaha; 2002. PubMed PMID: None.
149. Bhalla S, Matwyshyn G, Gulati A. Effect of BQ123 on morphine analgesia. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Toronto, Ontario, Canada; 2002. PubMed PMID: None.
150. Bhalla S, Matwyshyn G, Gulati A. Potentiation of morphine analgesia by BQ123, an endothelin antagonist. Peptides 2002;23(10):1837-45. PubMed PMID: 12383872.
151. Sharma AC, Singh G, Ta-Chen W, Gulati A. Endothelin-1 during compensatory and decompensatory hypotensive shock. Faseb Journal 2001;15(4):A553-A. PubMed PMID: None.
152. Palaparthy R, Saini BK, Gulati A. Modulation of diaspirin crosslinked hemoglobin induced systemic and regional hemodynamic response by ethanol in normal rats. Life Sci 2001;68(12):1383-94. PubMed PMID: 11388690.
153. Palaparthy R, Kastrissios H, Gulati A. Pharmacokinetics of diaspirin cross-linked haemoglobin in a rat model of hepatic cirrhosis. J Pharm Pharmacol 2001;53(2):179-85. PubMed PMID: 11273013.
154. Palaparthy R, Bhalla S, Rai A, Gulati A. Modulation of Diaspirin crosslinked hemoglobin induced systemic and regional hemodynamic responses by cocaine in normal rats. In: American Association of Pharmaceutical Scientists, Annual Meeting and Exposition. Denver Colorado; 2001. PubMed PMID: None.
155. Palaparthy R, Wang HS, Gulati A. Current aspects in pharmacology of modified hemoglobins. Advanced Drug Delivery Reviews 2000;40(3):185-98. PubMed PMID: 10837789.
156. Haney CR, Buehler PW, Gulati A. Purification and chemical modifications of hemoglobin in developing hemoglobin based oxygen carriers. Adv Drug Deliv Rev 2000;40(3):153-69. PubMed PMID: 10837787.
157. Gulati A. Blood substitutes - Preface. Advanced Drug Delivery Reviews 2000;40(3):129-30. PubMed PMID: None.
158. Buehler PW, Mehendale S, Wang HS, Xie JT, Ma L, Trimble CE, et al. Resuscitative effects of polynitroxylated alpha alpha-cross-linked hemoglobin following severe hemorrhage in the rat. Free Radical Biology and Medicine 2000;29(8):764-74. PubMed PMID: 11053778.
159. Wang H, Li P, Palaparthy R, Onyuksel H, Rubinstein I, Gulati A. Formulation of endothelin-1 in sterically stabilized phospholipid micelles potentiate its hemodynamics effects in rats. Faseb Journal 1999;13(4):A156-A. PubMed PMID: None.
160. Palaparthy R, Kastrissios H, Sen A, Gulati A. Pharmacokinetics of diaspirin crosslinked hemoglobin (DCLHb) in a rat model of hepatic cirrhosis. Faseb Journal 1999;13(5):A810-A. PubMed PMID: None.
161. Mehendale S, Buehler P, Wang H, Zielinsky N, Fortman J, Gulati A. Effect of diaspirin crosslinked hemoglobin (DCLHb), a hemoglobin therapeutic, on coronary circulation in rhesus monkeys. Faseb Journal 1999;13(5):A1086-A. PubMed PMID: None.
162. John EG, Ochoa C, Samuel S, Palaparthy R, Rao S, Fornell LC, et al. Early renal dysfunction and endothelin receptors in septic neonatal piglets. Pediatric Research 1999;45(4):333A-A. PubMed PMID: None.
163. Gulati A, Barve A, Sen AP. Pharmacology of hemoglobin therapeutics. J Lab Clin Med 1999;133(2):112-9. PubMed PMID: 9989762.

164. Buehler P, Mehendale S, Wang H, Gulati A, Ma L, Trimble CE, et al. Polynitroxylation reduces the pressor activity of alpha alpha-crosslinked hemoglobin: Hemorrhagic shock resuscitation in the rat. Shock 1999;11:16. PubMed PMID: None.
165. Barve A, Palaparthy R, Gulati A. Effect of diaspirin crosslinked hemoglobin (DCLHb) on plasma and tissue ET-1 concentration in rats. Faseb Journal 1999;13(5):A758-A. PubMed PMID: None.
166. Burhop K, Ince C, Gulati A and Malcolm D. The effects of diaspirin crosslinked hemoglobin (DCLHb) on oxygenation, perfusion and resuscitation: preclinical experience. Critical Care 1998, 2(Suppl 1):P073.
167. Wang HS, Sen AP, Gulati A. Diaspirin crosslinked hemoglobin (DCLHb) improves splanchnic oxygen utilization in hemorrhaged rats. Faseb Journal 1998;12(5):A991-A. PubMed PMID: None.
168. Wang H, Sen AP, Gulati A. Effect of diaspirin crosslinked hemoglobin (DCLHb) on splanchnic oxygenation and blood perfusion in hemorrhaged rats. Naunyn-Schmiedebergs Archives of Pharmacology 1998;358(1):R236-R. PubMed PMID: None.
169. Sen AP, Sharma AC, Singh G, Gulati A. ET and NO mechanisms in the resuscitative effect of diaspirin crosslinked hemoglobin (DCLHb) in hemorrhaged rats. Naunyn-Schmiedebergs Archives of Pharmacology 1998;358(1):R236-R. PubMed PMID: None.
170. Sen AP, Dong YM, Saxena PR, Gulati A. Modulation of resuscitative effect of diaspirin cross-linked hemoglobin by L-NAME in rats. Shock 1998;9(3):223-30. PubMed PMID: 9525331.
171. Sen AP, Dong YM, Gulati A. Effect of L-NAME on the resuscitative effect of diaspirin crosslinked hemoglobin (DCLHb) in hemorrhaged rats. Faseb Journal 1998;12(5):A991-A. PubMed PMID: None.
172. Rubinstein I, Artwohl JE, Kumar A, Gao X, Gulati A. Endothelin-1-like immunoreactivity in hamsters with spontaneous hypertension. Faseb Journal 1998;12(4):A91-A. PubMed PMID: None.
