Curriculum Vitae
Sukhbir S. Mokha

BIOGRAPHICAL

Name: Sukhbir S. Mokha **Citizenship:** USA **Marital Status:** Married

Office Address: Department of Biochemistry, Cancer Biology, Neuroscience and Pharmacology
Meharry Medical College, 1005 D.B. Todd Blvd
Nashville, TN 37208

Office Telephone: 615-327-6933

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EDUCATION

1981	University of Edinburgh (UK) (Advisors: **A. Iggo**, DSc, FRS and **A.G. Brown**, FRSE)	Ph.D	Physiology/Neuroscience
1977	University of Southampton (UK)	M.Sc	Pharmacology
1974	Punjab State Medical College	B.Sc	Anatomy/Physiology/Bioche (Summa Cum Laude)

APPOINTMENTS and POSITIONS

2019-	CNS and Special Senses, FHDM, MS2	Director
2018-	Department of Biochemistry, Cancer Biology, Neuroscience and Pharmacology	Professor (Tenured)
2014-2017	Department of Neuroscience and Pharmacology	Vice Chair
2007-	Graduate Studies in Neuroscience Meharry Medical College	Director
2009-	Department of Neuroscience and Pharmacology, Meharry Medical College	Professor (tenured)
2007-2009	Department of Neurobiology and Neurotoxicology,	Professor

	Meharry Medical College	(tenured)
2006-2013	Morphology CORE, Meharry Medical College	Scientific Director
2005-2007	Division of Neurobiology and Neurotoxicology Dept of Biomedical Sciences Meharry Medical College	Professor (tenured)
2001-2005	Department of Physiology Meharry Medical College	Professor (**tenured**: 2002)
2001-	Department of Pharmacology Vanderbilt University	Adjunct Professor
1999-	Oral Biology, School of Dentistry Meharry Medical College	Associate Professor
1995-2001	Department of Pharmacology Vanderbilt University	Adjunct Assoc Professor
1995-2001	Department of Physiology Meharry Medical College	Associate Professor
1992-1995	Department of Pharmacology Vanderbilt University	Adjunct Assistant Prof
1988-1995	Department of Physiology Meharry Medical College	Assistant Professor
1988-1988	University College London	Research Fellow (Professor P.D. Wall, DM, FRS)
1985-1987	Somatosensory Laboratory Division of Neurophysiology and Neuropharmacology MRC, National Institute for Medical Research, London,UK	Acting Director
1984-1987	Division of Neurophysiology and Neuropharmacology MRC, National Institute for Medical Research, London	Research Scientist (Dr. R. F. Hellon, D.Phil)
1980-1983	University of Edinburgh	Postdoctoral Fellow (Professor A. Iggo, DSc, FRS)

COMPETITIVE GRANTS AND AWARDS (TOTAL COSTS AWARDED):

2014-2019	NIDA (R24 DA036420-01A1). Methamphetamine Research Program at Meharry Medical College. **PI**: Charlton, C.G. **Role**: Evaluator

