

Biosketch



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He is also the Director of Sino-German "International Joint Laboratory of Viral Infection and Immunity", the Director of International Cooperative Base for Infection and Immunity of Hubei Province, China. Meanwhile, he serves as the Vice Chairman of Infectious Disease Society of China Research Hospital Association, Standing Committee of Liver Disease Society of Chinese Medical Association, Standing Committee of Infection and Immunology Branch of Chinese Society of Immunology.

His main research interests include (1) the immunobiology and pathogenesis of virus infection; (2) new therapeutic strategy for chronic virus infection; (3) animal model for HBV infection. His recent research focuses on the intrahepatic immune response and its regulation to hepatitis virus infection using multidisciplinary approaches that include research with infected patients, transgenic mice, and infectious animal models. In the past 30 years, more than 30 research grants from NSFC, MOH and MOST of China and DFG of Germany were awarded and more than 300 research papers were published in Chinese and English. He is also the Editor-in-chief of "Infectious Diseases", a national official textbook for medical student.

Selected Research Grants:

1. Chinese Mamota: an animal model for hepatitis virus infection, NSFC (30271170), 2003-2005, (Principal Investigator)
2. pRNA as an escort for targeting therapy of HBV infection, NSFC (30571646), 2006-2008, (Principal Investigator)
3. The interaction of intrahepatic innate immune response and HCV infection, the Major State Basic Research Development Program of China (973 Program) (2009CB522506), 2009-2013, (Major Investigator)
4. Screening for anti-HIV-1 bNAb (broadly neutralizing antibodies) in huCD4/CCR5 transgenic mice immunized with multivalent vaccine. NSFC and NIH, (81261120397), 2013-2014, (Principal Investigator)
5. In vitro and in vivo models of hepatitis B virus infection, the National Science and Technology Major Project for Infectious Disease, (2008ZX10002-011, 2012ZX10004503), 2008-2017, (Principal Investigator)

6. Mutual interaction of viruses with cells of the immune system: from fundamental research to immunotherapy and vaccination, The Ministry of Science and Technology of China (MOST) and DFG (2011DFA31030,TRR60), 2009-2013, NSFC and DFG, (81461130019, TRR60), 2014-2017, (Principal Investigator)
7. Functional and Mechanism study of TLR2 signaling pathway in LSEC and Kupffer cells regulating HBV specific T cell activation. NSFC, (91642118), 2017-2019, (Principal Investigator)
8. Multiple center clinical study for new therapeutic strategy for function cure of chronic hepatitis B by combination of immunomodulatory and antiviral regimens. the National Science and Technology Major Project for Infectious Disease, (2013ZX10002001,2017ZX10202201,2017ZX10202202,), 2011-2021, (Major Investigator)

Selected publications:

1. Wu J, Liang B, Fang Y, Wang H, Yang X, Shen S, Chen L, Li S, Lu S, Xiang T, Le-Trilling V, Lu M, Yang D, Deng F, Dittmer U, Trilling M, Zheng X. SARS-CoV-2 infection induces sustained humoral immune responses in convalescent patients following symptomatic COVID-19. *Nat Commun*, 2021, <https://doi.org/10.1038/s41467-021-22034-1>
2. Guo W, Zhou X, Li X, Zhu Q, Peng J, Zhu B, Zheng X, Lu Y, Yang D, Wang B, Wang J. Depletion of Gut Microbiota Impairs Gut Barrier Function and Antiviral Immune Defense in the Liver. *Front Immunol*, 2021, March, <https://doi.org/10.3389/fimmu.2021.636803>
3. Huang H, Rückborn M, Le-Trilling VTK, Zhu D, Yang S, Zhou W, Yang X, Feng X, Lu Y, Lu M, Dittmer U, Yang D, Trilling M, Liu J. Prophylactic and therapeutic HBV vaccination by an HBs-expressing cytomegalovirus vector lacking an interferon antagonist in mice. *Eur J Immunol*. 2021 Feb;51(2):393-407.
4. Westmeier J, Paniskaki K, Karaköse Z, Werner T, Sutter K, Dolff S, Overbeck M, Limmer A, Liu J, Zheng X, Brenner T, Berger MM, Witzke O, Trilling M, Lu M, Yang D, Babel N, Westhoff T, Dittmer U, Zelinskyy G. Impaired Cytotoxic CD8+ T Cell Response in Elderly COVID-19 Patients. *mBio*. 2020 Sep 18;11(5):e02243-20. Erratum. *mBio*. 2020 Nov 10;11(6):e02805-20
5. Xu L, Liu J, Lu M, Yang D, Zheng X. Liver injury during highly pathogenic human coronavirus infections. *Liver Int*. 2020 May;40(5):998-1004.
6. Liu J, Li S, Liu J, Liang B, Wang X, Wang H, Li W, Tong Q, Yi J, Zhao L, Xiong L, Guo C, Tian J, Luo J, Yao J, Pang R, Shen H, Peng C, Liu T, Zhang Q, Wu J, Xu L, Lu S, Wang B, Weng Z, Han C, Zhu H, Zhou R, Zhou H, Chen X, Ye P, Zhu B, Wang L, Zhou W, He S, He Y, Jie S, Wei P, Zhang J, Lu Y, Wang W, Zhang L, Li L, Zhou F, Wang J, Dittmer U, Lu M, Hu Y, Yang D, Zheng X. Longitudinal characteristics of lymphocyte responses and cytokine profiles in the peripheral blood of SARS-CoV-2 infected patients. *EBioMedicine*. 2020 May;55:102763.
7. Liu J, Zheng X, Tong Q, Li W, Wang B, Sutter K, Trilling M, Lu M, Dittmer U, Yang D. (2020), Overlapping and discrete aspects of the pathology and pathogenesis of the emerging human pathogenic coronaviruses SARS-CoV, MERS-CoV, and 2019-nCoV. *J Med Virol*. 2020 May;92(5):491-494.
8. Wu J, Han M, Li J, Yang X, Yang D. Immunopathogenesis of HBV Infection. *Adv Exp Med Biol*. 2020;1179:71-107.
9. Zhang E, Ma Z, Li Q, Yan H, Liu J, Wu W, Guo J, Zhang X, Kirschning CJ, Xu H, Lang PA, Yang D, Dittmer U, Yan H, Lu M. TLR2 Stimulation Increases Cellular Metabolism in CD8+ T Cells and Thereby Enhances CD8+ T Cell Activation, Function, and Antiviral Activity. *J Immunol*. 2019 Dec 1;203(11):2872-2886.

