BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Merchant, Juanita L.	Professor
eRA COMMONS USER NAME merchanj	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Stanford University, Stanford, CA	B.S.	1977	Biology
Yale Univ. School of Medicine, New Haven, CT	Ph.D.	1984	Cell Biology
Yale Univ. School of Medicine, New Haven, CT	M.D.	1984	Internal Medicine

A. Positions and Employment

1984-85 Internship, Internal Medicine, Massachusetts General Hospital, Boston, Massachusetts
1985-87 Resident, Internal Medicine, Massachusetts General Hospital, Boston, Massachusetts
1987-90 Fellow, Clinical and Research, Internal Medicine, Massachusetts General Hospital, Boston, Massachusetts
1990-91 Clinical Fellow in Gastroenterology, University of California, Los Angeles, California
1991-98 Assistant Professor, Internal Medicine and Physiology
University of Michigan Medical Center, Ann Arbor, Michigan
1994-2002 Assistant Investigator, Howard Hughes Medical Institute
University of Michigan Medical Center, Ann Arbor, Michigan
1998-2002 Associate Professor, Internal Medicine and Molecular and Integrative Physiology
University of Michigan Medical Center, Ann Arbor, Michigan
2003-present Professor, Internal Medicine and Molecular and Integrative Physiology,
University of Michigan Medical Center, Ann Arbor, Michigan
1993-present Faculty, Graduate Program in Cellular and Molecular Biology
University of Michigan Medical Center, Ann Arbor, Michigan

Other Experience and Professional Memberships

1996 Editorial Board, Digestive Diseases and Sciences
1998 Editorial Board, Gastroenterology
2000 Editorial Board, American Journal of Physiology (GI)
2001 Councilor, American Society for Clinical Investigators (ASCI)
2003 Chair, GMA2 and GCMB Study Section
2004 Editorial Board, Journal of Clinical Investigation
2005 NIDDK Council (DKNAC)

Honors

1984 Henry J. Kaiser Award, Yale School of Medicine
1984 Alpha Omega Alpha, Yale School of Medicine
1984 Medical Scientist Award, Yale School of Medicine
1987 Robert Wood Johnson Minority Faculty Development Award
1992 Munn Endowment Cancer Award, University of Michigan
1994 University of Michigan, Faculty Career Development Award
1998 R.Robert and Sally Funderburg Gastric Cancer Award
1998 American Society for Clinical Investigators
1998 Jerome Conn Award for Research Excellence UM Internal Medicine
2005 Association of American Physicians (AAP)
2008 H. Marvin Pollard Professor of Gastrointestinal Sciences
2008 National Academy of Science, Institute of Medicine