2011–2017 spinal	$1,131,500	NIGMS/NINDS (SC1NS078778-05). Control of nociception in the cord. **PI**: Mokha, S.S. Competitive renewal of SC1NS63951; No Cost Extension: Aug 31, 2017
2007-2011	$1,335,966	NIGMS/NINDS (SC1NS63951). Control of nociception in the spinal Cord. **PI**: Mokha, S.S.
2006-2012 CORE	$1,096,968	NIH-NINDS (U54-UO1 NS641071) –**Role**: Director, Morphology
(**Extension**: July 22, 2011)		**PI**: Dr. C.G. Charlton
2006-08 (Won -28,000,000)		Korea Science and Engineering Foundation grant (F01-2006-000-10148-0) to Dr. Ahn. **Role**: International Collaborator
2003-2007	$659,787	NIGMS- NIH (GM008037) -Noradrenergic modulation of trigeminal nociception. Competitive renewal of the SCORE sub-project (NIGMS)**. Sub- Project PI**: Mokha, S.S.
2003-2005	$121,800	NIH-NCRR – Research Centers in Minority institutions (PI: James G. Townsel).
1999-2003	$823,473	NIH-NIGMS (GM008037), Noradrenergic modulation of trigeminal nociception. **Sub-project PI**: Mokha, S.S.
1997-2003	$66,700	NIDR-NCRR (NIH) - Regional Research Center for Minority Oral Health (**PI**: Dr. S. Russell).
1994-2000	$487,373	NIDCR-NIH (**R29 DE10903, FIRST award**)," Control of transmission in the medullary dorsal horn ", **PI**: Mokha, S.S.
1997-1999	$86,400	NIH-NCRR - Research Centers in Minority institutions (**PI**: Dr. Fred Jones).
1994-1997	$108,576	NSF- Research Centers of Excellence in Cell and Molecular Biology, **PI:** Dr. George C. Hill ($5,000,000 over 5yrs)
1991-1995	$119,351	NSF **(BNS-9109247) -** "Information processing in the trigeminal system", **PI**: Mokha,S.S.
1990-1993	$173,193	NIH-RCMI (neuroscience component) nociception group project, "Viscero-somatic interactions following an ischemic episode and their control by opioid peptides in the dorsal horn of the spinal cord", **CO-PI** with Dr. Rucker
1985-1987 (UK)	$xxx,xxx	Medical Research Council (U.K.)-research support (salaries for PI and

	senior research officer + supplies + equipment) for the Somatosensory Laboratory at the National Institute for Medical Research, **PI**: S.S. Mokha
1983-1985 (UK) $58,000	Wellcome Trust grant, "neurotransmitters and synaptic mechanisms involved in mediating the descending actions from the nucleus locus coeruleus", **CO-PI** with Professor Iggo.
1980-1983 (UK) $110,000	SERC grant, "the role of locus coeruleus in the modulation of sensory transmission in the spinal cord " was independently prepared by me in the final year of my Ph.D., **PI**: Professor Iggo.

Other Awards

2011	Exemplary Teacher Award, Meharry Medical College
2008	Distinguished Professor, SOGS, Meharry Medical College
2001	Outstanding Faculty Scholar Award, SOGS, Meharry Medical College
2000	Presidential Research Incentive Award, Meharry Medical College
1999	Recognition of Research and Scholarly Activities by the Division of Sponsored Research, Meharry Medical College
1982	The Royal Society Study Visit to the University of Gothenburgh (Sweden) (Professor Andres Lundberg and Dr. Elzbieta Jankowska)
1979	Birrell Gray Traveling Scholar of the University of Edinburgh to the School of Pharmacy, University of London
1977-1980	University of Edinburgh (Senatus Academicus) Research Scholar
1969	Punjab State Merit Scholar

Symposia (National/International)

2011-12	Co-chair of the organizing committee and speaker at a satellite symposium "vulnerability to pain: sources of female-male differences and the challenge of understanding them" of the World Congress on Pain, Milan, Italy in August 2012.
2012	Invited speaker at a symposium organized by NIDA (NIH) at the annual meeting of the American Pain Society, Honolulu, May 2012.

National /International Level Committee/Service Activities

2010-2013	Member, Professional Development Committee of the Society for Neuroscience (SFN)
2010-2012	Chair, sub-committee of the Professional Development Committee, SFN
2010-2014	Elected Co-Chair of the Special Interest Group on Sex, Gender and Pain of the International Association for the Study of Pain.

2008 -2010 Elected Treasurer of the Special Interest Group on Sex Gender and Pain of the International Association for the Study of Pain.

2003 Senior researcher nomination to meet with and guide minority travel fellows on behalf of the Minority Education, Training and Professional Advancement Committee of the Society for Neuroscience.

1997 Member of the Oral Health Working Group coordinated by **NIDR (NIH) for ORWH (NIH)** to make research recommendations and setting priorities for women's health.

1994 **NIH-NIDR**-member of the Basic Science Group charged with the responsibility of formulating research recommendations in the area of TMDs and related pain conditions.