173. Mehendale S, Palaparthy R, Gulati A. An increase in endothelin-1 concentration following blood coagulation is contributed by neutrophils and mononuclear leucocytes but not by platelets. Naunyn-Schmiedebergs Archives of Pharmacology 1998;358(1):R290-R. PubMed PMID: None.
174. Gulati A, Sen AP. Effect of diaspirin crosslinked hemoglobin (DCLHb) on regional blood circulation of severely hemorrhaged rats. Circulation 1998;98(17):132. PubMed PMID: None.
175. Villar VM, Groves MJ, Tian X, Reed A, Morcillo EJ, Cortijo J, Buehler PW and Gulati A. Acute Cardiorespiratory effects of PS1, an antineoplastic glucan, in rats. Pharm. Pharmacol. Commun. 1998: 4: 447-449. PubMed PMID: None.
176. Gulati A, Sen AP. Dose-dependent effect of diaspirin cross-linked hemoglobin on regional blood circulation of severely hemorrhaged rats. Shock 1998;9(1):65-73. PubMed PMID: 9466476.
177. Gulati A, Artwohl JE, Kumar A, Gao XP, Rubinstein I. Endothelin-1-like immunoreactivity in a new rodent model of spontaneous hypertension. Am J Hypertens 1998;11(7):866-9. PubMed PMID: None.
178. Barve AS, Gulati A. Effect of prazosin and metoprolol on cardiovascular actions of diaspirin crosslinked hemoglobin in rats. Naunyn-Schmiedebergs Archives of Pharmacology 1998;358(1):R642-R. PubMed PMID: None.
179. Avoub IM, Sen AP, Gulati A. Dexamethasone does not influence the efficacy of diaspirin crosslinked hemoglobin (DCLHb) in hemorrhagic shock. Faseb Journal 1998;12(5):A991-A. PubMed PMID: None.
180. Sen AP, Dong Y, Gulati A. Effect of diaspirin crosslinked hemoglobin on systemic and regional blood circulation in pregnant rats. Artif Cells Blood Substit Immobil Biotechnol 1997;25(3):275-88. PubMed PMID: 9989762.
181. Murlas CG, Sharma AC, Gulati A, Najmabadi F. Interleukin-1 beta increases airway epithelial cell mitogenesis partly by stimulating endothelin-1 production. Lung 1997;175(2):117-26. PubMed PMID: None.
182. Kumar A, Sen AP, Saxena PR, Gulati A. Resuscitation with diaspirin crosslinked hemoglobin increases cerebral and renal blood perfusion in hemorrhaged rats. Artif Cells Blood Substit Immobil

Biotechnol 1997;25(1-2):85-94. PubMed PMID: 9083629.

183. Kumar A, Morrison S, Gulati A. Effect of ETA receptor antagonists on cardiovascular responses induced by centrally administered sarafotoxin 6b: role of sympathetic nervous system. Peptides 1997;18(6):855-64. PubMed PMID: None.
184. Gulati A, Sen AP, Sharma AC, Singh G. Role of ET and NO in resuscitative effect of diaspirin cross-linked hemoglobin after hemorrhage in rat. Am J Physiol 1997;273(2 Pt 2):H827-36. PubMed PMID: 9277500.
185. Gulati A, Rebello S, Kumar A. Role of sympathetic nervous system in cardiovascular effects of centrally administered endothelin-1 in rats. Am J Physiol 1997;273(3 Pt 2):H1177-86. PubMed PMID: None.
186. Gulati A, Kumar A, Morrison S, Shahani BT. Effect of centrally administered endothelin agonists on systemic and regional blood circulation in the rat: role of sympathetic nervous system. Neuropeptides 1997;31(4):301-9. PubMed PMID: None.
187. Gulati A. Recent advances in the development of haemoglobin-based blood substitutes. Expert Opin Investig Drugs 1997;6(11):1659-69. PubMed PMID: 15989570.
188. Barve A, Sen AP, Saxena PR, Gulati A. Dose response effect of diaspirin crosslinked hemoglobin (DCLHb) on systemic hemodynamics and regional blood circulation in rats. Artif Cells Blood Substit Immobil Biotechnol 1997;25(1-2):75-84. PubMed PMID: 9083628.
189. Singh G, Sharma AC, Gulati A. Effect of hemorrhage on systemic and regional blood circulation and endothelin (ET)-1 concentration in rat. Faseb Journal 1996;10(3):3461. PubMed PMID: None.
190. Sen AP, Singh R, Gulati A. Effect of diaspirin crosslinked hemoglobin (DCLHb(TM)) on the survival, systemic and regional blood circulation of severely hemorrhaged rats. Faseb Journal 1996;10(3):3460. PubMed PMID: None.
191. Kumar A, Shahani BT, Gulati A. Central cardiovascular effects of sarafotoxin 6b are mediated through ET(A) receptors in the rats. Faseb Journal 1996;10(3):1763. PubMed PMID: None.
192. Kumar A, Shahani BT, Gulati A. Modification of systemic and regional circulatory effects of intracerebroventricular administration of endothelin-1 by propranolol in anesthetized rats. Gen Pharmacol 1996;27(6):1025-33. PubMed PMID: None.
193. Gulati A, Sharma AC, Singh G. Role of endothelin in the cardiovascular effects of diaspirin crosslinked and stroma reduced hemoglobin. Crit Care Med 1996;24(1):137-47. PubMed PMID: 8565519.
194. Gulati A, Sen AP, Singh G, Sharma AC. Reversal of hemorrhagic shock by diaspirin crosslinked hemoglobin (DCLHb(TM)): Role of endothelin (ET) and nitric oxide (NO). Faseb Journal 1996;10(3):3463. PubMed PMID: None.
195. Gulati A, Kumar A, Shahani BT. Cardiovascular effects of centrally administered endothelin-1 and its relationship to changes in cerebral blood flow. Life Sci 1996;58(5):437-45. PubMed PMID: None.
196. Evans RR, Phillips BG, Singh G, Bauman JL, Gulati A. Racial and gender differences in endothelin-1. Am J Cardiol 1996;78(4):486-8. PubMed PMID: None.
