

SANDEEP KHURANA, M.B.B.S.

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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

Additional Education

08/2017-09/2019 Temple University.
HR5054 Leadership Development
ACCT 5001 Financial and Managerial Accounting
MKG 5001 Marketing Management and Strategy
STAT 5001 Quantitative Methods for Business
LGLS 5701 Legal and Ethical Foundations in Business

Employment History

9/2019-Present **Professor of Medicine**, Geisinger Commonwealth School of Medicine.

2/2018-9/2019	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
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

2019-present Activity Director, Transplant Journal Club, Geisinger Health System

2016-present Member, Liver Transplant Committee, Geisinger Health System

2016-present Member, Liver Tumor Board, Geisinger Health System

2016-present Activity Director, Liver Path Conference, Geisinger Health System

2019-present Organizing Committee, Transplant Journal Club, 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	Wilson's Disease (45 min)
2007	Hepatorenal Syndrome (45min)
2006	Treatment of Variceal Bleeding (45 min)
2005	Liver Biopsy-A Hands-on Approach (120 min)
	Wipple's Disease (40 min)
	Tropical and Celiac Sprue (40 min)
	Gastric cancer (40 min)
	Gall bladder Diseases-Stones, Polyps&Cancer (45 min)
	Wilson's 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	Crohn's 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 Crohn's 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

10/2019 Renal Dysfunction in Cirrhosis. Pennsylvania Society of Gastroenterology

04/2019 Liver Disease in Pregnancy. MFM Fellow Lecture

09/2018 HCV and Kidney Disease. Annual Geisinger Transplant Symposium.

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.
07/18-06/19	Kashif Tufail, M.B.B.S.
07/19-06/20	David Hanna, D.O.
07/20-	Umair Iqbal, M.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.
6/17-6/18	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, Geisinger Wyoming Valley.
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, Geisinger Medical Center, Danville.

Reviewer

Journals

Aging and Disease
 American Journal of Physiology
 Biochemical Pharmacology
 Biomedicine & Pharmacotherapy

BioMed Research International
 BMC Cancer
 Case Reports in Hematology
 Clinical & Experimental Pharmacology
 Clinical Epidemiology
 Drug Design, Development and Therapy
 Drug, Healthcare and Patient Safety
 Frontiers in Medicine
 Hepatology International
 International Journal of Molecular Sciences
 Journal of Pharmacology and Experimental Therapeutics
 Journal of Visualized Experiments
 Liver International
 Oxidative Medicine and Cellular Longevity
 Oncotarget
 PLoS One
 Pharmaceutical Sciences
 Pharmacological Research
 PeerJ
 The American Journal of the Medical Sciences
 Vascular Pharmacology
 World Journal of Gastroenterology

Editorial Board Member

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

Guest Editor

BioMed Research International
Special issue: Therapeutic Advances in the Treatment of Acute Liver Injury

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 (voting member)
2020-24	Gastrointestinal Drugs Advisory Committee, FDA (voting member)
2019	NIDDK ZRG1 DKUS-R 10 Study Section, NIH (ad hoc)

Awards

2016	AASLD Emerging Liver Scholar Award recipient (Mentee: Sebastian Larion; Mentor: Sandeep Khurana)
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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. 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 (Total cost: \$10,000).

2. NIH 1 K08DK081479-01.

Sandeep Khurana (PI); 7/1/08 – 6/30/14

NIH/NIDDK

Percent Effort: 80%

Mechanisms of Vascular Dysfunction in Cirrhosis (Total cost: \$ 718,957).

3. NIH 1 K08DK081479-01S1

Sandeep Khurana (PI); (Total cost: \$ 540).

4. NIDDK ARRA

Sandeep Khurana (PI) ;1/1/2010-12/31/2010

(Total cost: \$ 50,000).

