

SANDEEP KHURANA, M.B.B.S.**Official Address**

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Medical Education

8/1989-12/1993 University College of Medical Sciences, New Delhi, India

Post Graduate Education and Training

7/1999-6/2002 Fellow-Division of Gastroenterology, University of Arkansas for Medical Sciences Little Rock, Arkansas

7/1996-6/1999 Residency-Department of Internal Medicine, State University of New York, Health Sciences Centre, Brooklyn, New York

7/1995-3/1996 House-staff Officer-Department of Neuroradiology, All India Institute of Medical Sciences, New Delhi, India

4/1995-6/1995 House-staff Officer-Department of Dermatology, Safdarjang Hospital, New Delhi, India

1/1994-12/1994 Transitional Year, University College of Medical Sciences, New Delhi, India

Employment History

2/2018-Present Associate Professor of Medicine, Department of Clinical Sciences, Geisinger Commonwealth School of Medicine.

12/16-Present Medical Director, Liver Transplantation, Geisinger Health System.

10/2013-11/2016 Associate Professor of Medicine, Director of Hepatology, Division of Gastroenterology and Hepatology, Augusta University Medical Center, Augusta, Georgia

9/2005-9/2013 Assistant Professor of Medicine, Division of Gastroenterology and Hepatology, University of Maryland School of Medicine and Staff Physician, Maryland VA Health Care System, Baltimore, Maryland

3/2009-05/2012	Director, Hepatology, Division of Gastroenterology and Hepatology University of Maryland School of Medicine, Baltimore, Maryland
9/2006-3/2009	Director, Clinical Hepatology, Division of Gastroenterology and Hepatology, University of Maryland School of Medicine, Baltimore, Maryland
8/2002-8/2005	Assistant Professor of Medicine, Division of Gastroenterology and Hepatology, University of Arkansas for Medical Sciences and Central Arkansas Veterans Health Care System, Little Rock, Arkansas

Board Certifications

12/2006	Transplant Hepatology
11/2002	Gastroenterology
8/1999	Internal Medicine

Board Re-certifications

11/2016	Transplant Hepatology
05/2016	Gastroenterology

Licensure

2016	Pennsylvania Medical Board (active)
2013	Georgia Composite Medical Board (active)
2005	Maryland State Medical Board
2002	Arkansas State Medical Board
2002	Indiana State Medical Board

Professional Affiliations

American Association for the Study of Liver Diseases
The American Society for Pharmacology and Experimental
Therapeutics
European Association for the Study of the Liver
American Society of Transplantation

Administrative Service

2016-present	Member, Liver Transplant Committee, Geisinger Health System
2005-2013	Member, Liver Transplant Committee, University of Maryland School of Medicine

- 2006-2008 Alternate Member, School of Medicine Council, University of Maryland School of Medicine
- 2002-2005 Member, Quality Improvement Committee, Gastrointestinal Endoscopy, Division of Gastroenterology and Hepatology, University of Arkansas for Medical Sciences

Teaching Services

Section Leader, Gastrointestinal Hormones Gastrointestinal Inflammation, Division of Gastroenterology and Hepatology, University of Arkansas for Medical Sciences

Advisor, Gastroenterology Fellowship Training Core Curriculum, Division of Gastroenterology and Hepatology, University of Arkansas for Medical Sciences

Pathophysiology Conference for Graduate Students, Gastrointestinal and Liver Physiology, Department of Physiology, University of Arkansas for Medical Sciences