Grant Reviewer:

2014 Member, NIDA Special Emphasis Panel [ZDA1 MXL-F (10)]

2010 Grant reviewer for the City University of New York

2008 Grant reviewer for the American Association for the Advancement of Science to conduct review of internal funding at the University of Kansas (Kansas IDeA Network of Biomedical Research Excellence).

1998-2004 Adhoc study section member [**IFCN-7 (02) - CSR - NIH**] to review applications in the areas of Pain and Analgesia.

Journal Reviewer for (Ad Hoc)

Journal of Neuroscience
Neuroscience
J. Neurophysiology
American Journal of Physiology
J. Comp. Neurology
Exp. Brain Research
European Journal of Pharmacology
Journal of Pharmacology and Experimental Therapeutics
Journal of Dental Research
Pain
Journal of Pain
European Journal of Pain
Journal of Oral Pain
Stress
Hormones and Behavior
Neuroscience Letters
Exp. Neurology
Life Sciences
Brain Research
Brain Research Bulletin
Neurochemistry International
Progress in Neuropsychopharmacology & Biological Psychiatry
Physiology and Behavior.

Scientific Consultant

1993-1994: Scientific advisor to the Oral Health Research Center initiative (NIDR), Schools of Dentistry, Meharry Medical College and University of Alabama.

Chair or Co-Chair at National/International Meetings

1984 Co-Chaired a scientific session at a national meeting of the British Physiological Society (Mill Hill, London)

2004 Co-moderator, 4th annual conference of specialized neuroscience research programs, Nashville, Tennessee.

2011-12 Co-Chair, Sex, Gender and Pain SIG symposium held at the World Congress on Pain in Milan, Italy, August 2012

Research Collaborations

Dr. Charles David Weaver	Vanderbilt University
Dr. Paul Shughrue	Merck Research Laboratories
Dr. Sandy Peterson	University of Massachusetts
Dr. Qin Wang	University of Alabama, Birmingham
Dr. Laura Stone	McGill University, Canada
Dr. Dong-Kuk Ahn	Kyungpook National University, Korea
Dr. L. Limbird	Meharry Medical College
Dr. Timothy Angelotti	Stanford University
Dr. Ronald G. Wiley	Vanderbilt University
Dr. David Maxwell	University of Glasgow, Scotland

POST- DOCTORAL FELLOWS/RESEARCH ASSISTANTS SUPPORTED

1993-1994	J. Yan, M.D., Ph.D.	**Present Job**: Vice-President, Xian Jiaotong University (PRC)
1994-2001	Xiao-Min Wang, M.D. Ph.D.	**Present Job**: Senior Staff Fellow, NINR (NIH)
1994-2001	Kai Ming Zhang, B.S.	**Present Job**: Senior Professional, Allergan Pharmaceuticals,Inc.
2001-	S, Nag, Ph.D.	Res Assistant Professor, Meharry Medical
2002-2002	Ge-Xin Wang, M.D., Ph.D.	**Present Position**: Postdoctoral Fellow, (University of Maryland)

Visiting Senior Scientists or Post-doctoral Fellows

1998- Dong-Kuk Ahn, DDS, Ph.D. ***Present Job***: Professor and Chair of Oral Biology, Kyungpook National University

M.D-Ph.D.; DDS/Ph.D. Students – Primary Mentor

2008 - 2016 Douglas Robinson (M.D.-Ph.D.)

1999 - May 2003: Carmina A Flores, MD-PH.D. **Present:** Instructor in Neurosurgery, Stanford University; Private practice

Graduate Students –Primary Mentor

2012 - Danyeal Heckard, BS

2008-2014 Ms Keri McLean, Small BS, Ph.D. **Present**: Postdoc, Yale University; Health Program Specialist, NINDS

2003 - 2010 Ms Kera Lawson, BS, Ph.D. **Present**: Sci Peer Rev specialist, URS Federal Ser

2003 -2008 Jomo Claiborne, BS., Ph.D. **Present**: Intelligence analyst, Washington

2002 -2008 Annalisa Thompson, MS, Ph.D. **Present**: Senior Drug Discovery Scientist, Vanderbilt