197. Crayton JW, Joshi I, Gulati A, Arora RC, Wolf WA. Effect of corticosterone on serotonin and catecholamine receptors and uptake sites in rat frontal cortex. Brain Res 1996;728(2):260-2. PubMed PMID: None.
198. Barve A, Sen AP, Gulati A. Dose response study of the cardiovascular effects of diaspirin crosslinked hemoglobin (DCLHb(TM)) solution in rats. Faseb Journal 1996;10(3):3462. PubMed PMID: None.
199. Singh R, Chung SM, Sen AP, Gulati A. Effect of the endothelin-converting enzyme-inhibitor, phosphoramidon, on diaspirin cross-linked hemoglobin induced systemic hemodynamic and regional circulatory effects in rats. Faseb Journal 1995;9(4):A937-A. PubMed PMID: None.
200. Singh G, Sharma AC, Gulati A. Effect of diaspirin cross-linked and stroma-reduced hemoglobin on

endothelin-1 like immunoreactivity in the brain and peripheral regions of rats. Faseb Journal 1995;9(4):A937-A. PubMed PMID: None.

201. Sharma AC, Singh G, Gulati A. Cardiovascular effects of diaspirin cross-linked hemoglobin are partially mediated through a nitric-oxide (NO) mechanism. Faseb Journal 1995;9(4):A937-A. PubMed PMID: None.
202. Sharma AC, Singh G, Gulati A. Role of NO mechanism in cardiovascular effects of diaspirin cross-linked hemoglobin in anesthetized rats. Am J Physiol 1995;269(4 Pt 2):H1379-88. PubMed PMID: None.
203. Sharma AC, Gulati A. Yohimbine modulates diaspirin crosslinked hemoglobin-induced systemic hemodynamics and regional circulatory effects. Crit Care Med 1995;23(5):874-84. PubMed PMID: 7736746.
204. Sen AP, Sharma AC, Gulati A. Cardiovascular changes following hemorrhage in rats are reversed by diaspirin cross-linked hemoglobin. Faseb Journal 1995;9(4):A937-A. PubMed PMID: None.
205. Rebello S, Singh G, Gulati A. Elevated levels of endothelin-1 following unilateral cerebral-ischemia in rats. Faseb Journal 1995;9(4):A937-A. PubMed PMID: None.
206. Rebello S, Roy S, Saxena PR, Gulati A. Systemic hemodynamic and regional circulatory effects of centrally administered endothelin-1 are mediated through ETA receptors. Brain Res 1995;676(1):141-50. PubMed PMID: None.
207. Murlas CG, Gulati A, Singh G, Najmabadi F. Endothelin-1 stimulates proliferation of normal airway epithelial cells. Biochem Biophys Res Commun 1995;212(3):953-9. PubMed PMID: None.
208. Masinde LE, Bertelsen GA, Schlemmer RF, Jr., Gulati A, Hickey AJ. Cocaine hydrochloride in poly(L-lactide) microspheres potentiates effects on the locomotion of rats+. Methods Find Exp Clin Pharmacol 1995;17(9):597-600. PubMed PMID: None.
209. Kumar A, Gulati A, Shahani BT. Central cardiovascular effects of endothelin-1 (ET-1) could be attenuated by propranalol in rats. Circulation 1995;92(8):1054. PubMed PMID: None.
210. Iyer RS, Singh G, Rebello S, Roy S, Bhat R, Vidyasagar D, et al. Changes in the concentration of endothelin-1 during development of hypertensive rats. Pharmacology 1995;51(2):96-104. PubMed PMID: None.
211. Gulati A, Singh R, Chung SM, Sen AP. Role of endothelin-converting enzyme in the systemic hemodynamics and regional circulatory effects of proendothelin-1 (1-38) and diaspirin cross-linked hemoglobin in rats. J Lab Clin Med 1995;126(6):559-70. PubMed PMID: None.
212. Gulati A, Singh G, Rebello S, Sharma AC. Effect of diaspirin crosslinked and stroma-reduced hemoglobin on mean arterial pressure and endothelin-1 concentration in rats. Life Sci 1995;56(17):1433-42. PubMed PMID: 8847955.
213. Gulati A, Sharma AC, Robbie G, Saxena PR. Endothelin ETA receptor antagonist, BQ-123, blocks the vasoconstriction induced by sarafotoxin 6b in the heart but not in other vascular beds. Gen Pharmacol 1995;26(1):183-93. PubMed PMID: None.
214. Gulati A, Rebello S, Roy S, Saxena PR. Cardiovascular effects of centrally administered endothelin-1 in rats. J Cardiovasc Pharmacol 1995;26(Suppl 3):S244-6. PubMed PMID: None.
215. Gulati A, Kumar A, Shahani BT. Cardiovascular effects of centrally administered endothelin-1 and its relationship to changes in cerebral blood flow. Life Sciences 1995;58(5):437-45. PubMed PMID: None.
216. Gulati A, Chung SM, Singh R, Sen AP. Effect of endothelin (ET) converting-enzyme-inhibitor, phosphoramidon, on big ET-1 induced regional blood-flow and systemic hemodynamic-effects in rats. Faseb Journal 1995;9(4):A936-A. PubMed PMID: None.
217. Bhat R, John E, Chari G, Shankararao R, Fornell L, Gulati A, et al. Renal actions of endothelin-1 in newborn piglets: dose-effect relation and the effects of receptor antagonist (BQ-123) and cyclooxygenase inhibitor (indomethacin). J Lab Clin Med 1995;126(5):458-69. PubMed PMID: None.

218. Verma S, Singh G, Mohan P, Gulati A. A novel class of highly potent endothelin receptor ligands - sulfonic-acid polymers. Faseb Journal 1994;8(4):A103-A. PubMed PMID: None.
219. Thompson EB, Singh G, Sharma AC, Gulati A. Changes in the renal endothelin mechanism of hyperthyroid and hypothyroid rats. Faseb Journal 1994;8(4):A573-A. PubMed PMID: None.