Educational Conferences for Gastroenterology Fellows

- 2011 Acute Liver Failure (45 min)
- 2010 Autoimmune Hepatitis (45 min)
- 2009 Portal Hypertension (45 min)
- 2008 Wilsons Disease (45 min)
- 2007 Hepatorenal Syndrome (45min)
- 2006 Treatment of Variceal Bleeding (45 min)
- 2005 Liver Biopsy-A Hands-on Approach (120 min)
- Wipples Disease (40 min)
- Tropical and Celiac Sprue (40 min)
- Gastric cancer (40 min)
- Gall bladder Diseases-Stones, Polyps&Cancer (45 min)
- Wilsons Disease (45 min)
- Autoimmune Hepatitis (45 min)
- 2004 Colon Cancer Screening (60 min)
- Intestinal Obstruction (45 min)
- 2003 Approach to Elevated Liver Enzymes (45 min)
- Veno-occlusive Disease of the Liver (60 min)
- Management of Inflamm. Bowel Disease (45 min)
- Gallstone Disease-General Concepts (60 min)
- 2002 Clinical Approach to Diarrhea (45 min)
- Clinical Approach to Nausea and Vomiting (45 min)
- Clinical Approach to Bloating (40 min)
- Zollinger-Ellison Syndrome (60 min)

GI Grand Rounds

2012	Renal Failure in Cirrhosis
2010	Acute Kidney Injury in Cirrhosis
2009	Primary Prophylaxis for Variceal Bleeding

Educational Conferences for Internal Medicine Residents

2004	Complications of Gallstone Pancreatitis (45 min)
2003	Crohns Disease (45 min)
2002	Acute Cholecystitis (45 min)
	Microscopic Colitis (45 min)

Educational Conferences for Graduate Students

2005	How to Work Up Abnormal Liver Function Test? (30 min)
	USMLE Step 2 Review: Gastrointestinal& Liver Disease (180 min)
2003	Celiac Disease-Tests for Malabsorption (40 min)
	Elevated Alkaline Phosphatase in Crohns Disease (30 min)
	USMLE Step 2 Review: Gastrointestinal& Liver Disease (180 min)
2002	Short Bowel Syndrome (40 min)
	Enterohepatic Circulation (40 min)

Gastrointestinal Pathophysiology Series for Medical Students

2006-2013	Functional Systems Small Groups
	PUD/GIB (120 min)-18 students
	Diarrhea/Malabsorption (120 min) -18 students
	Hepatitis/Jaundice (120 min) - 18 students
	Dysphagia/GERD-(120 min) - 18 students
	Lecture-Chronic Liver Disease (60 min)-entire MS II Class
01/2016	Liver Pathophysiology

Invited Speaker

09/2017	HCV and Kidney Disease. Annual Geisinger Transplant Symposium.
07/2016	Anticoagulation Prophylaxis in Cirrhosis. Medical and Surgical Approach to GI Disorders. Kiawah Island.
07/2016	Emerging Therapies for Hepatitis C. Medical and Surgical Approach to GI Disorders. Kiawah Island.
07/2016	Quality Metrics in Liver Disorders. Medical and Surgical Approach to GI Disorders. Kiawah Island.
02/2016	Muscarinic Receptors: Novel Therapeutic Targets for Acetaminophen-Induced Liver Injury. Piedmont, Atlanta, GA.

02/2016	Non-Alcoholic Fatty Liver Disease (NAFLD): The Curse of More. SGNA Conference. Augusta, GA.
01/2016	Novel Therapeutic Modalities to Modify Oxidative Stress Response in Acetaminophen-Induced Acute Liver Injury. Medicine Research Conference. Medical College of Georgia.
02/2015	Hepatitis C. SGNA Conference. Augusta, GA.
12/2014	M1 muscarinic receptors modify oxidative stress response to acetaminophen-induced acute liver injury. Medicine Research Conference. Medical College of Georgia.
7/2014	Hepatitis C What's Hot and What's Not. Medical and Surgical Approach to GI Disorders. Kiawah Island.
12/2013	The Role of Muscarinic Receptors in Liver Injury. Cancer Center. Georgia Regents University.
4/2013	Renal Failure in Cirrhosis. GI Grand Rounds. Medical College of Georgia.
1/2013	Renal Failure in Cirrhosis. Medicine Grand Rounds. University of Mississippi Medical Center.
8/2012	Liver Injury: The Role of Muscarinic Receptors. Gastroenterology Grand Rounds, University of Arkansas for Medical Sciences.
5/2012	Therapeutic Potential of Muscarinic Receptors in Liver Injury. Gastroenterology Grand Rounds, Penn State M.S.Hershey Medical Center Hershey, PA.
8/2011	Liver Injury: Therapeutic Potential of Muscarinic Receptors. Internal Medicine Grand Rounds, University of Maryland School of Medicine.
2/2008	Primary Prophylaxis for Variceal Bleeding-Medical Therapy: Standards and Options. Internal Medicine Grand Rounds, University of Maryland School of Medicine.
10/2005	Bile acids Modulate Vascular Tone. Gastroenterology Research Conference, Division of Gastroenterology and Hepatology, University of Maryland School of Medicine.
11/2004	Hemodynamic Changes in Cirrhosis: Role of Nitric Oxide. Gastroenterology Grand Rounds, Division of Gastroenterology and Hepatology, University of Maryland School of Medicine.
6/2003	Wilson's Disease: Hepatic Aspects. Internal Medicine Grand Rounds, University of Arkansas for Medical Sciences.

