

Zhongbin Deng Ph.D.

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EDUCATION

07/2003	Ph.D., Immunology School of Medicine, Soochow University, Suzhou, P. R. China
07/1997	M.S. Veterinary Medicine, College of Animal Science and Veterinary Medicine Yangzhou University, Yangzhou, P. R. China
07/1994	Bachelor's degree in Veterinary Medicine, College of Animal Science and Veterinary Medicine, Yangzhou University, Yangzhou, P. R. China

ACADEMIC APPOINTMENTS

Year	Rank/Title	Institution
11/2019-	Assistant Professor (Tenure Track)	Department of Surgery, Brown Cancer Center University of Louisville
01/2013-11/2019	Assistant Professor (Reserch)	Department of Medicine, Brown Cancer Center University of Louisville
01/2010-01/2013	Instructor	Department of Medicine, Brown Cancer Center University of Louisville
2007-2009	Postdoctoral Fellow	Division of Clinical Immunology and Rheumatology University of Alabama at Birmingham
2004-2006	Postdoctoral Fellow	Center for Biotechnology and Genomic Medicine Medical College of Georgia
2000-2004	Lecturer	Department of Biotechnology School of Life Science, Soochow University, China

1997-2000 Teaching Assistant Suzhou Medical College, Soochow University, China

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

2009- American Association of Immunologists
2001- Member of Chinese Association of Immunologists
2021- Member of the American Association for the Study of Liver disease

HONORS AND AWARDS

2019 AAI Early Career Faculty Travel Grant, San Diego, CA
2018 AAI Early Career Faculty Travel Grant, Austin, TX
2017 AAI Early Career Faculty Travel Grant, DC
2016 AAI Early Career Faculty Travel Grant, Settle, WA
2015 AAI Early Career Faculty Travel Grant, New Orleans
2013 AAI Early Career Faculty Travel Grant, HI
2012 AAI Early Career Faculty Travel Grant, Boston
2009 Travel Award of Molecular Targets for Cancer Therapy, FL
2003 Fellowship of Chen Jin-Rong Research, Soochow University

PROFESSIONAL ACTIVITIES

A: Teaching Resarch activities/Trainees

1997 – 2004: Course teaching: Basic Immunology; Molecular and Cellular Biology; Animal Science medical school students, SuZhou University School of Medicine

Role: Lecturer.

Student:

2007-2009 Shah, Spandan (research supervisor), Graduate Student, Immunology, UAB
2014: Christopher L Harding (research supervisor)
2017-2019: Hui Xu (research supervisor)
2020: Fengyuan Li; 2021: Mengwei Jiang (served as a member of Ph.D. thesis committee)
2022: Rachel Hicks.

Postdoctoral Research Fellow:

Mentored in Huang-ge Zhang's lab as Research Assistant Professor
Mukesh K Sriwastva; Anil Kumar; Chao Luo; Kumaran Sundaram; Abhilash Samykutty; Yuan Rong; Qilong Wang; Jiang Hong; Songwen Ju; Xiaoying Zhuang.

Mentored in Deng's Lab

2018-2019 Xuemei Gu (mentor), post-doctoral research associate
2018-2019 Shenghui Chu (mentor), Visiting Scholar
2019-2020 Guangzhong Xu (mentor), Visiting Scholar
2019-2020 Liang Chen (mentor), Visiting Scholar
2019-present Rui Sun (mentor), post-doctoral research associate
2020-present Chao Lei (mentor), post-doctoral research associate
2021- present Liang Chen (mentor), Visiting Scholar

B: Academic Activity

Peer Reviewer for Manuscripts:

Molecular therapy; Redox Biology; Acta Pharmaceutica Sinica B Cancer letter; Journal of Hematology & Oncology; Translational Oncology; The Journal of Nutritional Biochemistry; Molecular and Cellular Biochemistry; BioMed Research International Journal; Molecular Metabolism; Journal of Biomedical Nanotechnology; (Highlighted from 2019-current). International Journal of Immunopathology and Pharmacology; Plos One; Immunology and Immunogenetics Insights; Inflammation; Oncolytic Virotherapy; Drug Design, Development and Therapy; OncoTargets and Therapy; European Journal of Inflammation; African Journal of Microbiology Research; The International Journal of Biochemistry & Cell Biology.