B. Selected peer-reviewed publications: (selected)

1. Bai L and **Merchant JL**. Transcription factor ZBP-89 cooperates with histone acetyltransferase p300 during butyrate activation of p21 waf1 transcription in human cells. J Biol Chem. 2000; 275:30725-33.
2. Keates AC, Keates S, Kwon JH, Arseneau KO, Law DJ, Bai L, **Merchant JL**, Wang TC, Kelly CP. ZBP-89, Sp1, and NF-κB regulate ENA-78 gene expression in Caco-2 human colonic epithelial cells. J Biol Chem. 2001; 276:43713-22.
3. Bai L and **Merchant JL**. ZBP-89 Promotes growth arrest through stabilization of p53. Mol Cell Biol. 2001; 21:4670-83.
4. Zavros Y, Rieder G, Ferguson A, Samuelson L and **Merchant JL**. Genetic or chemical hypochlorhydria is associated with inflammation that modulates parietal and G-cell populations. Gastroenterology 2002; 122:119-33.
5. Zavros Y, Rieder G, Ferguson A, Samuelson L and **Merchant JL.** Hypergastrinemia in response to gastric inflammation suppresses tissue somatostatin and D-cell numbers Am J Physiol. 2002; 282:G175-83.
6. Bai L, Logsdon C, **Merchant JL.** Regulation of epithelial cell growth by ZBP-89: potential relevance in pancreatic cancer. Int J Gastrointest Can. 2002; 31(1-3):79-88.
7. Rathinavelu S, Zavros Y, **Merchant JL.** *Acinetobacter lwoffii* infection and gastritis. Microbes Infect 2003; 5:651-7.
8. **Merchant JL**, Bai L, Okada M. ZBP-89 mediates butyrate regulation of gene expression. J Nutr. 2003; 133(7 Suppl):2456S-60S.
9. Zavros Y, Rathinavelu S, Kao JY, Todisco A, Del Valle J, Weinstock JV, Low MJ, **Merchant JL.** Treatment of *Helicobacter* gastritis with interleukin-4 requires somatostatin. Proc Nat Acad Sci 2003; 100:12944-9.
10. Bai, L and **Merchant JL.** Transcription factor ZBP-89 is required for STAT1 constitutive expression. Nucleic Acid Res. 2003; 31:7264-70.
11. Zavros Y, Kao JY, **Merchant JL**. Inflammation and Cancer; III. Somatostatin and the innate immune system. Am J Physiol. 2004; 286:G698-701.
12. Bai L, Yoon SO, King PD, **Merchant JL**. ZBP-89-induced apoptosis is p53-independent and requires JNK. Cell Death and Differ. 2004; 11:663-73.
13. Smith JL, Freebern WJ, Collins I, De Siervi A, Montano I, Haggerty CM, McNutt MC, Butscher WG, Dzekunova I, Petersen DW, Kawasaki E, **Merchant JL**, Gardner K. Kinetic profiles of p300 occupancy in vivo predict common features of promoter structure and coactivator recruitment. Proc Natl Acad Sci. 2004; 101(32):11554-9.
14. Shiotani A, Iishi H, Uedo N, Ishiguro S, Tatsuta M, Nakae, Kumamoto M, **Merchant JL**. Evidence that loss of Sonic hedgehog is an indicator of Helicobacter pylori-induced atrophic gastritis progressing to gastric cancer. Am J Gastroenterology, 2004; 100: 581-587.
15. Shiotani A, Iishi H, Uedo N, Ishiguro S, Tatsuta M, Nakae, Kumamoto M, **Merchant JL**. Epithelial cell turnover in relation to ongoing damage of the gastric mucosa of patients with early gastric cancer: Increase of cell proliferation in paramalignant lesions. J Gastroenterology., 2005; 40: 337-344.
16. Zavros Y, Eaton K, Kang W, Rathinavelu S, Katakuri V, Kao JY, Samuelson LC, **Merchant JL**. Chronic Gastritis in the hypochlorhydric gastrin-deficient mouse progresses to adenocarcinoma. Oncogene, 2005; 24: 2354-2366.
17. Rieder G, Tessier A, Qiao XT, Madison B, Gumucio DL, **Merchant JL**. Intestinal Metaplasia in the Stomach from *Helicobacter pylori* Correlates with Elk-1 and Serum Response Factor Induction of Villin. J Biol. Chem. 2005; 280: 4906-4912.
18. Kang W, Rathinavelu S., Samuelson LC, **Merchant JL**. Expansion of the gastric mucous neck cell compartment correlates with elevated levels of interferon gamma and MUC6. Lab Invest. , 2005; 85: 702-715.
19. Rieder G, **Merchant JL**, Haas R., Helicobacter pylori cag-Type IV secretion system facilitates corpus colonization to induce precancerous conditions in Mongolian Gerbils. Gastroenterology, 2005; 128: 1229-1242.