Outpatient preceptor

Hepatology Fellows clinic

Research Mentor

Gastroenterology Fellows

7/11-12/13 Nathalie Urrunaga, M.D.

9/11-12/13	Vikrant Rachakonda, M.D.
7/08-07/09	Mark Flasar, M.D.
7/07-6/11	Nirish Shah, M.B.B.S.
6/03-3/04	Ingrid Chacon, M.D.
07/12-07/16	Ravirajsinh Jadeja, Ph. D.

Medical Students (summer research internship)

6/12-7/12	Suchismita Dash
6/11-8/11	Daniel Ahmad
6/09-8/09	Brian Shiu

Medicine Residents

3/09-6/09	Thomas Simcox, M.D. Meng Wang, M.D.
7/15-present	Sebastian Larion, M.D.
6/17-present	Jamie A. Hood, D.O.
6/17-present	Ammara Khalid, D.O.

Transplant Hepatology Mentor

1/10-7/13	Vikrant Rachakonda, M.D. Current Status-Instructor, University of Pittsburgh.
7/10-6/11	Darryn Potosky, M.D. Current Status-Assistant Professor of Medicine, University of Maryland.
7/10-6/11	Apurva Modi, M.D. Current Status- Consultant Hepatologist, Baylor-Health Texas Affiliate.
7/06-6/07	Preeti Reshamwalla, M.D. Current Status- Assistant Professor of Medicine, Emory University.
7/07-6/08	Noelle Brickman-Williams, C.R.N.P. Current Employer, Unknown.
7/08-6/09	Janet Gripshover, C.R.N.P. Current Employer, Section of Hepatology, University of Maryland Medical Center.
7/15-6/16	Michael Hodo, D.N.P. Current Employer, Section of Hepatology, Georgia VA, Augusta, Georgia.
5/17-6/18	Jeremy Velcheck, C.R.N.P. Current Employer, Section of Hepatology, Georgia VA, Augusta, Geisinger Medical Center, Danville.

Reviewer

Journals

The American Journal of the Medical Sciences
 American Journal of Physiology
 Biochemical Pharmacology
 BMC Cancer

Clinical & Experimental Pharmacology
 Clinical Epidemiology
 Drug, Healthcare and Patient Safety
 Hepatology International
 International Journal of Molecular Sciences
 Journal of Pharmacology and Experimental Therapeutics
 Journal of Visualized Experiments
 Liver International
 Oncotarget
 PLoS One
 Pharmaceutical Sciences
 PeerJ
 Vascular Pharmacology
 World Journal of Gastroenterology

Editorial Board Member

Journal of Visualized Experiments
 World Journal of Gastrointestinal Pathophysiology
 Gastroenterology and Hepatology Research

Study Section

2010	Dutch Digestive Foundation (ad hoc)
2015	Early Career Reviewer, Center for Scientific Review, National Institutes of Gastrointestinal Drugs Advisory Committee at the FDA Health (ad hoc)
2015-19	Gastrointestinal Drugs Advisory Committee, FDA

Awards

2016	AASLD Emerging Liver Scholar Award recipient (Mentee: Sebastian Larion; Mentor: Sandeep Khurana)
2012	Basic Science Publication of the Year Award, Department of Medicine, University of Maryland School of Medicine
2007	Certificate of Teaching Excellence, GI Physiology, Functional Systems, University of Maryland School of Medicine
1997	Special Recognition Award for Outstanding Performance as an Intern- Department of Internal Medicine, SUNY-Health Science Ctr, Brooklyn, New York