EDITORIAL SERVICES: International Advisory Review Board (Translational Oncology)

Guest Associate Editor (Inflammatory Bowel Diseases)

Reviewer for Grants: Shota Rustaveli National Science Foundation-- Tbilisi, Georgia
French National Research Agency (ANR)_2022

GRANTS AND CONTRACTS (Number each grant)

Current Research Support

1. **NIH/NIDDK R01 DK115406** "CSN8 regulation of S1P-enriched extracellular vesicles to modulate NAFLD by gut-liver axis" 07/20/2018-4/30/2023
Role: PI (20% efforts)

The major goals of this application are to investigate how gut microbiota regulate sphingolipid metabolites-rich exosomes biogenesis, and how gut exosomes translocate to liver and promote liver injury in obesity.

2. **NIH/NIDDK R01DK131442**

The role of neutral ceramidase in intestinal fucosylation and liver steatosis and inflammation
06/01/2022– 03/31/2027

Major Goals: Determine if IECs NcDase regulates the intestinal fucosylation and subsequent barrier function via AhR/IL-22 signaling; and that NcDase-derived fucosylated glycosphingolipids induce hepatic tolerogenic macrophages via fucosyl-GM1/DC-SIGN pathway and prevent the development of NAFLD.

Role: PI (15% efforts).

3. **NIH/NIAID R21AI159194** Defining the role of S1p and myeloid cells during enterotoxigenic B. fragilis infection. 09/22/2021 – 08/31/2023

Role: PI (10% efforts).

Major Goals: Determine if ETBF infection disrupts sphingolipid metabolism and results in the accumulation of proinflammatory myeloid cells (iMCs) in the gut. This award is investigating the S1p-specific gene sets in iMCs associated with potent pro-inflammatory responses.

4. **NIH/NIAAA R21 AA025724** Gut extracellular vesicles promote alcohol-induced liver injury via TLR4-regulated miRNAs, 08/01/2018-7/31/2022 **No cost extension**
Role: PI

5. **Supplement award for NIH/NIAAA R21 AA025724: \$154,000**
08/25/2019-7/31/2022
Role: PI (10% efforts)

6. **NIH/ NHLBI R01HL160927** Fibroblast growth factor 1 prevents hyperlipidemia and atherosclerosis
12/01/2021 – 11/31/2026
Role: Co-I. (PI: Yi Tan) (5% efforts).

7. **Veterans Affairs I01BX003274** The Vagus Nerve in Lung Disease 04/01/2018 – 03/31/2024
Role: Collaborator (20% efforts). (PI: Jerry Yu)

8. **NIH/NIGMS 1P20GM113226-06 (Parent PI: Craig McClain)**
HEPATOBIOLGY AND TOXICOLOGY COBRE 04/01/2021– 03/31/2026

Biorepository and Animal Core (**Role: Co-I**) (3% efforts).

Completed Research Support

1. **NIH/NIAID 1R21 AI128206** “Intestinal epithelial cells-derived exosomal miRNAs regulate liver inflammation in obesity”. 07/14/17-6/30/19 **Role: PI**

2. **NIH/NIGMS 1P20GM113226-01 Sub: 6174 (Role: ----PI) (Parent PI: Craig McClain)**

HEPATOBIOLGY AND TOXICOLOGY COBRE 06/10/2016-- 03/31/2021
Sub-Project ID: 6174: “HIGH FAT DIET INDUCED HEPATOCYTE EXOSOMES-PROMOTED HEPATIC INFLAMMATION AND TUMORIGENESIS”

Role: PI

3. **NIH/NCI 1UH2TR000875** “Fruit exosome-like particles for therapeutic delivery of extracellular miRNAs”.
08/01/13-7/31/18
Role: Co-Investigator (PI: Huang-ge Zhang) **50% effort**

4. **NIH/NCCIH R01AT008617** “Plant exosomes non-coding RNA-mediated anti-inflammatory mechanisms”.
12/01/15-11/30/20
Role: Co-Investigator (PI: Huang-ge Zhang)

5. **National Natural Science Foundation of China** (No. 30471609), 2005-2008.
Studies on ICOS/GL50 signal in the immune pathological response and its mechanism in Graves.
Role: Principal Investigator.