220. Singh G, Thompson EB, Gulati A. Altered endothelin 1 concentration in brain and peripheral regions during thyroid dysfunction. Pharmacology 1994;49(3):184-91. PubMed PMID: None.
221. Singh G, Sharma AC, Thompson EB, Gulati A. Renal endothelin mechanism in altered thyroid states. Life Sci 1994;54(24):1901-8. PubMed PMID: None.
222. Singh G, Rebello S, Thompson EB, Gulati A. Endothelin (ET) mechanisms in altered thyroid states. Faseb Journal 1994;8(4):A573-A. PubMed PMID: None.
223. Sharma AC, Rebello S, Gulati A. Regional circulatory and systemic hemodynamic effects of diaspirin cross-linked hemoglobin in the rat. Artif Cells Blood Substit Immobil Biotechnol 1994;22(3):593-602. PubMed PMID: 7994379.
224. Sharma AC, Gulati A. Role of nitric-oxide in cardiovascular effects of diaspirin cross-linked (DCLHb(tm)) and stroma free hemoglobin (SFHb). Faseb Journal 1994;8(5):A625-A. PubMed PMID: None.
225. Sharma AC, Gulati A. Effect of diaspirin cross-linked hemoglobin and norepinephrine on systemic hemodynamics and regional circulation in rats. J Lab Clin Med 1994;123(2):299-308. PubMed PMID: None.
226. Shahani BT, Singh G, Gulati A. Effect of repeated exercise on central endothelin receptors. Faseb Journal 1994;8(5):A727-A. PubMed PMID: None.
227. Roy S, Rebello S, Marwah BS, Saxena PR, Gulati A. Systemic hemodynamics and regional circulatory effects of centrally administered endothelin (ET). Faseb Journal 1994;8(4):A333-A. PubMed PMID: None.
228. Robbie G, Sharma AC, Gulati A. Endothelin (ETA) receptor antagonist, BQ-123, blocks the effect of sarafotoxin on coronary blood-flow but not in other regions. Faseb Journal 1994;8(5):A625-A. PubMed PMID: None.
229. Rebello S, Gulati A. Diaspirin cross-linked hemoglobin reverses the reduction in cerebral blood-flow induced by central endothelin (ET). Faseb Journal 1994;8(5):A828-A. PubMed PMID: None.
230. Mohan P, Verma S, Singh G, Gulati A. Sulfonic-acid polymers - a novel class of highly potent ligands for brain endothelin receptors. Abstracts of Papers of the American Chemical Society 1994;207:43-MEDI. PubMed PMID: None.
231. Iyer RS, Rebello S, Singh G, Gulati A, Bhat R, Griffin A, et al. Endothelin-1 (ET-1) levels in brain and cardiovascular-system of hypertensive rats (SHR) and normotensive (WKY) rats during development. Pediatric Research 1994;35(4):A84-A. PubMed PMID: None.
232. Iyer R, Rebello S, Singh G, Gulati A, Bhat R, Vidyasagar D. Endothelin concentration in the central nervous and cardiovascular systems during development of hypertensive rats. Faseb Journal 1994;8(4):A76-A. PubMed PMID: None.
233. Gulati A, Singh G, Thompson EB. Effect of altered thyroid states on central endothelin (ET) mechanisms. Pediatric Research 1994;35(4):A100-A. PubMed PMID: None.
234. Gulati A, Sharma AC, Singh G. Regional circulatory effects of diaspirin cross-linked hemoglobin can be blocked by the endothelin (ET) antagonist, BQ-123. Faseb Journal 1994;8(5):A625-A. PubMed PMID: None.
235. Gulati A, Sharma AC, Burhop KE. Effect of stroma-free hemoglobin and diaspirin cross-linked hemoglobin on the regional circulation and systemic hemodynamics. Life Sci 1994;55(10):827-37. PubMed PMID: 8072379.

236. Gulati A, Sharma AC. Evidence for the existence of a different type of endothelin (ET) receptor in the coronary blood-vessels of rats. Pediatric Research 1994;35(4):A35-A. PubMed PMID: None.
237. Gulati A, Sharma AC. Prazosin blocks the pressor but not the regional circulatory effects of diaspirin crosslinked hemoglobin. Life Sci 1994;55(2):121-30. PubMed PMID: None.
238. Gulati A, Rebello S, Saxena PR. Role of central endothelin (ET) mechanisms in the regulation of regional blood-circulation. Pediatric Research 1994;35(4):A52-A. PubMed PMID: None.
239. Gulati A, Rebello S. Diaspirin cross-linked hemoglobin (DCLHb): involvement of adrenergic mechanisms in the pressor effect. Artif Cells Blood Substit Immobil Biotechnol 1994;22(3):603-12. PubMed PMID: 7994380.
240. Gulati A, Rebello S. Role of adrenergic mechanisms in the pressor effect of diaspirin cross-linked hemoglobin. J Lab Clin Med 1994;124(1):125-33. PubMed PMID: 7913484.
241. Burhop KE, Sharma AC, Gulati A. Effect of unmodified stroma-free and diaspirin cross-linked hemoglobin on the regional circulation and systemic hemodynamics. Faseb Journal 1994;8(5):A625-A. PubMed PMID: None.
242. Bhat R, John E, Chari G, Fornell L, Shankararao R, Gulati A, et al. Endothelin-1 (ET-1) induced renal dysfunction is abolished by receptor antagonist but not by indomethacin. Faseb Journal 1994;8(4):A585-A. PubMed PMID: None.
243. Wielbo D, Bhat R, Chari G, Vidyasagar D, Tebbett IR, Gulati A. High-performance liquid chromatographic determination of morphine and its metabolites in plasma using diode-array detection. J Chromatogr 1993;615(1):164-8. PubMed PMID: None.
244. Thompson EB, Rebello S, Gulati A. Endothelin mechanisms in thyroid-dysfunction. Faseb Journal 1993;7(3):A34-A. PubMed PMID: None.
245. Roy S, Rebello S, Marwah BS, Gulati A. Alterations in endothelin levels and its receptors in the central-nervous-system of hypertensive rats. Faseb Journal 1993;7(3):A248-A. PubMed PMID: None.