Grant Support

1. NIH 1 K08DK081479-01 Sandeep Khurana (PI)	7/1/08 – 6/30/14
NIH/NIDDK	
Percent Effort: 80 %	

Mechanisms of Vascular Dysfunction in Cirrhosis

The goals of this application are (1) To define the role of M3R-dependent signaling in bile acid-mediated vasodilation; (2) To establish that bile acid-mediated changes in small mesenteric arterial tone mimic changes in aortic vascular tone; (3) To determine the mechanism whereby M3R contributes to vascular dysfunction in a mouse model of cirrhosis.

2. Baltimore Research and Education Foundation. Sandeep Khurana (PI). 08/01/06-07/31/07

Amidation Modulates Bile Acid Signaling.

Percent Effort: 10%.

The goal of this application was to define the effect of amidation on interaction of deoxycholic acid with RTKs and GPCR on downstream signaling in endothelial cells.

3. NIDDK ARRA Sandeep Khurana (PI) 1/1/2010-12/31/2010

4. NIH 1 T32 DK76872-01 J-P Raufman (PI) 7/1/05 - 6/30/13

NIH/NIDDK

Research Training in Gastroenterology

Role: Junior Faculty, Clinical and Translational Science

5. AASLD. NP/PA Clinical Hepatology Fellowship (Recipient: Michael Hodo; Mentor: Sandeep Khurana). 07/15-06/16.

6. 2016 AASLD Emerging Liver Scholar Award (Recipient: Dr. Sebastian Larion; Mentor: Sandeep Khurana).

7. Effect of Intravenous Albumin on Renal Impairment and Mortality in Patients with Cirrhosis and Spontaneous Bacterial Peritonitis. 2017. Geisinger Medical Center. (\$2000.00).

8. Occurrence of Fever in SBP and Clinical Implications. 2017. Geisinger Medical Center. (\$2000.00).

Patents

US Provisional Application No. 60/913.800. Treatment of Cancer with Anti-Muscarinic Receptor Agents

Publications

Peer Reviewed Journals

1. **Sandeep Khurana** Sara Gaines, Thomas Lee et al. ProvenCare: Geisinger Clinic Approach to Treating HCV.**NEJM Catalyst. 2018.**
2. Ravirajsinh N. Jadeja, Menaka Thounaojam, Manuela Bartoli, **Sandeep Khurana**. Deoxycholyglycine, a Conjugated Secondary Bile Acid, Reduces Vascular Tone by Attenuating Ca²⁺ Sensitivity via Rho Kinase. **Toxicology and Applied Pharmacology. 2018. (accepted in press).**
3. Sebastian Larion, **Sandeep Khurana**. Clinical Studies Investigating the Effect of Vitamin E Therapy in Patients with NASH. **Clinical Liver Disease. 2018 (accepted in press).**
4. Ravirajsinh N. Jadeja, Vikrant Rachakonda, **Sandeep Khurana**. Targeting Cholinergic System to Modulate Liver Injury. **Current Drug Targets 2017 (accepted in press).**
5. George Cholankeril, Ronak Patel, **Sandeep Khurana**, Sanjaya K Satapathy. Hepatocellular carcinoma in non-alcoholic steatohepatitis: Current knowledge and implications for management. **World J Hepatol 9: 533-543; 2017.**
6. Ravirajsinh Jadeja, Menaka Thounaojam, **Sandeep Khurana**. Characterization of Pressure-Mediated Vascular Tone in Resistance Arteries from Bile Duct-Ligated Rats. **Oncotarget 8: 30706-30722 2017.**
7. Ravirajsinh Jadeja, Kapil Upadhyay, Ranjitsinh Devkar, and **Sandeep Khurana**. Naturally Occurring Nrf2 Activators: Potential in Treatment of Liver Injury. **Oxidative Medicine and Cellular Longevity 3453926; 2016.**
8. Ravirajsinh N. Jadeja, Nathalie H. Urrunaga, Daniel Ahmad, **Sandeep Khurana**. Data Regarding M1 Muscarinic Receptor-Mediated Modulation of Hepatic Catalase Activity in Response to Oxidative Stress. **Data in Brief 6:405-9, 2015.**
9. Vikrant Rachakonda, Ravirajsinh N. Jadeja, Nathalie H. Urrunaga, Nirish Shah, Daniel Ahmad, Kunrong Cheng, William S. Twaddell, Jean-Pierre Raufman, and **Sandeep Khurana**. M1 Muscarinic Receptor Deficiency Attenuates Azoxymethane-Induced Chronic Liver Injury in Mice. **Sci. Rep. 5, 14110; 2015.**
10. Ravirajsinh N. Jadeja, Nathalie H. Urrunaga, Suchismita Dash, **Sandeep Khurana** et al. Withaferin-A Reduces Acetaminophen-Induced Liver Injury in Mice. **Biochemical Pharmacology 97: 122-32, 2015.**
11. Ravirajsinh Jadeja, Vikrant Rachakonda, **Sandeep Khurana**. Assessing Myogenic Response and Vasoactivity in Resistance Mesenteric Arteries Using Pressure Myography. **Journal of Visualized Experiments 101: (101): e50997, 2015.**