6. **Natural Science Foundation of JiangSu, China** (No. 04KJB310124). 2005-2007.
The role of ICOS/GL50 signal in the immune pathological response in Graves.

Role: **Principal Investigator.**

7. Junior Faculty Medicine Research Award of Soochow University 2003 -2004.

Studies on ICOS/GL50 signal in the specific immune tolerance and its mechanism.

Role: **Principal Investigator.**

Research Description:

My research interest is in understanding the regulation of **Gut exosomes, Inflammation, and Gut microbiota** in colitis and its related cancer development, especially colon cancer. IBD is strongly associated with inflammation accompanied by increased infiltration of leukocytes. Inflammation is a resultant of host immune response to an injury, infections or illness and considered as double-edged sword. The major problem arises when the inflammation persists (chronic inflammation) and promotes disease conditions. We are investigating the mechanisms involved in maintaining balance between the good vs bad inflammatory conditions in gut. The complex nature of the human gut microbiota and its relevance to human health and disease is at a very early stage of investigation. It is becoming very clear that changes in the environment, diet and genetic factors greatly influence human microbiota contributing to the modulation of disease progression. My laboratory focuses on determining the role of **gut exosomes, gut microbiota and interaction of microbial metabolites** in IBD and colon cancer. We utilize several genetically altered transgenic/compound (knockout/conditional expression of interested genes) pre-clinical mouse models, cellular and molecular models and next generation sequencing methods to understand the IBD and colon cancer progression.

Our research also focuses on the role that diet and nutrition plays in the prevention and treatment of various cancers such as liver cancer and colon cancer. We put an emphasis on investigating the mechanisms of action of active dietary and nutritional nanoparticles. Our lab uses clinically relevant animal models and an integrated research system to identify effective dietary and nutritional nanoparticles for cancer prevention in vitro and in vivo, evaluate the efficacies of dietary and nutritional regimens, elucidate underlying cellular, molecular, and epigenetic mechanisms of action, identify novel anti-cancer components, and define risk factors of cancer development.

<http://louisville.edu/medicine/research/cancer/z0deng01>

ABSTRACTS AND PRESENTATIONS

Oral/Invited Presentations: National/International Meetings

1. Rui Sun, Chao Lei, Liang Chen, Liqing He, Haixun Guo, Xiang Zhang, Wenke Feng, Jun Yan, Craig J. McClain, and **Zhongbin Deng**. Alcohol consumption promotes the thymic lymphomagenesis via metabolic reprogramming. GRC. April, 2022
2. Rui Sun, Chao Lei, **Zhongbin Deng**. Neutral ceramidase-dependent signaling balances the accumulation and function of Th17 cells in alcohol-associated liver disease. AASLD, NOV, 2021.
3. Warner, J.B., Larsen, I.S., Warner, D.R., Hardesty, J.E., Song, Y.L., Sun, R., **Deng, Z.**, Nordkild, P., McClain, C.J., Jensen, B.A.H., Kirpich, I.A. Human beta defensin 2 as a potential beneficial agent to mitigate alcohol-induced alterations in the intestine and liver: multiple underlying mechanisms. Digestive Disease Week Meeting. May 2-5, 2020.
4. **Deng Z**, Chu S, Sun R, Gu X, Chen L. Targeting Sphingolipids inhibits alcohol-induced liver disease. AAI meeting 2020, HI. (Poster presentation).
5. Kai Wang, Xiaozhen Dai, Junhong He, Chengkui Yang, Jing Chen, Jianxiang Xu, **Zhongbin Deng**,