10. Zhu Q, Xia P, Zhou X, Li X, Guo W, Zhu B, Zheng X, Wang B, Yang D, Wang J. Hepatitis B Virus Infection Alters Gut Microbiota Composition in Mice. *Front Cell Infect Microbiol.* 2019 Nov 5;9:377.
11. Shen T, Liu Y, Shang J, Xie Q, Li J, Yan M, Xu J, Niu J, Liu J, Watkins PB, Aithal GP, Andrade RJ, Dou X, Yao L, Lv F, Wang Q, Li Y, Zhou X, Zhang Y, Zong P, Wan B, Zou Z, Yang D, Nie Y, Li D, Wang Y, Han X, Zhuang H, Mao Y, Chen C. Incidence and Etiology of Drug-Induced Liver Injury in Mainland China. *Gastroenterology.* 2019 Jun;156(8):2230-2241.
12. Sun J, Ding H, Chen G, Wang G, Wei L, Zhang J, Xie Q, Wan M, Tang H, Chen S, Gao Z, Wang Y, Zhang D, Huang W, Sheng J, Ning Q, Yang D, Lu J, Pan C, Yang Y, Wang J, Sun C, Wang Q, Hou J. Sustained serological and complete responses in HBeAg-positive patients treated with Peginterferon alfa-2b: a 6-year long-term follow-up of a multicenter, randomized, controlled trial in China. *BMC Gastroenterol.* 2019 May 2;19(1):65.
13. Wu J, Han M, Li J, Yang X, Zhen X, Schlaak JF, Yang D, Lu M. Pattern Recognition Receptors and Liver Failure. *Crit Rev Immunol.* 2019;39(4):289-311.
14. Yang S, Wang L, Pan W, Bayer W, Thoens C, Heim K, Dittmer U, Timm J, Wang Q, Yu Q, Luo J, Liu Y, Hofmann M, Thimme R, Zhang X, Chen H, Wang H, Feng X, Yang X, Lu Y, Lu M, Yang D, Liu J. MMP2/MMP9-mediated CD100 shedding is crucial for inducing intrahepatic anti-HBV CD8 T cell responses and HBV clearance. *J Hepatol.* 2019, 71(4):685-698.
15. Liu Y, Wu C, Chen R, Li X, Xu Z, Li Q, Li L, Wang FS, Yang D, Lu M, Xu D. Molecular cloning and phenotypic analysis of drug-resistance mutants with relevant S-region variants of HBV for a patient during 189-month anti-HBV treatment. *Antivir Ther.* 2019;24(4):237-246.
16. Xia Y, Pan W, Ke X, Skibbe K, Walker A, Hoffmann D, Lu Y, Yang X, Feng X, Tong Q, Timm J, Yang D. Differential escape of HCV from CD8+ T cell selection pressure between China and Germany depends on the presenting HLA class I molecule. 2019, *J Viral Hepat.* 26(1):73-82.
17. Qin Wang, Wen Pan, Yanan Liu, Jinzhuo Luo, Dan Zhu, Yinping Lu, Xuemei Feng, Xuecheng Yang, Ulf Dittmer, Mengji Lu, Dongliang Yang, Jia Liu. Hepatitis B Virus-Specific CD8+ T Cells Maintain Functional Exhaustion after Antigen Reexposure in an Acute Activation Immune Environment. *Front Immunol.* 2018, 9:219.
18. Du K, Liu J, Broering R, Zhang X, Yang D, Dittmer U, Lu M. Recent advances in the discovery and development of TLR ligands as novel therapeutics for chronic HBV and HIV infections. *Expert Opin Drug Discov.* 2018 Jul;13(7):661-670.
19. Huang S, Zou S, Chen M, Gao X, Chen L, Yang X, Yu Q, Zhao X, Du Y, Yang X, Lin Y, Wang B, Lu Y, Liu J, Zheng X, Gong F, Lu M, Yang D, Wu J. Local Stimulation of Liver Sinusoidal Endothelial Cells with a NOD1 Agonist Activates T Cells and Suppresses Hepatitis B Virus Replication in Mice. *J Immunol.* 2018 May 1;200(9):3170-3179.
20. Liu J, Yu Q, Wu W, Huang X, Broering R, Werner M, Roggendorf M, Yang D, Lu M. TLR2 Stimulation Strengthens Intrahepatic Myeloid-Derived Cell-Mediated T Cell Tolerance through Inducing Kupffer Cell Expansion and IL-10 Production. *J Immunol.* 2018 Apr 1;200(7):2341-2351.
21. Lin Y, Huang X, Wu J, Liu J, Chen M, Ma Z, Zhang E, Liu Y, Huang S, Li Q, Zhang X, Hou J, Yang D, Lu M, Xu Y. Pre-Activation of Toll-Like Receptor 2 Enhances CD8+ T-Cell Responses and Accelerates Hepatitis B Virus Clearance in the Mouse Models. *Front Immunol.* 2018 Jun 29;9:1495.
22. Schöneweis K, Motter N, Roppert PL, Lu M, Wang B, Roehl I, Glebe D, Yang D, Morrey JD, Roggendorf M, Vaillant A. Activity of nucleic acid polymers in rodent models of HBV infection. *Antiviral Res.* 2018 Jan;149:26-33.