2004-2006 Ms Jessica Gadsden, MS

1996 -1998: Ms Deanna Brown, BS (Brown); Ms Angela Peterson, MS (1993-95)

Graduate Student Supervision at Meharry Medical College

1988- Committee on Instruction for John F. Hamilton (MD-PhD, 1993); Eric Moore (Ph.D., 1992); A. Keaton (Ph.D., 1995); Tamalla Mallett (Ph.D, 1991-92); Quentin Scott (1995-); Letha Wood (Ph.D., 1995-2000); Adwoa McKinney (Ph.D., 1996-2000); Jonathan Reasor (2000-); Carmina Flores (1999-2003); Frederick James (2000-2005); Annalisa Thompson (2002-2008); Jomo Claiborne (2003 -2008); Kera Lawson (2004 -2009); Jessica Gadsden (2004 - 2006); Lella Jackson (2004 - 2006); Keri McLean (2008 -2014); Douglas Robinson (2008 – Present); Alexis Hammond (2009-2011); Kiera Nicole Lee (2009 – 2013); Brenya Griffin (2013-Present); Danyeal Heckard (2012 – present); Jeremy Sprouse (2013 – Present); Thomas Hodo (2013 – 2014).

Students training at Vanderbilt University

COI member:

Laurie Lee Lemons (Mentor: Dr. Wiley), graduation: Dec 2011

Kristopher Abney (2015- Present ; Mentor: Dr. Weaver at Vanderbilt University);

Medical and Dental Students – Summer Research Fellows Trained
S. Bhattacharjee (1995); Monica Swanson (1996); Layron Long (1997-99); B. Dadson (97); C. Flores (1998-99); R. Bains (2000); Katherine Glover (2002); Vidush Yarlagadda (2010); Marlo Prince (2011); Joachim Martinez (2014); Reis Cantrill (2016 -); Jeremy Guinn (2016 -)

UNDERGRADUATE or HIGH SCHOOL STUDENTS TRAINED or SUPPORTED
Ken Cosby (1994); Monique McCarter (1995); Mona Patel (1995- senior in high school);Kimberly Joseph (1996); M. Boswell (1996); Tomeka Ray (2003); Felishia Lewis (2004); Jacqueline Reid (TSU, 2010); Evan Chaudhuri (UT Knoxville, 2011); Christian J. Floyd (Harvard; 2015); Gabby Dent (Washing University, 2016); Mariel Watkins (Meharry – MSH, 2016)

Current Research Interests

Neurobiology of **pain** mechanisms and their **control** in health and disease. Investigation of **sex-related differences** in the perception and control of pain at systems, cellular, molecular and genomic levels. Investigation of biological mechanisms underlying the higher prevalence of **pain syndromes** in **women**.

MEMBERSHIP OF PROFESSIONAL SOCIETIES
1989- Society for Neuroscience
1980- International Association for the Study of Pain
2000- American Pain Society
1993- International/American Association for Dental Research
1998 American Physiological Society

Invited Seminar Speaker
77-83 Several seminars given at the University of Edinburgh (UK).
1984- Division of Neurophysiology and Neuropharmacology, National Institute for Medical Research, London (UK).
1984 Spinal Cord Club, University College London (UK).
1985 Imperial Chemical Industries, Macclesfield, Cheshire (UK).1986 Meharry Medical College, Nashville, Tennessee (USA).
1987 Department of Pharmacology, Strathclyde University (UK).
1987 Department of Anatomy, University of Liverpool (UK).
1988 Department of Biology, Tennessee state University, Nashville (USA).
1991 Inst. Animal Behav., Rutgers University, Newark.
1991 School of Dentistry, Meharry Medical College, Tennessee
1992 Tennessee State University, Nashville, Tennessee
1992 Lane College, Jackson, Tennessee
1992 Medical grand round, Internal Medicine, Meharry Medical College /Hubbard Hospital, Nashville, Tennessee
1993 Tennessee State University, Nashville, Tennessee.
1994 Baylor College of Dentistry, Dallas
1994 University of Minnesota, Pain Research Group/Neuroscience
1996 Bowman Gray School of Medicine (Wake Forest University), Dept of Anatomy and Neurobiology