12. Urrunaga NH, Jadeja RN, Rachakonda V, Ahmad D, McLean LP, Cheng K, Shah V, Twaddell WS, Raufman JP, **Khurana S**. M1 muscarinic receptors modify oxidative stress response to acetaminophen-induced acute liver injury. **Free Radical Biology & Medicine** 78: 66-81, 2015.
13. Diana Vivian, Kunrong Cheng, **Sandeep Khurana**, Su Xu, Edwin H. Kriel, Paul Dawson, Jean-Pierre Raufman and James E. Polli. Design and Evaluation of a Novel Trifluorinated Imaging Agent for Assessment of Bile Acid Transport Using Fluorine Magnetic Resonance Imaging (MRI). **Journal of Pharmaceutical Sciences** 103: 3782-92, 2014.
14. Kunrong Cheng, Guofeng Xie, **Sandeep Khurana**, Jonathon Heath, Cinthia B. Drachenberg, Jennifer Timmons, Nirish Shah, Xue-Min Gao and Jean-Pierre Raufman. Divergent effects of muscarinic receptor subtype gene ablation on murine colon tumorigenesis reveal a potential role for zinc finger protein 277 in colon neoplasia. **BMC Cancer** 3; 13: 77, 2014.
15. Diana Vivian, Kunrong Cheng, **Sandeep Khurana**, Su Xu, Edwin H. Kriel, Paul Dawson, Jean-Pierre Raufman and James E. Polli. *In vivo* performance of a novel fluorinated magnetic resonance imaging agent for functional analysis of bile acid transport. **Molecular Pharmaceutics** 5; 11 :1575-82, 2014.
16. **Sandeep Khurana**, Ravirajsinh Jadeja, William Twaddell, Kunrong Cheng, Vikrant Rachakonda, Neeraj Saxena and Jean-Pierre Raufman. Effects of Modulating M3 Muscarinic Receptor Activity on Azoxymethane-Induced Liver Injury in Mice. **Biochemical Pharmacology** 86(2):329-38, 2013.
17. Jean-Pierre Raufman, Su Xu, Kunrong Cheng, **Sandeep Khurana**, Diana Vivian, Da Shi, Rao Gullapalli, and James Polli. Phrygian Cap Appearance Of A Mouse Gallbladder On Magnetic Resonance Imaging. **Journal of Veterinary Science & Medical Diagnosis** 28; 2(1), 2013.
18. Diana Vivian, Kunrong Cheng, **Sandeep Khurana**, Su Xu, Valerie Whiterock, Drew Witter, Kimberley A. Lentz, Kenneth S. Santone, Jean-Pierre Raufman, and James E. Polli. Design and Characterization of a Novel Fluorinated Magnetic Resonance Imaging Agent for Functional Analysis of Bile Acid Transporter Activity. **Pharmaceutical Research** 30(5):1240-51, 2013.
19. **Sandeep Khurana**, Hema Raina, Valeria Pappas, Jean-Pierre Raufman, Thomas Pallone. Effects of Deoxycholyglycine, a Conjugated Secondary Bile Acid, on Myogenic Tone and Agonist-Induced Contraction in Rat Resistance Arteries. **PLoS ONE** 7(2): e32006, 2012.
20. Raufman JP, Cheng K, Saxena N, Chahdi A, Belo A, **Khurana S**, Xie G. Muscarinic receptor agonists stimulate matrix metalloproteinase 1-dependent