- Edward C. Carlson, Kupper A. Wintergerst, Paul N. Epstein, Lu Cai, Yan Qian, **Yi Tan**. Metallothionein Improves Angiogenic Function of Endothelial Progenitor Cells Via Hif-1 α /sdf-1/Akt Pathway in Diabetic Limb Ischemia. The SOT 58th Annual Meeting and ToxExpo, March 10–14, 2019, Baltimore, Maryland.
6. **Deng Z**, Chu S, Gu X, Liu M, Feng W. Targeting gut inflammation inhibits alcohol-induced liver disease. AAI meeting 2019, San Diego. (Poster presentation).
 7. **Deng Z**, Rong Y, Mu J, Jala VR, Tseng M, Teng Y, Kumar A, Zhang HG. CSN8 Promotes Intestinal Tumorigenesis. AAI meeting 2018, Austin, TX. (Poster presentation).
 8. **Deng Z**. COP9 signalosome, Colitis and Colon cancer. Annual Meeting--Chinese Association of young Immunologists, Suzhou, China. 2017. (Oral presentation).
 9. **Deng Z**, Rong Y, Teng Y, Mu J, Miller D, Suttles J, and Zhang HG. Broccoli-derived nanoparticle inhibits mouse colitis by activating dendritic cell AMP-activated protein kinase. *J Immunol* 2017: (1 Supplement). AAI meeting 2017, DC. (Poster presentation).
 10. Teng Y, Ren Y, Hu X, Mu J, Samykutty A, Zhuang X, **Deng Z**, Zhang L, Merchant M, Yan J, Miller DM and Zhang HG. Major vault protein (MVP) dependent sorting tumor suppressor miR-193a into tumor exosomes promotes colon cancer progression. NIH UH3 annual meeting, 4/1/2017. (Oral presentation).
 11. **Deng Z**, Mu J, Zhuang X, Zhang L, Haribabu B, Miller D and Zhang HG. Enterobacteria-mediated the overproduction of intestinal exosomes S1P to drive Th17-mediated colon tumor growth. *J Immunol* 2016 196: (1 Supplement) 73.20. AAI meeting 2016, Seattle. (Poster presentation).
 12. **Deng Z-B** and Zhang H-G. Overproduction of intestinal mucus exosomal S1P drives Th17-mediated colon tumor growth. Annual Meeting--Chinese Association of Immunologists, Suzhou, China. 2014. (Oral presentation).
 13. **Deng Z**, Teng Y, Rong Y, Zhuang X, Mu J, Zhang L, Samykutty A, and Zhang HG Exosomes released from Doxorubicin-treated breast tumor promote lung metastasis through miR126 mediated induction of MDSCs. *J Immunol* 2015 194:211.41. AAI meeting 2015, New Orleans. (Poster presentation).
 14. **Deng ZB**, Wang B, Zhuang X, Jiang H, Wang Q, Zhang L and Huang-Ge Zhang HG. The role of intestinal epithelial exosomes in the progression of colon cancer. *J Immunol* 2014 192:203.34. AAI meeting 2014, Pittsburgh. (Poster presentation).
 15. **Deng ZB**, Zhuang X, Xiang X, Jiang H, Wang Q, Miller D and Huang-Ge Zhang HG. Intestinal mucus-derived nanoparticles carry prostaglandin E2 and suppress liver inflammation through Wnt/ β -catenin signaling. *J Immunol* 2013 190:136.29. AAI meeting 2013, HI. (Poster presentation).
 16. **Deng Z**, Ju S, Zhuang X, Xiang X, Miller D and Huang-ge Zhang. Intestinal epithelial cells-derived exosomes provide a bridge between the gut and the liver that prevents liver inflammation through prostaglandin E2 induction of NK T cell anergy. *The Journal of Immunology*, 2012, 188, 49.11. AAI meeting 2012. Boston. (Poster presentation).
 17. Huang-ge Zhang, **Zhongbin Deng**. Cell cross-talk with tumor-associated leukocytes leads to induction of tumor exosomal fibronectin and promotes tumor progression. AACR 103rd Annual Meeting 2012-- Mar 31-Apr 4, 2012; Chicago, IL
 18. **Deng ZB**, Xiang X, Liu C, Liu Y, Wang J, Cheng Z, Shah SV, Zhang L, Michalek S, Grizzle WE, and Zhang HG. Induction of inflammatory immature myeloid cells contributes to liver damage in obese mouse model. Temple, FL 2009 (Poster presentation).
 19. Liping Song, Tasnim Ara, Jill Salo, **Zhong-bin Deng**, Shahab Asgharzadeh, Lingyun Ji, Richard Sposto, Yves A DeClerck, Robert C Seeger and Leonid S Metelitsa. The role of paracrine IL-6 and IL-10 in neuroblastoma progression. *The Journal of Immunology*, 2007, 178, 49