1997 Tennessee State University
1997 Meharry Medical College, Department of Psychiatry
1997 National Institutes of Health
1998 Vanderbilt University, Department of Psychology
1998 Spring Pain Research Conference - Grand Cayman, BWI
1998 Medical College of Ohio, Dept of Neurosurgery
1998 Tennessee State University
2000 Pennsylvania State University College of Medicine, Dept of Anesthesiology
2000 Tennessee State University
2000 Florida A & M University, College of Pharmacy, Tallahassee
2001 Vanderbilt University, Department of Anesthesiology
2003 St. Louis University, Department of Anatomy and Neurobiology
2003 University of Iowa, Pain Research Group
2003 Tennessee State University, Dept of Biology
2004 Annual Neuroscience Symposium (Synapses, Substrates, and Synergy III) at Meharry Medical College
2005 Tennessee State University
2007 Symposium at the National Medical Association meeting in Honolulu, Hawai
2009 Tennessee State University, Dept of Biology, Nashville
2010 Tennessee State University
2011 Dept of Biology, Tennessee State University
2012 Symposium (NIDA) speaker at the annual meeting of the American Pain Society, Honolulu
2012 Speaker at the SIG symposium, World congress on Pain, Milan, Italy, August 2012
2013 Department of Biology, Tennessee State University
2014 Department of Biology, Tennessee State University
2015 Dept of Psychology, Vanderbilt University (cancelled because of a grant deadline)

TEACHING EXPERIENCE

Physiology/Neuroscience (including neuroanatomy):

2019- Director, CNS and Special Senses, MS2
2018- Co-Director, Integumentary, musculoskeletal and nervous system (IMN), FHDM, MS1
2018 - Teaching in the FHDM course (Unit: IMN) for Freshman Medical Students.
2009- Director of Graduate Studies in Neuroscience
2008- co-coordinator, chronic pain module of the neurobiology of disease course
2008- co-coordinator of the graduate neuroscience course
2005- Teaching in medical, dental, and graduate neuroscience courses
2003-2005 Course Director, Dental Neuroscience
1999 -2000 Course Director, Medical Neuroscience
1995 -1998 Course Director, Dental Neuroscience
1992-1994 course co-director, dental neuroscience
1990 -1994 Course co-ordinator, neuroscience block of medical physiology.
.1988- Teaching various topics in neuroscience (**neuroanatomy & neurophysiology** + **neuroanatomy labs.**) to medical, dental and graduate students.
1977-1983 Demonstrator and tutor in Physiology to first and second year BVMS students.

Teaching Related Workshops

2015 Annual Faculty Development Conference: Faculty enrichment to enhance education and research , June 25, 2015

MEMBERSHIP OF COMMITTEES

Recent and Current Membership of Committees (departmental, school and college level)

2018- Member APT committee, Dept of Biochemistry, Cancer Biology, Neuroscience and Pharmacology
2015- Member, Professional Faculty Development Committee
2014-2017 Chair, Internal Advisory Committee, Research Centers in Minority Institutions (RCMI), Meharry Medical College
2012- Chair, APT committee, School of Graduate Studies, Meharry Medical College
2011- Member, Dismissal Committee, School of Medicine, Meharry Medical College
2009- Member, APT committee, Dept of Neuroscience and Pharmacology
2008- Member, Conflict of Interest and Commitment Committee
2008- Member, AP& T committee, School of Medicine, Meharry Medical College
2008 Co-Chair, Search Committee for Vice President for Research
2007- Member, Curriculum Design Committee, School of Graduate Studies and Research
2007- Member of the Admissions Committee, School of Graduate Studies and Research
2006-2007 Member, APT committee, Department of Biomedical Sciences
2006- Member, Scientific Advisory Committee, SNRP program
2006- Member, Internal Advisory Committee, Center for Women's Health Research
2006- Member, Curriculum Committee, School of Graduate Studies and Research
2005-2008 Chair, Appointment Promotion and Tenure Committee, Division (now Department) of Neurobiology and Neurotoxicology
2005-2007 Coordinator of the Weekly Works-In-Progress Seminars, Division of Neurobiology and Neurotoxicology
2003-2005 Member, Internal Advisory Committee, SOD Oral Health Disparities Research Infrastructure
2003-2005 Member, Basic Sciences Committee, School of Dentistry
2003-2005 Chair, Departmental Appointment, Promotion and Tenure Committee.
2003-2005 Academic Evaluation, Honors and Awards Committee, School of Dentistry
2003-2004 Chair, Internal curriculum review committee for the Department of Surgery
2003- Member, Internal Advisory Committee for the RISE (NIGMS) grant at Meharry Medical College
2003 Member, Departmental (Physiology) Appointment, Promotion and Tenure Committee
2001-2005 Member, Human Resources Advisory Committee
2000- Member, Committee on Scientific Integrity
1998 - Member, Internal Advisory Committee, Center for Molecular and Behavioral Neuroscience at Meharry Medical College
1997 - 2005 Faculty Senate Health and Welfare Committe
1995 - 2005 Institutional Animal Care and Use Committee