246. Rebello S, Thompson EB, Gulati A. Endothelin mechanisms in altered thyroid states in the rat. Eur J Pharmacol 1993;237(1):9-16. PubMed PMID: None.
247. Rebello S, Gulati A. Effect of diaspirin a-a cross-linked hemoglobin solution (DCLHb) on systemic hemodynamics and regional circulation in rats. Faseb Journal 1993;7(4):A750-A. PubMed PMID: None.
248. Iyer R, Rebello S, Singh G, Gulati A, Bhat R, Vidyasagar D. Concentration of endothelin in the central-nervous-system of hypertensive rats during development. Clinical Research 1993;41(3):A650-A. PubMed PMID: None.
249. Gulati A, Srimal RC. Potentiation of pressor and antagonism of depressor effect of clonidine by endothelin (ET-1). Faseb Journal 1993;7(3):A34-A. PubMed PMID: None.
250. Gulati A, Srimal RC. Endothelin antagonizes the hypotension and potentiates the hypertension induced by clonidine. Eur J Pharmacol 1993;230(3):293-300. PubMed PMID: None.
251. Gulati A, Bhat R. Changes in the entry of morphine in the central-nervous-system of piglets during development. Clinical Research 1993;41(3):A625-A. PubMed PMID: None.
252. Gulati A, Arora RC, Crayton J. Central serotonergic uptake mechanisms in hypertensive rats: effects of clonidine and centhaquin. Eur J Pharmacol 1993;231(2):151-6.
253. Arora RC, Gulati A, Yeoh HC, Joshi I, Crayton JW. Ex vivo effect of corticosterone on serotonergic (5-HT) and adrenergic (alpha-2) receptors in rat-brain. Faseb Journal 1993;7(3):A264-A.
254. Arora RC, Gulati A, Crayton JW. Aging and 3H-paroxetine binding in rat brain: effect of imipramine and tetrahydroacridine. Life Sci 1993;52(22):1767-75.
255. Gulati A, Srimal RC. Endothelin mechanisms in the central nervous system - A target for drug development. Drug Development Research 1992;26(4):361-87.
256. Gulati A, Rebello S, Chari G, Bhat R. Endothelin (ET) levels and its receptors in the brain of preterm,

term and post term rats. Clinical Research 1992;40(2):A369-A.
257. Gulati A, Rebello S, Chari G, Bhat R. Ontogeny of endothelin and its receptors in rat brain. Life Sci 1992;51(22):1715-24.
258. Gulati A, Rebello S. Characteristics of endothelin receptors in the central nervous system of spontaneously hypertensive rats. Neuropharmacology 1992;31(3):243-50.
259. Gulati A. High-performance liquid-chromatographic determination of morphine, morphine-3-glucuronide, morphine-6-glucuronide and codeine in biological samples using multiwavelength forward optical-detection - Reply. Journal of Chromatography-Biomedical Applications 1992;578(2):335-6.
260. Gulati A. Evidence for antagonistic activity of endothelin for clonidine induced hypotension and bradycardia. Life Sci 1992;50(2):153-60.
261. Bhat R, Abu-Harb M, Chari G, Gulati A. Morphine metabolism in acutely ill preterm newborn infants. J Pediatr 1992;120(5):795-9.
262. Bhargava HN, Gulati A, Rahmani NH. Down-regulation of central receptors for thyrotropin-releasing hormone in kappa opiate agonist-induced abstinence in the rat. Neuropharmacology 1992;31(2):137-41.
263. Bertelsen GA, Rebello S, Gulati A. Characteristics of endothelin receptors in the cerebral cortex and spinal cord of aged rats. Neurobiol Aging 1992;13(4):513-9.
264. Rebello S, Gulati A. Endothelin receptor down-regulation in ventrolateral medulla and hypothalamus of spontaneously hypertensive rats. Faseb Journal 1991;5(5):A1410-A.
265. Rahmani NH, Gulati A, Bhargava HN. The binding of 3H-naltrexone to brain and spinal-cord membranes of spontaneously hypertensive and normotensive wistar-kyoto rats. Faseb Journal 1991;5(5):A1410-A.
266. Rahmani NH, Gulati A, Bhargava HN. Differential effects of two kappa-opiate agonists, U-50,488H and U- 69,593, on the binding of 3H-(3-MeHis2) thyrotropin-releasing hormone to rat spinal cord and amygdala membranes. Pharmacology 1991;43(3):156-62.
267. Rahmani NH, Gulati A, Bhargava HN. Opiate antagonist binding sites in discrete brain regions of spontaneously hypertensive and normotensive Wistar-Kyoto rats. Life Sci 1991;48(26):2499-504.
268. Matwyshyn GA, Rahmani NH, Gulati A, Bhargava HN. Kappa-opiate receptors in morphine tolerant-dependent and abstinent rats. Faseb Journal 1991;5(4):A862-A.
269. Gulati A, Rebello S. Down-regulation of endothelin receptors in the ventrolateral medulla of spontaneously hypertensive rats. Life Sci 1991;48(12):1207-15.
270. Gulati A, Rahmani NH, Bhargava HN. Blood-brain-barrier (BBB) permeability in morphine tolerant-dependent and abstinent rats. Faseb Journal 1991;5(4):A497-A.
271. Gulati A, Hussain G, Srimal RC. Effect of repeated administration of clonidine on adrenergic, cholinergic (muscarinic), dopaminergic, and serotonergic receptors in brain-regions of rats. Drug Development Research 1991;22(2):141-52.
272. Gulati A, Hussain G, Srimal RC. Effect of repeated administration of centhaquin, a centrally acting hypotensive drug, on adrenergic, cholinergic (muscarinic), dopaminergic, and serotonergic receptors in brain-regions of rat. Drug Development Research 1991;23(4):307-23.
273. Gulati A, Bhat R, Harb M, Chari G, Tebbett I. Permeability of morphine across the blood-brain-barrier (BBB) in preterm neonates. Pediatric Research 1991;29(4):A359-A.
274. Gulati A. Down-regulation of alpha 2 adrenoceptors in ventrolateral medulla of spontaneously hypertensive rats. Life Sci 1991;48(12):1199-206.