PUBLICATIONS:

Complete List of Published Work in My Bibliography:

[http://www.ncbi.nlm.nih.gov/pubmed?term=\(zhongbin%20deng%5BAuthor%5D\)%20OR%20zhongbin%20deng%5BAuthor%5D](http://www.ncbi.nlm.nih.gov/pubmed?term=(zhongbin%20deng%5BAuthor%5D)%20OR%20zhongbin%20deng%5BAuthor%5D)

1. Lei C, Sun R, Xu G, Yi Tan, Feng W, McClain CJ, **Deng Z**. Enteric VIP neuron maintains gut microbiota homeostasis through regulating epithelium fucosylation. **Cell Host & Microbe**. 2022 Sep 13; S1931-3128(22)
2. Sun R, Gu X, Chen L, Lei C, Chu S, Xu G, Doll M, Feng W, Siskind L, McClain CJ, **Deng Z**. Neutral ceramidase-dependent regulation of macrophage metabolism directs intestinal immune homeostasis and controls enteric infection. **Cell Reports**. 2022. Mar 29. PMID: PMC9007044
3. Sun R, Lei C, Chen L, He L, Guo H, Zhang X, Feng W, Yan J, McClain CJ, **Deng Z**. Alcohol-driven metabolic reprogramming promotes development of ROR γ t-deficient thymic lymphoma. **Oncogene**. **Oncogene**. 2022 Mar 4. PMID: PMC9018612
4. Sriwastva M[#], **Deng Z**[#], Wang B, Teng Y, Kumar A, Sundaram K, Mu J, Lei C, Dryden GW, Xu F, Zhang L, Yan J, Zhang X, Park JW, Merchant M, Egilmez NK, Zhang HG. Mulberry exosomes-like nanoparticles prevent DSS-induced colitis via AhR/COPS8 signalling pathway. **EMBO Reports**. 2022 Jan 7: e53365. Online ahead of print. PMID: 34994476. #: **Co-First Author**.
5. Gu X, Sun R, Chen L, Chu S, Liu M, Doll M, Li X, Feng W, Siskind L, McClain CJ, **Deng Z**. Neutral ceramidase mediates nonalcoholic steatohepatitis by regulating monounsaturated fatty acids and gut IgA⁺ B cells. **Hepatology**. 2021 Mar;73(3):901-919. PMID: PMC8943690
6. Chu S, Sun R, Gu X, Chen L, Liu M, Guo H, Ju S, Vatsalya V, Feng W, McClain CJ, **Deng Z**. Inhibition of sphingosine-1-phosphate-induced Th17 cells ameliorates alcoholic steatohepatitis in mice. **Hepatology**. 2021 Mar;73(3):952-967, PMID: PMC8009334.
7. Jiang M, Li F, Liu Y, Gu Z, Zhang L, Lee J, He L, Vatsalya V, Zhang HG, **Deng Z**, Zhang X, Chen SY, Guo GL, Barve S, McClain CJ, Feng W. Probiotic-derived nanoparticles inhibit ALD through intestinal miR194 suppression and subsequent FXR activation. **Hepatology**. 2022 Jun 11. Online ahead of print. PMID: 35689610
8. Warner J., Larsen I., Hardesty J., Song Y., Warner D., McClain C., Sun R., **Deng Z**, Jensen B., Kirpich I.* Human Beta Defensin 2 Ameliorated Experimental Alcohol-Associated Liver Disease in Mice. **Frontiers in Physiology**, 2022 Jan 27;12:812882. PMID: PMC88294
9. Li F, Chen J, Liu Y, Gu Z, Jiang M, Zhang L, Chen SY, **Deng Z**, McClain CJ, Feng W. Deficiency of Cathelicidin Attenuates High-Fat Diet Plus Alcohol-Induced Liver Injury through FGF21/Adiponectin Regulation. **Cells**. 2021 Nov 27;10(12):3333.
10. Warner J., Hardesty J., Song Y., Sun R., **Deng Z**, Xu R., Yin X., Zhang X., McClain C., Warner D., Kirpich I. Fat-1 transgenic mice with augmented n3-polyunsaturated fatty acids are protected from liver injury caused by acute-on-chronic ethanol administration. **Front. Pharmacol.**, 2021, 12:711590. PMID: 34531743, PMID: PMC8438569
11. Gu Z, Li F, Liu Y, Jiang M, Zhang L, He L, Wilkey DW, Merchant M, Zhang X, **Deng ZB**, Chen SY,

