

PI Information List Of 2018(There are 26 Pis in 25 teams of IPS)

Numbers

1

Research unit name	Hepatitis B Virus and Liver Disease
Research unit representative	Yu WEI
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Research unit composition	Tian XIA (Senior Scientist), Xiaoyu REN (Research Assistance), Shuzhi CUI (Ph.D Student), Nur Alam MD (Postdoc), Mireille KAMENI (Postdoc), Rabindra KARKI (Ph.D Student)
Research direction	Hepatitis B virus (HBV) life cycle, HBV-host interaction, crosstalk of liver inflammation, chronic HBV infection and microbiota, signaling pathways in liver fibrosis and carcinogenesis, cholestasis
5 recent publications (2010-2018)	<ol style="list-style-type: none"> 1. Mechanisms of HBV-related hepatocarcinogenesis. Neuveut C, Wei Y, Buendia MA. J Hepatol. 2010 52(4):594-604. Review. 2. Deficiency of multidrug resistance 2 contributes to cell transformation through oxidative stress. Tebbi A, Levillayer F, Jouvion G, Fiette L, Soubigou G, Varet H, Boudjadja N, Cairo S, Hashimoto K, Suzuki AM, Carninci P, Carissimo A, di Bernardo D, Wei Y. Carcinogenesis 2016 37:39-48. 3. Single-nucleotide resolution mapping of hepatitis B virus promoters in infected human livers and hepatocellular carcinoma. Altinel K, Hashimoto K, Wei Y, Neuveut C, Gupta I, Suzuki AM, Dos Santos A, Moreau P, Xia T, Kojima S, Kato S, Takikawa Y, Hidaka I, Shimizu M, Matsuura T, Tsubota A, Ikeda H, Nagoshi S, Suzuki H, Michel M. L, Samuel D, Buendia, MA, Faivre, J, Carninci, P. J Virol. 2016 90:10811-10822. 4. The LIM-only protein FHL2 is a negative regulator of TGF-beta1 expression. Dahan J, Levillayer F, Xia T, Nouët Y, Werts C, Fanton d'Andon M, Adib-Conquy M, Cassard-Doulicier AM, Khanna V, Chen J, Tordjmann T, Buendia MA, Jouvion G, Wei Y. Mol Cell Biol. 2017 37(10):e00636-16. 5. Fatty acid metabolism complements glycolysis in the selective regulatory T cell expansion during tumor growth. Pacella I, Procaccini C, Focaccetti C, Miacci S, Timperi E, Faicchia D, Severa M, Rizzo F, Coccia EM, Bonacina F, Mitro N, Norata GD, Rossetti G, Ranzani V, Pagani M, Giorda E, Wei Y, Matarese G, Barnaba V, Piconese S. Proc Natl Acad Sci USA. 2018 115(28):e6546-6555.

2

Research unit name	The Lab for Pathogen Big Data
Research unit representative	Pei HAO
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Research unit composition	Yuanhua Liu(Associate Professor) ; Liang Ou (Ph.D Candidate); Xintian Xu (Ph.D Candidate); Tingting Ma(M.S Candidate); Yiyi Jiang(M.S Candidate)
Research direction	Mainly focus in two aspects: i) to build a public pathogen big database, including nucleotide/protein sequences of pathogens published in literature, as well as multi-omic data from both pathogens and hosts with respect to pathogenic infection; ii) to construct a platform for pathogen discovery, where bioinformatics, system biology and AI are employed to perform a integration analysis on the big data, with the aim to extract the pathogenic features of mutation, infection and spreading, and finally supply biomarkers for pathogen detection, prevention and treatment.
5 recent publications (2010-2018)	<ol style="list-style-type: none"> 1. Jing X, Xie B, Chen L, Zhang N, Jiang Y, Qin H, Wang H, Hao P, Yang S, Li X. Implementation of the CRISPR-Cas13a system in fission yeast and its repurposing for precise RNA editing. Nucleic Acids Res. 2018 May 31. doi: 10.1093/nar/gky433. 2. Cao Y, Cao R, Huang Y, Zhou H, Liu Y, Li X, Zhong W, Hao P. A comprehensive study on cellular RNA editing activity in response to infections with different subtypes of influenza A viruses. BMC Genomics. 2018 Jan 19;19(Suppl 1):925. doi: 10.1186/s12864-017-4330-1. 3. Huang Y, Cao Y, Li J, Liu Y, Zhong W, Li X, Chen C, Hao P. A survey on cellular RNA editing activity in response to Candida albicans infections. BMC Genomics. 2018 Jan 19;19(Suppl 1):43. doi: 10.1186/s12864-017-4374-2. 4. Yu Y, Zhou H, Kong Y, Pan B, Chen L, Wang H, Hao P*, Li X*. The Landscape of A-to-I RNA Editome Is Shaped by Both Positive and Purifying Selection. PLoS Genet. 2016 Jul 28;12(7):e1006191. 5. Yimeng Kong, Hongxia Zhou, Yao Yu, Longxian Chen, Pei Hao*, Xuan Li* The evolutionary landscape of intergenic trans-splicing events in insects. Nat Commun. 2015 Nov 2;6:8734.