invasion of human colon cancer cells. **Biochem Biophys Res Commun** 18; 415(2):319-24, 2011.

21. Meng Wang, Darryn Potosky, **Sandeep Khurana**. Liver Infarction after TIPS in a Liver Transplant Recipient. **Hepatology** 54(5):1887-8, 2011.
22. Raufman JP, Shant J, Xie G, Cheng K, Gao XM, Shiu B, Shah N, Drachenberg C, Heath J, Wess J, **Khurana S**. Muscarinic Receptor Subtype-3 Gene Ablation and Scopolamine Butylbromide Treatment Attenuate Small Intestinal Neoplasia in Apcmin/+ Mice. **Carcinogenesis** 32(9):1396-402, 2011.
23. Angelica Belo, Kunrong Cheng, Ahmed Chahdi, Jasleen Shant, Guofeng Xie, **Sandeep Khurana** and Jean-Pierre Raufman. Muscarinic receptor agonists stimulate human colon cancer cell migration and invasion. **American Journal of Physiology - Gastrointestinal and Liver Physiology** 300(5): G749-60, 2011.
24. Jean-Pierre Raufman, Su Xu, Kunrong Cheng, **Sandeep Khurana**, Diana Johnson, Changxing Shao, Maureen Kane, Da Shi, Rao Gullapalli, and James E. Polli. *In Vivo* Magnetic Resonance Imaging To Detect Biliary Excretion of ¹⁹F-Labeled Drug In Mice. **Drug Metabolism and Disposition** 39(5):736-9, 2011.
25. **Sandeep Khurana**, Jean-Pierre Raufman and Thomas L. Pallone. Bile Acids Regulate Cardiovascular Function. **Clinical and Translational Science** 4(3):210-8, 2011.
26. Zhong Zhang, Hai Lin, Chunhua Cao, **Sandeep Khurana**, and Thomas L. Pallone. Voltage gated divalent currents in descending vasa recta pericytes. **American Journal of Physiology-Renal Physiology** 299(4): F862-71, 2010.
27. **Sandeep Khurana**, Nirish Shah, Kunrong Cheng, Brian Shiu, Roxana Samimi, Angelica Belo, Jasleen Shant, Cinthia Drachenberg, Jurgen Wess, Jean-Pierre Raufman. Scopolamine Treatment and Muscarinic Receptor Subtype 3 Gene Ablation Augment Azoxymethane-Induced Murine Liver Injury. **Journal of Pharmacology and Experimental Therapeutics** 333:639-649, 2010.
28. **Sandeep Khurana**, Thomas Simcox, William Twadell, Mark Flasar. Dialysis Reduces Portal Pressure in Patients with Chronic Hepatitis C. **Artificial Organs** 34 (7): 570-579, 2010.
29. Potosky D, Twaddell W, **Khurana S**. Acute Lymphoblastic Leukemia Presenting as Painless Jaundice. **Clinical Gastroenterology and Hepatology** 8(2): e15-6, 2009.
30. Nirish Shah, **Sandeep Khurana**, Kunrong Cheng, and Jean-Pierre Raufman. Muscarinic receptors and ligands in cancer. **American Journal of Physiology** 296(2):C221-32, 2009.