- Barve S, McClain CJ, **Feng W**. Exosome-Like Nanoparticles from *Lactobacillus rhamnosus* GG Protect Against Alcohol-Associated Liver Disease Through Intestinal Aryl Hydrocarbon Receptor in Mice. **Hepato Comm**. **2021** Feb 5;5(5):846-864. PMID: 34027273.
12. Song M, Yuan F, Li X, Ma X, Yin X, Rouchka EC, Zhang X, **Deng Z**, Prough RA, McClain CJ. Analysis of sex differences in dietary copper-fructose interaction-induced alterations of gut microbial activity in relation to hepatic steatosis. **Biol Sex Differ**. **2021** Jan 6;12(1):3.
 13. Li F, Zhao C, Shao T, Liu Y, Gu Z, Jiang M, Li H, Zhang L, Gillevet P, Puri P, **Deng Z**, Chen S, Barve S, Gobejishvili L, Vatsalya V, McClain CJ, Feng W. Cathelicidin - related antimicrobial peptide alleviates alcoholic liver disease through inhibiting inflammasome activation. **The Journal of Pathology**. 15 August **2020**. Dec;252(4):371-383.
 14. Wang K, Dai X, He J, Yan X, Yang C, Fan X, Sun S, Chen J, Xu J, **Deng Z**, Fan J, Yuan X, Liu H, Carlson EC, Shen F, Wintergerst KA, Conklin DJ, Epstein PN, Lu C, Tan Y. Endothelial Overexpression of Metallothionein Prevents Diabetes-Induced Impairment in Ischemia Angiogenesis Through Preservation of HIF-1 α /SDF-1/VEGF Signaling in Endothelial Progenitor Cells. **Diabetes**. 2020 Aug;69(8):1779-1792. doi: 10.2337/db19-0829. Epub **2020** May 13. PMID: 32404351
 15. Ma Y, Wang R, Lu H, Li X, Zhang G, Fu F, Cao L, Zhan S, Wang Z, **Deng Z**, Shi T, Zhang X, Chen W. B7-H3 promotes the cell cycle-mediated chemoresistance of colorectal cancer cells by regulating CDC25A. **J Cancer**. **2020** Feb 3;11(8):2158-2170.
 16. Liu X, Zhang H, Cheng R, Gu Y, Yin Y, Sun Z, Pan G, **Deng Z**, Yang H, Deng L, Cui W, Santos HA, Shi Q. An immunological electrospun scaffold for tumor cell killing and healthy tissue regeneration. **Materials Horizons**. **2018** Nov 1;5(6):1082-1091.
 17. Teng Y, Ren Y, Sayed M, Hu X, Lei C, Kumar A, Hutchins E, Mu J, **Deng Z**, Luo C, Sundaram K, Sriwastva MK, Zhang L, Hsieh M, Reiman R, Haribabu B, Yan J, Jala VR, Miller DM, Van Keuren-Jensen K, Merchant ML, McClain CJ, Park JW, Egilmez NK, Zhang HG. (2018) Plant-Derived Exosomal MicroRNAs Shape the Gut Microbiota. **Cell Host & Microbe**, 24(5):637-652. PMID: 30449315. PMCID: N/A.
 18. Wang QL, Zhuang X, Sriwastva MK, Mu J, Teng Y, **Deng Z**, Zhang L, Sundaram K, Kumar A, Miller D, Yan J, Zhang HG. Blood exosomes regulate the tissue distribution of grapefruit-derived nanovector via CD36 and IGFR1 pathways. **Theranostics**. 2018 Sep 9;8(18):4912-4924.
 19. **Deng Z**[#], Rong Y[#], Teng Y, Mu J, Zhuang X, Tseng M, Samykutty A, Zhang L, Yan J, Miller D, Suttles J, Zhang HG*. Broccoli-derived nanoparticle inhibits mouse colitis by activating dendritic cell AMP-activated protein kinase. **Molecular Therapy**. **2017**, Jul 5;25(7):1641-1654. PMID:28274798.
 20. Teng Y, Ren Y, Xu X, Mu J, Samykutty A, Zhuang X, **Deng Z**, Zhang L, Merchant M, Yan J, Miller D, Kumar A, Zhang HG. Major vault protein (MVP) dependent sorting tumor suppressor miR-193a into tumor exosomes promotes colon cancer progression. **Nature communications**. 2017 Feb 17;8:14448. PMID:28211508.
 21. **Deng Z**^{*}, Rong Y, Teng Y, Zhuang X, Samykutty A, Mu J, Zhang L, Cao P, Yan J, Miller D, Zhang