Past Memberships of Committees

1999 -2000 Member of the curriculum committee, School of Medicine
1999 -2000 Course Director for Medical Neuroscience
1997-99 Chair, Internal Advisory Committee, NIMH Program Project, Meharry Medical College
1997 - Faculty Senate Health and Welfare Committe

1995	LCME Self-Study, Basic Science Departments Committee
1995 - 99	Curriculum Committee, School of Dentistry
1993 -1998	Interviewer on behalf of the admissions committee, School of Medicine.
1992	Oral Health Research Centers (NIDCR)-Working group preparing for a center grant.
1992	Initial coordination between Meharry Medical College and Tennessee State University for Center on Neural Engineering.
1992 - 99	Academic Evaluation, Honors and Awards Committee, School of Dentistry, Meharry Medical College
1992 - 95	Syllabus Editing Committee, Department of Physiology, Meharry Medical College.
1989	Search committee for the chairmanship of the department of pediatrics.
1988 - 89	Task force for the renewal of Research Centers in Minority Institution's grant (NIH).

National /International Level Committee/Service Activities

2010-2013	Member, Professional Development Committee of the Society for Neuroscience (SFN)
2010-2013	Chair, sub-committee of the Professional Development Committee, SFN
2010-2014	Elected Co-Chair of the Special Interest Group on Sex, Gender and Pain of the International Association for the Study of Pain.
2008 -2010	Elected Treasurer of the Special Interest Group on Sex Gender and Pain of the International Association for the Study of Pain.
2003	Senior researcher nomination to meet with and guide minority travel fellows on behalf of the Minority Education, Training and Professional Advancement Committee of the Society for Neuroscience.
1997	Member of the Oral Health Working Group coordinated by **NIDR (NIH) for ORWH (NIH)** to make research recommendations and setting priorities for women's health.
1994	**NIH-NIDR**-member of the Basic Science Group charged with the responsibility of formulating research recommendations in the area of TMDs and related pain conditions.

Grant Reviewer:

2014:	Member, NIDA Special Emphasis Panel [ZDA1 MXL-F (10)]
2010	Grant reviewer for the City University of New York
2008	Grant reviewer for the American Association for the Advancement of Science to conduct review of internal funding at the University of Kansas (Kansas IDeA Network of Biomedical Research Excellence).
1998-2004	Adhoc study section member [**IFCN-7 (02) - CSR - NIH**] to review applications in the areas of Pain and Analgesia.