5. NIH 1 T32 DK76872-01

J-P Raufman (PI);7/1/05 - 6/30/13

NIH/NIDDK

Research Training in Gastroenterology

Role: Faculty, Clinical and Translational Science

6. AASLD NP/PA Clinical Hepatology Fellowship

(Recipient: Michael Hodo; **Mentor:** Sandeep Khurana).

07/15-06/16.

(Total cost: \$78,000)

7. 2016 AASLD Emerging Liver Scholar Award

(Recipient: Dr. Sebastian Larion; **Mentor:** Sandeep Khurana).

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

9. Occurrence of Fever in SBP and Clinical Implications. 2017. Geisinger Medical Center. (Total cost: \$2000.00).

10. Setmelanotide (RM-493) Phase 2 Treatment Trial in Patients with Rare Genetic Disorders of Obesity. Sub-I: Sandeep Khurana. PI: Chris Still.

11. Geisinger Health Plan/Geisinger Clinic Quality Pilot Fund (QPF) FY 2020. Patient-centered Strategies to Lower Costs by Reducing Progression of Fatty Liver Disease
PI: Sandeep Khurana
 (Total cost: \$437,483). *Currently enrolling.*

12. Tissue Registry for Novel Mechanisms of NASH.
PI: Sandeep Khurana (\$100,000). 2019-2021. *Currently enrolling.*

13. Pilot study evaluating endoscopic ultrasound with Shearwave Elastography for diagnosis and staging of liver fibrosis. PI: David Diehl, **Co-PI:** Sandeep Khurana. Sponsor: Olympus. *Currently enrolling.*

Pending

RO1 NIDDK. Repurposing Monomethyl Fumarate to Treat Pediatric Acute Liver Failure. PI: Ravi Jadeja. Consultant: Sandeep Khurana.

Patents

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

Publications

Peer Reviewed Journals

1. Umair Iqbal, Zohaib Ahmed, Hafsa Anwar, Nihit M. Shah, Wade Lee, Ali Nawras, Harshit S. Khara, Aijaz Ahmed, **Sandeep Khurana**. In Cirrhosis, Hemorrhagic Ascites is Associated with Reduced Survival: A Meta-analysis and Systematic Review. **Gastroenterology Research (Accepted for publication 2022)**
2. Hanna, David; Jamieson, Scott; Lee, Christine; Pluskota, Christopher; Bressler, Nicole; Benotti, Peter; **Khurana, Sandeep** et.al. Sarcopenic Obesity in NAFLD: Bioimpedance Brings to Light What Scales Hide. **Obesity Science & Practice**. 7: 629-645, 2021.