- HG*. Exosomes miR-126a released from MDSC induced by DOX treatment promotes lung metastasis. **Oncogene**. 2017 Feb 2;36(5):639-651. PMID: 27345402; PMCID: PMC5419051. (*: Corresponding author)
22. Teng Y, Mu J, Hu X, Samykutty A, Zhuang X, **Deng Z**, Zhang L, Cao P, Yan J, Miller D, Zhang HG. Grapefruit-derived nanovectors deliver miR-18a for treatment of liver metastasis of colon cancer by induction of M1 macrophages. **Oncotarget**. 2016 Mar 25. doi: 10.18632/oncotarget.8361. [Epub ahead of print]. PMID: 27028860
23. Zhang HG, Cao P, Teng Y, Hu X, Wang Q, Yeri AS, Zhuang X, Samykutty A, Mu J, **Deng ZB**, Zhang L, Mobley JA, Yan J, Van Keuren-Jensen K, Miller D. Isolation, identification, and characterization of novel nanovesicles. **Oncotarget**. 2016 May 12. doi: 10.18632/oncotarget.9325. [Epub ahead of print]. PMID: 27191656
24. **Deng Z***, Mu J, Tseng M, Wattenberg B, Zhuang X, Egilmez NK, Wang Q, Zhang L, Norris J, Guo H, Yan J, Bodduluri H, Miller D, Zhang HG*. Enterobacteria-secreted particles induce production of exosome-like S1P-containing particles by intestinal epithelium to drive Th17-mediated tumorigenesis. **Nature communications**. 2015 Apr 24; PMID: 25907800. PMCID: PMC4410277. (*: Corresponding author)
25. Zhuang X, Teng Y, Samykutty A, Mu J, **Deng Z**, Zhang L, Cao P, Rong Y, Yan J, Miller D, Zhang HG. Grapefruit-derived Nanovectors Delivering Therapeutic miR17 Through an Intranasal Route Inhibit Brain Tumor Progression. **Mol Ther**. 2015 Oct 7. doi: 10.1038/mt.2015.188. [Epub ahead of print] PMID: 26444082.
26. Zhuang X, **Deng ZB**, Mu J, Zhang L, Yan J, Miller D, Feng W, McClain CJ, Zhang HG. Ginger-derived nanoparticles protect against alcohol-induced liver damage. **J Extracell Vesicles**. 2015 Nov 25;4:28713. doi: 10.3402/jev.v4.28713. eCollection 2015. PMID: 26610593
27. Wang Q, Ren Y, Mu J, Egilmez NK, Zhuang X, **Deng Z**, Zhang L, Yan J, Miller D, Zhang HG. Grapefruit-derived nanovectors use an activated leukocyte trafficking pathway to deliver therapeutic agents to inflammatory tumor sites. **Cancer Research**. 2015 Jun 15;75(12):2520-9.
28. Zhuang X, Teng Y, Samykutty A, Mu J, **Deng Z**, Zhang L, Cao P, Rong Y, Yan J, Miller D, Zhang HG. Grapefruit-derived Nanovectors Delivering Therapeutic miR17 Through an Intranasal Route Inhibit Brain Tumor Progression. **Mol Ther**. 2015 Oct 7. doi: 10.1038/mt.2015.188. [Epub ahead of print]
29. **Deng ZB***, Zhuang X, Ju S, Xiang X, Mu J, Wang Q, Hong J, Zhang L, Kronenberg M, Yan J, Miller D, Zhang HG*. Intestinal mucus-derived nanoparticles mediate activation of Wnt/ β -catenin signaling plays a role in induction of liver NKT cell anergy. **Hepatology**, 2013 Mar;57(3):1250-61. (*: Corresponding author)
30. **Deng ZB***, Zhuang X, Ju S, Xiang X, Mu J, Hong J, Zhang L, Mobley J, McClain C, Grizzle W, Yan J, Miller DM, Kronenberg M, Zhang HG*. Intestinal Mucus Exosome-like Nanoparticles Carry Prostaglandin E2 and Suppress Activation of Liver Natural Killer T Cells. **J Immunol**. 2013 Apr 1;190(7):3579-89. (*: Corresponding author)