275. Gulati A. Characteristics of endothelin binding sites in the spinal cord of spontaneously hypertensive rats. Eur J Pharmacol 1991;204(3):287-93.
276. Chari G, Gulati A, Bhat R, Tebbett IR. High-performance liquid chromatographic determination of morphine, morphine-3-glucuronide, morphine-6-glucuronide and codeine in biological samples using

multi-wavelength forward optical detection. J Chromatogr 1991;571(1-2):263-70.
277. Bhat R, Gulati A, Chari G, Tebbett I. Pharmacokinetics and metabolism of morphine-sulfate in neonates. Faseb Journal 1991;5(5):A1237-A.
278. Bhat R, Chari G, Harb M, Gulati A, Tebbett I. Morphine-metabolism in preterm neonates. Pediatric Research 1991;29(4):A57-A.
279. Bhargava HN, Villar VM, Gulati A, Chari G. Analgesic and hyperthermic effects of intravenously administered morphine in the rat are related to its serum levels. J Pharmacol Exp Ther 1991;258(2):511-6.
280. Bhargava HN, Rahmani NH, Gulati A. The binding of 3H-DSTLE and 3H-DPDPE to brain and spinal-cord of morphine tolerant-dependent and abstinent rats. Faseb Journal 1991;5(5):A1223-A.
281. Bhargava HN, Gulati A, Ramarao P. Binding characteristics of [3H]SCH 23390 in spinal cord and discrete brain regions of kappa-opiate tolerant-dependent and abstinent rats. Pharmacology 1991;42(3):121-7.
282. Bhargava HN, Gulati A, Ramarao P. Down-regulation of brain and spinal cord K-opiate receptors in spontaneously hypertensive, Wistar-Kyoto normotensive, and Sprague- Dawley rats by chronic treatment with U-50, 488H. Biochem Pharmacol 1991;42(1):25-9.
283. Bhargava HN, Gulati A, Rahmani NH. Effects of morphine tolerance-dependence and abstinence on kappa-opiate receptors of rat brain and spinal cord. Biochem Pharmacol 1991;42(6):1302-6.
284. Bhargava HN, Gulati A, Rahmani NH. Differences in the binding of [3H][D-Ser2,Thr6]leucine-enkephalin and [3H][D-Pen2,D-Pen5]enkephalin to brain membranes of morphine tolerant- dependent rats. Eur J Pharmacol 1991;202(3):403-8.
285. Bhargava HN, Gulati A. The effect of morphine tolerance-dependence and abstinence on mu, delta, and kappa opiate receptors of discrete brain regions and spinal cord of the rat. NIDA Res Monogr 1991;105:530-1.
286. Anand M, Gopal K, Khanna RN, Verma N, Ray PK, Gulati A, et al. Cadmium and lindane interaction in cardiovascular toxicity. Journal of Environmental Biology 1991;12(1):9-14.
287. Advokat C, Gulati A. Spinal transection reduces both spinal antinociception and CNS concentration of systemically administered morphine in rats. Brain Res 1991;555(2):251-8.
288. Rahmani NH, Gulati A, Bhargava HN. Spinal cord thyrotropin releasing hormone receptors of morphine tolerant-dependent and abstinent rats. Peptides 1990;11(4):693-5.
289. Gulati A, Ramarao P, Bhargava HN. The binding of H-3 DAMGO to discrete brain-regions and spinal-cord of spontaneously hypertensive (SHR) and wistar-kyoto (WKY) normotensive rats. European Journal of Pharmacology 1990;183(6):2310-.
290. Gulati A, Mahesh AK, Misra PK. Blood-brain-barrier (BBB) permeability studies in control and icteric neonates. Pediatric Research 1990;27(4):A206-A.
291. Gulati A, Bhargava HN. Effect of melanotropin release inhibiting factor on changes by haloperidol and centbutindole in cerebral cortical 5-hydroxytryptamine receptors. Pharmacology 1990;41(2):98-106.
292. Gulati A, Bhargava HN. Characteristics of central binding sites for [3H] DAMGO in spontaneously hypertensive rats. Life Sci 1990;47(2):159-66.
293. Gulati A, Bhargava HN. Down-regulation of hypothalamic 5-HT1A receptors in morphine-abstinent rats. Eur J Pharmacol 1990;182(2):253-9.
294. Bhat R, Chari G, Gulati A, Aldana O, Velamati R, Bhargava H. Pharmacokinetics of a single dose of morphine in preterm infants during the first week of life. J Pediatr 1990;117(3):477-81.
295. Bhargava HN, Ramarao P, Gulati A. Effect of repeated administration of U-50,488H on the binding of 3H-SCH 23390 and 3H-spiperone to rat brain and spinal cord dopamine receptors. Prog Clin Biol Res 1990;328:153-6.

296. Bhargava HN, Gulati A. Down-regulation of central mu-opiate and delta-opiate receptors in morphine tolerant-dependent rats. European Journal of Pharmacology 1990;183(2):206-7.
297. Bhargava HN, Gulati A. Effect of chronic administration of morphine and its withdrawal on the rat brain and spinal cord dopamine D1 receptors. Prog Clin Biol Res 1990;328:307-10.
298. Bhargava HN, Gulati A. Modification of brain and spinal cord dopamine D1 receptors labeled with [3H]SCH 23390 after morphine withdrawal from tolerant and physically dependent rats. J Pharmacol Exp Ther 1990;252(3):901-7.
299. Bhargava HN, Gulati A. Down-regulation of brain and spinal cord mu-opiate receptors in morphine tolerant-dependent rats. Eur J Pharmacol 1990;190(3):305-11.
300. Anand M, Gulati A, Gopal K, Gupta GS, Khanna RN, Ray PK, et al. Hypertension and myocarditis in rabbits exposed to hexachlorocyclohexane and endosulfan. Vet Hum Toxicol 1990;32(6):521-3.
301. Gulati A, Srimal RC, Bhargava HN. Effect of varying concentration of ethanol on systemic hemodynamics and regional circulation. Alcohol 1989;6(1):9-15.