3. Umair Iqbal, Ravirajsinh N. Jadeja, Harshit S. Khara, **Sandeep Khurana**. A Comprehensive Review Evaluating the Impact of Protein Source (vegetarian vs. meat based) in Hepatic Encephalopathy. **Nutrients**. 13 (2), 370, 2021.
4. Ravirajsinh N Jadeja, Chu Xin, Craig Wood, Manuela Bartoli, **Sandeep Khurana**. M3 Muscarinic receptor activation reduces hepatocyte lipid accumulation via CaMKK β /AMPK pathway. **Biochemical Pharmacology** 2019. **169:113613**.
5. Menaka C. Thounaojam, Ravirajsinh N. Jadeja, Marie Warren, Folami L. Powell, Raghavan Raju, Diana Gutsaeva, **Sandeep Khurana**, Pamela M. Martin, Manuela Bartoli MicroRNA-34a (miR-34a) mediates retinal endothelial cell premature senescence through mitochondrial dysfunction and loss of antioxidant activities. **Antioxidants** 2019 22;8(9). pii: E328. doi: 10.3390/antiox8090328.
6. **Sandeep Khurana**, Waseem Butt, Harshit S. Khara, Amitpal S. Johal, Sara F. West, Zong-Ming E. Chen, Andrea L. Berger, and David L. Diehl. Bi-lobar liver biopsy via EUS enhances the assessment of disease severity in patients with non-alcoholic steatohepatitis. **Hepatology International** 2019 13(3):323-329.
7. Bradley D. Confer, John Walker, **Sandeep Khurana**, Alberto Unzueta, Harshit S. Khara, Amit S. Johal and David L. Diehl. Gastrointestinal Endoscopy 2019 2019 Aug;90(2):321-322 (In response to: Efficacy and safety of EUS-guided liver biopsy: a systematic review and meta-analysis. **Gastrointestinal Endoscopy**. 2019;89:238-246)
8. Sandeep Khurana, Harshit S Khara. Is Emricasan (IDN-6556), an oral pan-caspase inhibitor, ready for controlled trials? **Hepatology** 2019 Sep;70(3):1078-1079.
9. Ravirajsinh N. Jadeja, Malita Jones, Folami L. Powell, **Sandeep Khurana**, Nagendra Singh, and Pamela M. Martin. Loss of GPR109a Induces Aging-Associated Hepatic Steatosis. **Aging** 2019 18;11(2):386-400.
10. Kapil K. Upadhyay, Ravirajsinh N. Jadeja, Jaymesh M. Thadani, Apeksha Joshi, Aliasgar Vohra, Vishal Mevada, Rajesh Patel, **Sandeep Khurana**, Ranjitsinh V. Devkar. Carbon Monoxide Releasing Molecule A-1 Attenuates Acetaminophen-Mediated Hepatotoxicity in Mice by Reducing Oxidative Stress. **Toxicology and Applied Pharmacology** 360:99-108, 2018.
11. **Sandeep Khurana** Sara Gaines, Thomas Lee et al. ProvenCare: Geisinger Clinic Approach to Treating HCV. **NEJM Catalyst**. 2018.
12. 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** 348:14-21, 2018.

13. Sebastian Larion, **Sandeep Khurana**. Clinical Studies Investigating the Effect of Vitamin E Therapy in Patients with NASH. **Clinical Liver Disease**. 2018 <https://doi.org/10.1002/cld.687>
14. Ravirajsinh N. Jadeja, Vikrant Rachakonda, **Sandeep Khurana**. Targeting Cholinergic System to Modulate Liver Injury. **Current Drug Targets** 19(8):938-944, 2017.
15. George Cholankeril, Ronak Patel, **Sandeep Khurana**, Sanjaya K Satapathy. Hepatocellular carcinoma in non-alcoholic steatohepatitis: Current knowledge and implications for management. **World J Hepatology** 9: 533-543; 2017.
16. 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.
17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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.

24. 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.
25. 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.
26. 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.
27. 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.
28. **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.
29. 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.
30. 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.
31. **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.
32. 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.
33. Meng Wang, Darryn Potosky, **Sandeep Khurana**. Liver Infarction after TIPS in a Liver Transplant Recipient. **Hepatology** 54(5):1887-8, 2011.
34. 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.
35. 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.
36. 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.
37. **Sandeep Khurana**, Jean-Pierre Raufman and Thomas L. Pallone. Bile Acids Regulate Cardiovascular Function. **Clinical and Translational Science** 4(3):210-8, 2011.
38. 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.
39. **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.
40. **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.
41. Potosky D, Twaddell W, **Khurana S**. Acute Lymphoblastic Leukemia Presenting as Painless Jaundice. **Clinical Gastroenterology and Hepatology** 8(2): e15-6, 2009.
42. 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.

43. 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.
44. **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.
45. **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.
46. **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.
47. **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.
48. Cheng K, **Khurana Sandeep**, Chen Y, Kennedy RH, Zimniak P, Raufman JP. Lithocholylcholine, a bile acid/acetylcholine hybrid, is a muscarinic receptor antagonist. **Journal of Pharmacology & Experimental Therapeutics** 303(1): 29-35, 2002.
49. **Sandeep Khurana**. (In response to: *Overkill*). The New Yorker. June 22, 2015.

Book Chapters

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