31. Wang Q, Zhuang X, Mu J, **Deng ZB**, Jiang H, Xiang X, Wang B, Yan J, Miller D, Zhang HG. Delivery of therapeutic agents by nanoparticles made of grapefruit-derived lipids. **Nature Communications**. 2013;4:1867.
32. Tseng MT, Fu Q, Lor K, Fernandez-Botran GR, Deng ZB, Graham U, Butterfield DA, Grulke EA, Yokel RA. Persistent hepatic structural alterations following nanoceria vascular infusion in the rat. **Toxicol Pathol**. 2014 Aug;42(6):984-96. PMID: 24178579
33. Jiang H, Wang P, Li X, Wang Q, **Deng ZB**, Zhuang X, Mu J, Zhang L, Wang B, Yan J, Miller D, Zhang HG. Restoration of miR17/20a in solid tumor cells enhances the natural killer cell antitumor activity by targeting Mekk2. **Cancer Immunol Res**. 2014 Aug; 2(8):789-99.
34. Wang B, Zhuang X, **Deng ZB**, Jiang H, Mu J, Wang Q, Xiang X, Guo H, Zhang L, Dryden G, Yan J, Miller D, Zhang HG. Targeted drug delivery to intestinal macrophages by bioactive nanovesicles released from grapefruit. **Mol Ther**. 2013 Aug 13. doi: 10.1038/mt.2013.190. [Epub ahead of print]
35. Mu J, Zhuang X, Wang Q, Jiang H, **Deng ZB**, Wang B, Zhang L, Kakar S, Jun Y, Miller D, Zhang HG. Interspecies communication between plant and mouse gut host cells through edible plant derived exosome-like nanoparticles. **Mol Nutr Food Res**. 2014 Jul;58(7):1561-73. doi: 10.1002/mnfr.201300729. Epub 2014 May 19. PMID: 24842810
36. Tseng MT, Fu Q, Lor K, Fernandez-Botran GR, **Deng ZB**, Graham U, Butterfield DA, Grulke EA, Yokel RA. Persistent Hepatic Structural Alterations Following Nanoceria Vascular Infusion in the Rat. **Toxicol Pathol**. 2013 Oct 31. [Epub ahead of print]
37. Ju S, Mu J, Dokland T, Zhuang X, Wang Q, Jiang H, Xiang X, **Deng ZB**, Wang B, Zhang L, Roth M, Welti R, Mobley J, Jun Y, Miller D, Zhang HG. Grape Exosome-like Nanoparticles Induce Intestinal Stem Cells and Protect Mice From DSS-Induced Colitis. **Mol Ther**. 2013 Jul;21(7):1345-57.
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