302. Gulati A, Ramarao P, Bhargava HN. Effect of repeated administration of U-50,488H, a kappa opioid receptor agonist, on central 5-HT1 and 5-HT2 receptors in the rat. Pharmacology 1989;39(3):145-53.
303. Gulati A, Bhargava HN. Brain and spinal cord 5-HT2 receptors of morphine-tolerant-dependent and -abstinent rats. Eur J Pharmacol 1989;167(2):185-92.
304. Bhat R, Chari G, Bhargava H, Gulati A, Velamati R, Chaudhry U, et al. Pharmacokinetics of single dose morphine in preterm neonates. Pediatric Research 1989;25(4):A65-A.
305. Bhargava HN, Ramarao P, Gulati A, Matwyshyn GA, Prasad R. The binding of 3H-(3-MeHis2) thyrotropin releasing hormone to brain and pituitary membranes of hyperthyroid rats. Arch Int Pharmacodyn Ther 1989;297:247-59.
306. Bhargava HN, Ramarao P, Gulati A, Matwyshyn GA, Prasad R. Brain and pituitary receptors for thyrotropin-releasing hormone in hypothyroid rats. Pharmacology 1989;38(4):243-52.
307. Bhargava HN, Ramarao P, Gulati A, Gudehithlu KP, Tejwani GA. Methionine-enkephalin and beta-endorphin levels in spleen and thymus gland of morphine tolerant-dependent and abstinent rats. Life Sci 1989;45(26):2529-37.
308. Bhargava HN, Ramarao P, Gulati A. Effects of morphine in rats treated chronically with U-50,488 H, a kappa opioid receptor agonist. Eur J Pharmacol 1989;162(2):257-64.
309. Bhargava HN, Ramarao P, Gulati A. Changes in multiple opioid receptors in regions of the brain in rats treated chronically with thyroxine. Neuropharmacology 1989;28(9):955-60.
310. Bhargava HN, Gulati A, Ramarao P. Effect of chronic administration of U-50,488H on tolerance to its pharmacological actions and on multiple opioid receptors in rat brain regions and spinal cord. J Pharmacol Exp Ther 1989;251(1):21-6.
311. Anand M, Gulati A, Gopal K, Khanna RN, Ray PK, Tripathi ON. Changes in cardiac-rhythm and calcium levels in guinea-pigs treated chronically with fenitrothion. Toxicological and Environmental Chemistry 1989;24(4):199-205.
312. Anand M, Gulati A, Gopal K, Gupta GS, Chandra SV. Role of neurotransmitters in fenitrothion-induced aggressive behaviour in normal and lesioned rats. Toxicol Lett 1989;45(2-3):215-20.
313. Murti, A., Bhandari, K., Ram, S., Prabhakar, Y.S., Saxena, A.K., Jain, P.C., Gulati, A., Srimal RC, Dhawan, BN, Nityanand, S, and Anand, N.: Synthesis and QSAR of 1-aryl-4-(B-2-quinolyl/1-isoquinolyl-ethyl)-piperazines & some related compounds as hypotensive. Indian Journal of Chemistry Section B-Organic Chemistry Including Medicinal Chemistry 1989; 28B, 934
314. Anand M, Gopal K, Gupta GSD, Ray PK, Gulati A, Srimal RC. Central neurohumoral mechanism of cardiovascular toxicity to lindane. Journal of Advanced Zoology 1989;10(2):126-35.
315. Aldana O, Bhat R, Chari G, Gulati A, Velamati R, Chaudhry U, et al. Pharmacokinetics of single dose

morphine in preterm neonates. Clinical Research 1989;37(4):A956-A.
316. Agrawal AK, Kumar P, Gulati A, Seth PK. Cannabis-induced neurotoxicity in mice - effect on cholinergic (muscarinic) receptors and blood-brain barrier permeability. Research Communications in Substances of Abuse 1989;10(3):155-68.
317. Villar V, Gulati A, Ramarao P, Bhargava HN. Effect of multiple administration of U-50,488H on brain and spinal-cord kappa opioid receptors in the rat. Faseb Journal 1988;2(5):A1394-A.
318. Nath C, Gulati A, Dhawan KN, Gupta GP. Role of central histaminergic mechanism in behavioural depression (swimming despair) in mice. Life Sci 1988;42(24):2413-7.
319. Mehta P, Saxena AK, Gulati A, Anand N. Synthesis of substituted pyrido[3,4-b]indole-3-carboxamides and related-compounds as benzodiazepine receptor agonists antagonists. Indian Journal of Chemistry Section B-Organic Chemistry Including Medicinal Chemistry 1988;27(2):140-3.
320. Gulati A, Srimal RC, Dhawan BN. Differential alteration in striatal dopaminergic and cortical serotonergic receptors induced by repeated administration of haloperidol or centbutindole in rats. Pharmacology 1988;36(6):396-404.
321. Gulati A, Srimal RC, Dhawan BN. An analysis of stereotyped behaviour in Mastomys natalensis. Naunyn Schmiedebergs Arch Pharmacol 1988;337(5):572-5.
322. Gulati A, Srimal RC, Dhawan BN. Alteration in systemic hemodynamics & regional brain blood flow by isoprenaline. Indian J Med Res 1988;88:265-72.
323. Gulati A, Hussain G, Srimal RC, Dhawan BN. Comparison of cortical adrenergic, cholinergic and benzodiazepine receptors between albino rat and desert rat (Mastomys natalensis) using radioreceptor binding. Pharmacology 1988;36(5):325-30.
324. Gulati A, Bhargava HN. Up-regulation of brain and spinal-cord kappa-opioid receptors in morphine tolerant dependent mice. Faseb Journal 1988;2(4):A368-A.
325. Gulati A, Bhargava HN. Cardiovascular responses to kappa opioid agonists in intact and adrenal demedullated rats. Eur J Pharmacol 1988;156(2):247-57.
326. Gulati A, Bhargava HN. Cerebral cortical 5-HT1 and 5-HT2 receptors of morphine tolerant- dependent rats. Neuropharmacology 1988;27(12):1231-7.