31. Jean-Pierre Raufman, Roxana Samimi, Nirish Shah, **Sandeep Khurana**, Jasleen Shant, Cinthia Drachenberg, Guofeng Xie, Jürgen Wess, and Kunrong Cheng. Genetic Ablation of M3 Muscarinic Receptors Attenuates Murine Colon Epithelial Cell Proliferation and Neoplasia. **Cancer Research** 68, 3573-3578, 2008.
32. **Sandeep Khurana**, Pankaj Singh. Rifampin for Treatment of Pruritus due to Chronic Cholestasis: A Meta-analysis of Prospective Controlled Trials. **Liver International** 26: 943–948, 2006.
33. **Sandeep Khurana**, Kunrong Chen, Jean-Pierre Raufman. Steroid Ring Hydroxylation and Conjugation Modulate Bile Acids-Mediated Cellular Signaling: Molecular Basis of Hormone-Like Behavior. **Medical Hypotheses and Research** 3: 651-663, 2006.
34. **Sandeep Khurana**, Guofeng Xie, Masahisa Yamada, Jurgen Wess, Richard H Kennedy, Jean-Pierre Raufman. Deoxycholytaurine causes endothelium-dependent muscarinic receptor mediated NO-induced smooth muscle dilation in murine thoracic aorta. **European Journal of Pharmacology** 517:103-110, 2005.
35. **Sandeep Khurana**, Guofeng Xie, J-P Raufman, Masahisa Yamada, Jurgen Wess, Richard H Kennedy. Vasodilatory effects of acetylcholine are diminished in aorta from muscarinic-3 receptor knock out mice. **European Journal of Pharmacology** 493:127-132, 2004.
36. Cheng K, **Khurana Sandeep**, Chen Y, Kennedy RH, Zimniak P, Raufman JP. Lithocholylole, a bile acid/acetylcholine hybrid, is a muscarinic receptor antagonist. **Journal of Pharmacology & Experimental Therapeutics** 303(1): 29-35, 2002.

Letters to the editor

37. Yeong Yeh Lee, Siegfried Yu, **Sandeep Khurana**, Satish Rao. Dietary Fiber and Risk of Inflammatory Bowel Disease: Fact or Hype? **Gastroenterology** 146:1133-4, 2014.
38. Yeong Yeh Lee, Venugopalareddy Gangireddy, **Sandeep Khurana**, Satish Rao. Are we ready for combination therapy in moderate-to-severe ulcerative colitis? **Gastroenterology** 147:544, 2014.
39. **Sandeep Khurana**. Overkill. *The New Yorker*. June 22, 2015.

Book Chapters

40. Thomas L. Pallone, **Sandeep Khurana**, Chunhua Cao. Voltage Gated Calcium Channels: Structure and Function (CACNA). **Encyclopedia of Signaling Molecules**. 2012.

Online Commentary

41. Ravirajsinh N. Jadeja, **Sandeep Khurana**. Withaferin-A, a phytochemical, has potential to reduce liver injury due to acetaminophen overdose. **Atlas of Science**. Feb 5, 2016.

Abstracts and Presentations

1. Kashif Tufail, Pranav Patel, **Sandeep Khurana**, Andrea L. Berger, Amitpal S. Johal, Bradley Confer, David Diehl, Harshit Khara. Liver Stiffness Assessed by Transient Elastography Overestimates Fibrosis Compared to Histology of Liver Specimens Obtained by Endoscopic Ultrasound Guided Liver Biopsy (EUS-LB). American College of Gastroenterology 2018
2. Amir N. Rezk, Prashant Mudireddy, **Sandeep Khurana**, Harshit S. Khara. A Case of Carcinoid Tumor of the Ampulla of Vater. American College of Gastroenterology 2017.
3. Sebastian Larion, Jennifer Thompson, Josh Butcher, Steven Haigh, Abdalrahman Zarzour, James Mintz, **Sandeep Khurana**, David Fulton, David Stepp. Nox1 as a Novel Source of Hepatic Oxidant Stress during Obesity to Promote Lipotoxicity in Humans and Mice with Non-alcoholic Fatty Liver Disease. **Accepted AASLD 2017. Presidential Poster of Distinction.**
4. Sebastian Larion, Jennifer Thompson, Josh Butcher, Steven Haigh, James Mintz, **Sandeep Khurana**, David Fulton, David W. Stepp. Nox1 Inhibition Attenuates Non-Alcoholic Fatty Liver Disease through altered De Novo Lipogenesis. 2017. Experimental Biology.
5. S Larion, J Thompson, J Butcher, J Mintz, **Khurana S**, Fulton D, DW Stepp. NOX1 Deletion Inhibits Hepatic Steatosis in db/db Model of Non-alcoholic Fatty Liver Disease. Hepatology, 2016.
6. Ravirajsinh Jadeja, Priyanka Thankur, **Sandeep Khurana** Deoxycholyglycine (DCG), a Conjugated Secondary Bile Acid (BA), Reduces Myogenic Tone by reducing Ca²⁺ Sensitivity via Rho kinase pathway. Hepatology, 2016.