20. **Merchant, JL.** Inflammation, atrophy, gastric cancer: Connecting the molecular dots. Gastroenterology. 2005; 129:1079-1082.
21. Kao JY, Pierzchala A, Rathinavelu S, Zavros Y, Tessier A, **Merchant JL**. Somatostatin inhibits dendritic cell responsiveness to *Helicobacter pylori*. *Regulatory Pepti\des*, 2005; 134:23-29.
22. Kao JY, Rathinavelu S, Eaton KA, Bai L, Zavros Y, Takami M, Pierzchala A, **Merchant JL**. *Helicobacter pylori*-secreted factors inhibit dendritic cell IL-12 secretion: a mechanism of ineffective host defense. *Am J Physiology Gastrointest Liver Physiol* 2006; 291:G73-G81.
23. Okada M, Tessier A, Bai L, **Merchant JL**. p53 Mutants Suppress ZBP-89 Function. *Anticancer Research 26:2023-2028, 2006.*
24. Law DJ, Labut EM, Adams RD, **Merchant JL**. A ZBP-89 isoform predisposes the colon to colitis. *Nuc Acids Res*, 34: 1342-1350, 2006.
25. Lopez-Diaz L, Hinkle KL, Jain RN, Zavros Y, Brunkan CS, Keeley T, Eaton KA, **Merchant JL**, Chew CS, Samuelson LC. Parietal Cell Hyperstimulation and Autoimmune Gastritis in Cholera Toxin Transgenic Mice. Amer. J. Physiol.- Gastrointesl Liver Physiology. 2006; 290:G970-G979.
26. Bai L, Kao JY, Law DJ and **Merchant JL**. Recruitment of Ataxia Telangiectasia-Mutated to the $p21^{waf1}$ promoter by ZBP-89 plays a role in mucosal protection. *Gastroenterology,* 131(3):841-52, 2006.
27. Law DJ, Labut EM, **Merchant JL.** Intestinal overexpression of ZNF148 suppresses ApcMin/+ neoplasia. *Mamm Genome.* 2006 Oct; 17(10):999-1004.
28. Shiotani A, Iishi H, Uedo N, Ishihara R, Ishiguro S, Tatsuta M, Nakae Y, Kumamoto M, Hinoi T, **Merchan**t **JL**. Helicobacter pylori-induced atrophic gastritis progressing to gastric cancer exhibits sonic hedgehog loss and aberrant CDX2 expression. *Aliment Pharmacol Ther*. 2006 Dec;24 Suppl 4:71-80.
29. Rieder G, Karnholz A, Stoeckelhuber M, **Merchant JL**, Haas R. *H pylori* infection causes chronic pancreatitis in Mongolian gerbils*. World J Gastroenterol*. 2007 Aug 7;13(29):3939-47.
30. Shiotani A, Uedo N, Iishi H, Tatsuta M, Ishiguro S, Nakae Y, Kamada T, Haruma K, **Merchant JL**. Re-expression of sonic hedgehog and reduction of CDX2 after Helicobacter pylori eradication prior to incomplete intestinal metaplasia. *Int J Cancer.* 2007 Sep 15;121(6):1182-9.
31. Bai L, **Merchant JL**. ATM phosphorylates ZBP-89 at Ser202 to potentiate $p21^{waf1}$ induction by butyrate. *Biochem Biophys Res Comm*. 2007 359:817-821.
32. Zavros Y, Maghray M, Tessier A, Bai L, Todisco A, Gumucio DL, Samuelson LC, Dlugosz A, **Merchant JL.** Reduced pepsin A processing of Sonic Hedgehog in parietal cells precedes gastric atrophy and transformation. J Biol Chem. 2007, 282(46):33265-33274.
33. Chupreta S, Brevig H, Bai L, **Merchant JL**, Iñiguez-Lluhí JA. Sumoylation-dependent control of homotypic and heterotypic synergy by the Kruppel-type zinc finger protein ZBP-89. J Biol Chem. 2007 Dec 14;282(50):36155-66. Epub 2007 Oct 16.
34. Bai L, Merchant JL. A role for CITED2, a CBP/p300 interacting protein, in colon cancer cell invasion. FEBS Lett. 2007 Dec 22;581(30):5904-10. Epub 2007 Dec 3. **Merchant JL**. What lurks beneath: IL-11, via Stat3, promotes inflammation-associated gastric tumorigenesis. J Clin Invest. 2008 May;118(5):1628-31. PMCID: PMC2323194
35. Mensah-Osman E, Labut E, Zavros Y, El-Zaatari M, Law DJ, **Merchant JL**. Regulated expression of the human gastrin gene in mice. Regul Pept. 2008 Nov 29;151(1-3):115-22. Epub 2008 Mar 28. PMCID: PMC2617792
36. Mensah-Osman E, Zavros Y, **Merchant JL**. Somatostatin stimulates menin gene expression by inhibiting protein kinase A. Am J Physiol Gastrointest Liver Physiol. 2008 Oct;295(4):G843-54. Epub 2008 Aug 28. PMCID: PMC2575917
37. Kang W, Saqui-Salces M, Zavros Y, **Merchant JL**. Induction of follistatin precedes gastric transformation in gastrin deficient mice. Biochem Biophys Res Commun. 2008 Nov 21;376(3):573-7. Epub 2008 Sep 17. PMCID: PMC2577233
38. El-Zaatari M, Saqui-Salces M, Waghray M, Todisco A, **Merchant JL**. Sonic hedgehog in gastric physiology and neoplastic transformation: friend or foe? Curr Opin Endocrinol Diabetes Obes. 2009 Feb;16(1):60-5. PMCID: PMC-In Process.

C. Research Support

ACTIVE

MERIT Award R37 DK045729-16, Merchant (PI) 09/30/2007 – 08/31/2012
NIH/NIDDK
Transcriptional Control of Gastrin
The overall goal of this proposal is to understand how menin regulates gastrin gene expression through its interaction with JunD.

R01 DK055732-10, Merchant (PI) 03/01/2005 – 02/28/2010
NIH/NIDDK
Mechanisms of Gastrointestinal Growth and Transformation
The overall goal of this proposal is to identify and characterize novel paradigms of gastrointestinal transformation. The specific aims of this proposal are to examine how ZBP-89 regulates cell growth through its ability to partner with tumor suppressors ATM and p53. In addition, how ZBP-89 mediates butyrate regulation of transcription by recruiting p300 subsequently inducing histone acetylation will also be examined.

P01 DK062041-07, Merchant (PI) 08/01/2008 – 07/31/2013
NIH/NIDDK
Cellular Decisions of Differentiation in the GI Tract
Overall, this Program Project Grant will further our understanding of how cells make decisions of identity and differentiation in the stomach and intestine. The specific subproject supported examines how the parietal cell identity becomes altered in pathological conditions, e.g., chronic inflammation.

P30 DK 34933 Owyang (PI) 12/01/2005 – 11/30/2010

NIH/NIDDK
Michigan Gut Peptide Research Center
The University of Michigan's Digestive Disease Center is focused in the area of peptide biology and its role in GI function and pathology.
Role: Center, Associate Director
Director, Molecular Biology Core

RECENTLY COMPLETED

R01 DK061410-05, Merchant (PI) 02/01/2003 – 07/31/2008
NIH/NIDDK
Altering Gastric Epithelial Cell Differentiation
The overall goal is to understand how parietal cell atrophy resulting in the loss of specific epithelial-mesenchymal cross talk contributes to the increase in mucous cell proliferation and subsequently transformation in the gastric antrum.