327. Bhargava HN, Ramarao P, Gulati A. Effect of methimazole-induced hypothyroidism on multiple opioid receptors in rat brain regions. Pharmacology 1988;37(6):356-64.
328. Bhargava HN, Gulati A. Effect of chronic administration of morphine on the binding of 3H-SCH-23390 to dopamine D1 receptors on the rat striatal membranes. Faseb Journal 1988;2(5):A1072-A.
329. Bhargava HN, Gulati A. Binding of 3H-(3-MeHis2) thyrotropin-releasing hormone to spinal cord membranes of spontaneously hypertensive and Wistar-Kyoto normotensive rats. Pharmacology 1988;37(6):349-55.
330. Bhargava HN, Gulati A. Kappa opioid receptor activity in spontaneously hypertensive rats. J Pharmacol Exp Ther 1988;245(2):460-5.
331. Bhargava HN, Gulati A. Selective inhibition of the binding of 3H-(3-MeHis2) thyrotropin releasing hormone to rat amygdala membranes by some naturally occurring cannabinoids. Peptides 1988;9(4):771-5.
332. Bhargava HN, Das S, Gulati A. Stereoselectivity of kappa-opiate receptor ligands in inhibiting the binding of [3H][3-MeHis2]thyrotrophin releasing hormone to brain membranes. J Pharm Pharmacol 1988;40(1):70-2.
333. Srivastava VK, Singh S, Gulati A, Shanker K. Antiparkinsonian agents from quinazolinylthiazolidinones and azetidinones. Indian Journal of Chemistry Section B-Organic Chemistry Including Medicinal Chemistry 1987;26(7):652-6.
334. Misra PK, Gulati A, Mahesh AK, Sharma B, Malik GK, Dhawan KN. Maturity of blood brain barrier

in children. Indian J Med Res 1987;85:401-3.
335. Gulati A, Srimal RC, Dhawan KN, Dhawan BN. On the mechanism of potentiation of apomorphine-induced stereotypy due to electroconvulsive shock. Neuropharmacology 1987;26(12):1733-7.
336. Anand M, Gopal K, Mehrotra S, Gulati A, Chandra S, Seth PK, et al. Behavioral and biochemical-alterations induced by hexachlorocyclohexane in albino-rat. Journal of Advanced Zoology 1987;8(2):135-41.
337. Singh HK, Gulati A, Srimal RC, Dhawan BN. Effect of RO 15-1788 on diazepam, GABA & pentobarbitone induced EEG changes in rabbits. Indian J Med Res 1986;83:633-41.
338. Sethi BB, Trivedi JK, Kumar P, Gulati A, Agarwal AK, Sethi N. Antianxiety effect of cannabis: involvement of central benzodiazepine receptors. Biol Psychiatry 1986;21(1):3-10.
339. Gulati A, Srimal RC, Dhawan BN, Agarwal AK, Seth PK. Upregulation of brain benzodiazepine receptors by electroconvulsive shocks. Pharmacol Res Commun 1986;18(6):581-9.
340. Gulati A, Srimal RC, Dhawan BN. Stereotyped behaviour and striatal dopamine receptors in albino rat and the desert rat (Mastomys natalensis): a comparative study. Indian J Exp Biol 1986;24(4):248-51.
341. Misra PK, Mahesh AK, Gulati A, Sharma B, Malik GK, Dhawan KN. Blood brain barrier in neonatal jaundice. Indian Pediatr 1985;22(8):575-7.
342. Maheshwari PK, Gulati A, Sharma B, Misra PK, Malik GK, Kumar V, et al. Blood-brain barrier in non-infective convulsive disorders. Indian Pediatr 1985;22(11):819-23.
343. Gulati A, Nath C, Shanker K, Srimal RC, Dhawan KN, Bhargava KP. Effect of alcohols on the permeability of blood-brain barrier. Pharmacol Res Commun 1985;17(1):85-93.
344. Gulati A, Dhawan KN, Shukla R, Srimal RC, Dhawan BN. Evidence for the involvement of histamine in the regulation of blood- brain barrier permeability. Pharmacol Res Commun 1985;17(4):395-404.
345. Gulati A, Agarwal SK, Shukla R, Srimal RC, Dhawan BN. The mechanism of opening of the blood-brain barrier by hypertonic saline. Neuropharmacology 1985;24(9):909-13.
346. Misra PK, Mahesh AK, Gulati A, Malik GK, Sharma B, Dhawan KN. Blood brain barrier in meningitis. Indian Pediatr 1984;21(8):629-33.
347. Gulati A, Agarwal SK, Shukla R, Srimal RC, Dhawan BN. Evidence for the lack of serotonergic mechanism in the regulation of blood-brain barrier. Pharmacol Res Commun 1984;16(2):181-8.
348. Doval DC, Nath C, Gulati A, Agarwal SS, Bhargava KP. Adverse drug reactions in hospitalized patients. Indian J Med Res 1983;77:895-901.
349. Nath C, Gulati A, Dhawan KN, Gupta GP, Bhargava KP. Evidence for central histaminergic mechanism in foot shock aggression. Psychopharmacology 1982;76(3):228-31.
350. Gulati A, Nath C, Shanker K, Dhawan KN, Bhargava KP. Fluorescein spectrophotofluorometry: a sensitive quantitative method for evaluating the blood brain barrier. Pharmacol Res Commun 1982;14(7):649-61.
351. Gulati A, Nath C, Dhawan KN, Bhargava KP, Agarwal AK, Seth PK. Effect of electroconvulsive shock on central cholinergic (muscarinic) receptors. Brain Res 1982;240(2):357-8.
352. Awasthi PK, Shanker K, Gulati A, Dhawan KN, Bhargava KP. Increased permeability of blood brain barrier after electro-convulsive shocks (ECS). Pharmacol Res Commun 1982;14(10):983-92.
353. Gulati A, Nath C, Dhawan KN, Shanker K, Bhargava KP. Permeability alteration of blood brain barrier by alcohols. Indian J Med Res 1981;73:793-5.
354. Doval DC, Nath C, Gulati A, Bhargava KP. A survey of adverse effects of drugs in an outpatient population. Indian J Public Health 1981;25(3):133-8.