Most Recent Professional Development Activities

June 2015	Participated in the Annual Faculty Development Workshop – "Faculty Enrichment to Enhance Education and Research at Meharry Medical College
March 31st 2018:	A. Cherrie Epps, PhD 4th Annual Educational Symposium: Team Based Learning Speaker: Tyler Reimschisel, MD, MHPE, Vanderbilt University
May 21, 2018:	School of Medicine Educational Retreat

July 19-July 20, 2018:	2 day Faculty Development Workshop: Team Based Learning by Drs. Stephen Everse, Ph.D. and Charlotte A Reback, MD, University of Vermont
July 10, 2018:	Faculty Development Workshop: The clinical Presentation-based curriculum: Expert Thinking as a Conceptual Framework for Designing Instruction by Dr. Gordon Woods, MD, MHPE, University of Texas, El Paso
August 17, 2018:	Faculty Development Workshop by Meharry Medical College: Critical Thinking: Train the Trainer
Oct 24 – Oct 26, 2018	Enhancing engagement within the flipped classroom
November 9, 2018	Kaplan – Item Writing Workshop: Item Analysis
November 16, 2018	Kaplan – Item Writing Workshop

PUBLICATIONS

Papers & Reviews:

1. Fox, R.E., Holloway, J.A., Iggo, A. and **Mokha, S.S**. (1980). Spinothalamic tract neurons in the cat: some electrophysiological observations. **Brain Research, 182:** 186-190.

2. Sinclair, J.G., Fox, R.E., **Mokha, S.S**. and Iggo, A. (1980). Effect of naloxone on the inhibition of nociceptor driven neurons in the cat spinal cord. **Quart. J. Exp. Physiol., 65:** 181-188.

3. Iggo, A. and **Mokha, S.S**. (1982). Neurophysiology of opioid peptides. In: '**Neuropeptides - basic and clinical aspects**' (proceedings of the 11th Pfizer International Symposium), eds., Fink, G. and Walley, L.J., Churchill Livingstone, Edinburgh, pp24-32.

4. **Mokha, S.S**., McMillan, J.A. and Iggo, A. (1983). Descending influences on spinal nociceptive neurons from locus coeruleus: actions, pathways, neurotransmitters and mechanisms. In: **Advances in Pain Research and Therapy, Vol. 5,** eds., Bonica et al., Raven Press , New York, pp. 387-392.

5. **Mokha, S.S**., McMillan, J.A. and Iggo, A. (1983). Dorsal root potentials in the cat: effects of bicuculline. **Brain Research, 259:** 313-318.

6. **Mokha, S.S**., McMillan, J.A. and Iggo, A. (1985). Descending control of spinal nociceptive transmission. Actions produced on spinal multireceptive and other neurons from the nuclei locus coeruleus (LC) and raphe magnus (NRM). **Experimental Brain Research, 58:** 213-226.

7. **Mokha, S.S**., McMillan, J.A. and Iggo, A. (1986). Pathways mediating the descending control of spinal nociceptive transmission from the nuclei locus coeruleus and raphe magnus. **Experimental Brain Research, 61:** 597-606.

8. **Mokha, S.S**., Goldsmith, G.E., Hellon, R.F., and Puri, R. (1987). Hypothalamic control of nocireceptive and other neurons in the marginal layer of the dorsal horn of the medulla (trigeminal nucleus caudalis) in the rat. **Experimental Brain Research, 65:** 427-436.

9. **Mokha, S.S**. and Iggo, A. (1987). Mechanisms mediating the brainstem control of somatosensory transmission in the dorsal horn of the cat's spinal cord: an intracellular analysis. **Experimental Brain Research, 69:** 93-106.

10. **Mokha, S.S**. (1992). Differential influence of naloxone on the responses of nociceptive neurons in the superficial versus the deeper dorsal horn of the medulla in the rat. **Pain, 49:** 405-413.

11. **Mokha, S.S**. (1993a). Morphine alters the firing of cold-receptive neurons in the superficial dorsal horn of the medulla in the rat. **Brain Research, 602:** 205-214.

12. **Mokha, S.S**. (1993b). Morphine Differentially modulates nociceptive input in the superficial versus the deeper dorsal horn of the medulla (trigeminal nucleus caudalis) in the rat. **Brain Research,:** 318-321.

13. Zhang, K-M., Wang, X-M. and **Mokha, S.S**. (1996). Opioids modulate NMDA-evoked responses of neurons in the superficial and the deeper dorsal horn of the medulla. **Brain Research,** 719: 229-233.