7. Matthew R Powell, Stephen Wilhelm, **Sandeep Khurana**, Roni Bollag, and James F Shikle. Plasma Exchange Alleviates Intractable Pruritus in a Liver Transplant Patient with Chronic Rejection. *Journal of Clinical Apheresis* 2016, 63.
8. Sebastian Larion, James D. Mintz, David J. Fulton, **Sandeep Khurana**, and David W. Stepp. Nonalcoholic Fatty Liver Disease is Associated with Dysfunction in Hepatic Circadian Rhythm. 2016. *Experimental Biology*.
9. Ravirajsinh N. Jadeja, Nathalie H. Urrunaga, Suchismita Dash, Neeraj Kumar Saxena, and **Sandeep Khurana**. Withaferin-A Reduces Acetaminophen-Induced Liver Injury in Mice. *Hepatology*, 2015, 1911.
10. Ravirajsinh Jadeja, Priyanka Thankur, **Sandeep Khurana**, Michael Duncan. Type XVIII collagen regulates regulates cell survival and the anti-oxidant response during elevated oxidative stress conditions, in vitro. *Hepatology*, 2014, 1077.
11. Ravirajsinh Jadeja, **Sandeep Khurana**. Pharmacological Inhibition of M1 Muscarinic Receptors (M1R) Reduces Oxidative Stress in AML12 Hepatocytes. *Hepatology*, 2014, 1053.
12. Ravirajsinh Jadeja, **Sandeep Khurana**. In Cirrhosis, Calcium Desensitization Underlies Reduced Myogenic Tone in Small Resistance Mesenteric Arteries. *Hepatology*, 2014, 2007.
13. Diana Vivian, Kunrong Cheng, **Sandeep Khurana**, Su Xu, Edwin H. Kriel, Paul Dawson, James Polli, Jean-Pierre Raufman. In Vivo Performance of a Novel Fluorinated Magnetic Resonance Imaging Agent for Functional Analysis of Bile Acid Transport. *Gastroenterology*, 2014, S-524.
14. Vikrant Rachakonda, Nathalie H. Urrunaga, Ravirajsinh Jadeja, Daniel Ahmad, Leon McLean, William S. Twaddell, Kunrong, Cheng, Neeraj K. Saxena, Jean-Pierre Raufman, **Sandeep Khurana**. Genetic Ablation of M1 Muscarinic Receptors (M1R) Attenuates Azoxymethane (AOM)-Induced Murine Liver Injury by TRAIL-R2-Mediated Hepatic Stellate Cell (HSC) Apoptosis. *Hepatology*, 2013, 120A.
15. Nathalie H. Urrunaga, Ravirajsinh Jadeja, Vikrant Rachakonda, Daniel Ahmad, Leon McLean, William S. Twaddell, Neeraj K. Saxena, Kunrong Cheng, Jean-Pierre Raufman, Sandeep Khurana. Mechanisms Underlying Attenuated Acetaminophen (APAP)-Induced Liver Injury in M1R Deficient (M1R^{-/-}) Mice. (2013) *Hepatology* 58 (Suppl): 163A.
16. Panjamurthy Kuppusamy, **Sandeep Khurana**, Dipali Sharma, Neeraj K Saxena. Honokiol resolves hepatic steatosis and inhibits lipotoxic effects of free fatty acids

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