14. Wang, X-M. and **Mokha, S.S**. (1996). Opioids modulate NMDA-evoked responses of trigeminothalamic neurons. **J. Neurophysiology,** 76: 2093-2096.

15. Wang, X.-M., Zhang, K-M. and **Mokha, S.S.** (1996). Nociceptin, an endogenous ligand for the ORL_1 (opioid receptor-like1) modulates responses of trigeminal neurons evoked by excitatory amino acids and somatosensory stimuli. **J. Neurophysiology** 76: 3568-3572.

16. Wang, X-M., Yan, J., Zhang, K-M. and **Mokha, S.S.** (1996). Role of opioid receptors (μ, δ1, δ2) in modulating responses of nociceptive neurons in the superficial and the deeper dorsal horn of the medulla (trigeminal nucleus caudalis). **Brain Research,** 739: 235-243.

17. Zhang, K.-M., Wang, X.-M., Peterson, A.M., Chen, W.-Y. and **Mokha, S.S**. (1998). α_2-adrenoceptors modulate NMDA-evoked responses. **J. Neurophysiology**, 80 (3): 2210-2214.

18. Wang, X.-M, Zhang, K.-M., Long, L.O. and **Mokha, S.S**. (1999). Orphanin FQ modulates responses of trigeminal neurons evoked by excitatory amino acids and somatosensory stimuli and blocks the substance P-induced facilitation of NMDA evoked responses. **Neuroscience, 93:** 703-712.

19. Wang, X.-M., Zhang, K.-M., Long, L.O., Flores, C. and **Mokha, S.S**. (2000). Endomorphin-1 and endomorphin-2 modulate responses of trigeminal neurons evoked by N-methyl-d-aspartic acid and somatosensory stimuli. **J. Neurphysiology, 83:** 3570-3574.

20. Flores, C.A., Wang, X.-M., Zhang, K.M. and **Mokha, S.S.** (2001). Orphanin FQ produces gender-specific modulation of trigeminal nociception: Behavioral and electrophysiological observations. **Neuroscience**, **105**: 489-498**.**

21. Wang, X.-M, Zhang, Z., Bains, R. and **Mokha, S.S**. (2002). Effect of antisense knock-down of α_{2A}- and α_{2C} adrenoceptors on the antinociceptive effect of clonidine on trigeminal nociception. **Pain**, **98**:27-35.

22. Flores, C.A., Shughrue, P., Peterson, S. and **Mokha, S.S**. (2003). Sex-related differences in the distribution of opioid receptor like-1 (ORL1) receptor mRNA and co-localization with estrogen receptor mRNA in neurons of the spinal trigeminal nucleus caudalis in the rat. **Neuroscience**, **118**: 769-778.

23. Nag, S. and **Mokha, S.S**. (2004). Estrogen attenuates antinociception produced by stimulation of Kolliker-Fuse nucleus in the rat. **European Journal of Neuroscience, 20**: 3203-3207.

24. Nag, S. and **Mokha, S.S.** (2006). Activation of α_2-adrenoceptors in the trigeminal region produces sex-specific modulation of nociception in the rat. **Neuroscience, 142:** 1255-1262.

25. Claiborne, J., Nag, S. and **Mokha, S.S**. (2006). Activation of opioid receptor like-1 receptor (ORL1) in the spinal cord produces sex-specific antinociception in the rat: estrogen attenuates antinociception in the female whereas testosterone is required for the expression of antinociception in the male. **J. Neuroscience, 26:** 13048 – 13053.

26. Ahn, D.K., Choi, H.S., Yeo, S.P., Woo, Y.W., Lee, M.K., Yang, G.Y., Park, J.S. and **Mokha, S.S.** (2007). Blockade of central cyclooxygenase (COX) pathways enhances the cannabinoid-induced antinociceptive effects on inflammatory temporomandibular (TMJ) nociception. **Pain, 132:** 23-32.

27. Thompson, A., Angeloti, T, Nag, S. and **Mokha, S.S.** (2008). Sex-specific modulation of spinal nociception by α_2-adrenoceptors: differential regulation by estrogen and testosterone. **Neuroscience, 153:** 1268-1277.

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