3

Research unit name	Infection and Immunity Unit
Research unit representative	Hong TANG
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Telephone	86-21-54923001
Research unit composition	Hairong Chen (PhD, Associate Professor), Junjing Yu (Associate Professor), Lei Pan (PhD, Professor)

5 recent publications (2009-2015)	<p>1. Zhao J, Yang X, Kim KD, Auh S, Fu Y* and Tang H* (2009) Do adaptive immune cells suppress or activate innate immunity? Trends Immunol 30(1):8-12.</p> <p>2. Upadhyay V, Poroyko V, Kim T, Devkota S, Fu S, Liu D, Tumanov AV, Koroleva EP, Deng L, Nagler C, Chang EB, Tang H & Fu YX (2012) Lymphotoxin regulates commensal responses to enable diet-induced obesity. Nat Immunol, 13(10):947-53.</p> <p>3. Chen J, Zhao Y, Zhang C, Chen HR, Feng J, Chi X, Y Pan, J Du, M Guo, H Cao, H Chen, Z Wang, R Pei, Q Wang, L Pan, J Niu, X Chen* and Tang H*. (2014). Persistent hepatitis C virus infections and hepatopathological manifestations in immune-competent humanized mice. Cell Res, 24:1050-66.</p> <p>4. Ma F, Feng J, Zhang C, Li Y, Qi G, Li H, Wu Y, Fu Y, Zhao Y, Chen HR, Du J, & Tang H (2014). The Requirement of CD8+ T Cells To Initiate and Augment Acute Cardiac Inflammatory Response to High Blood Pressure. J Immunol, 192(7), 3365-73.</p> <p>5. Pan L, Wang S, Lu T, Weng C, Song X, Park K, Sun J, Yang ZH, Yu J, Tang H, McKearin DM, Chamovitz DA, Ni J, Xie T (2014). Protein competition switches the function of COP9 from self-renewal to differentiation. Nature, 514(7521):233-6.</p>
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4

Research unit name	Pathogen-Host Interaction and Epigenetics
Research unit representative	Lubin JIANG
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Research unit composition	PI: Lubin Jiang (Professor); Associate Professor: Xueyu Dai; Research Assitant: QingQing Jing, Long Cao, Yuxuan Xu; Ph.D candidate: Shigang Yin, Bo Xiao, Zhenghui Huang, Maoxin Sun, Yang Hu, Mingli Shi, Jieqiong Wei, Yuhao Wen, Tongke Tang, Huiling Chen, DanDan Xu, Yaozheng Xu, Yuxi Chen
Research direction	Both eukaryotic and prokaryotic pathogens infect host stably via an immune evasion mechanism termed mutually exclusive expression. Nowadays little is known about this epigenetic mechanism, largely limiting understanding of pathogenesis of many pathogens and development of novel drugs as well as vaccines. Our lab aims to elucidate the molecular mechanisms of epigenetic and genetic factors (histone modifications, lncRNA, transcription factors, nucleic acid methylation, etc.) of pathogens, interaction between pathogens and host in infectious diseases caused by Plasmodium falciparum. The development of novel drugs and vaccines are our long-term view.
5 recent publications (2010-2018)	<p>1. Chen W, Huang Z, Wang W, Mao F, Guan L, Tang Y, Jiang H, Li J, Huang J*, Jiang L*, Zhu J.*, Discovery of new antimalarial agents: Second-generation dual inhibitors against FP-2 and PfDHFR via fragments assembly, Bioorg Med Chem 2017 Dec 15;25(24):6467-6478 (*Corresponding Author)</p> <p>2. Liu P*, Jiang L.*. Conditional knockout tools: Application of site-specific incorporation of unnatural amino acid via genetic code expansion in viral and parasite vaccine development, Synth Syst Biotechnol. 2017 Mar 11;2(1):2-4. (*Corresponding Author)</p> <p>3. Zhao L, Yang Y, Yin S, Yang T, Luo J, Xie R, Long H, Jiang L*, Zhu B.*, CTCF promotes epithelial ovarian cancer metastasis by broadly controlling the expression of metastasis-associated genes. Oncotarget 2017 Jul 10;8(37):62217-62230 (*Corresponding Author)</p> <p>4. Yang Y, Yu Y, Li X, Li J, Wu Y, Yu J, Ge J, Huang Z, Jiang L*, Rao Y*, Yang M*., Target Elucidation by Cocrystal Structures of NADH-Ubiquinone Oxidoreductase of Plasmodium falciparum (PfNDH2) with Small Molecule To Eliminate Drug-Resistant Malaria. J Med Chem., 2017 Mar 9;60(5):1994-2005 (* corresponding author)</p> <p>5. Lubin Jiang*, Jianbing Mu, Qingfeng Zhang, Ti Ni, Prakash Srinivasan, Kempaiah Rayavara, Wenjing Yang, Louise Turner, Thomas Lavstsen, Thor G. Theander, Weiqun Peng, Guiying Wei, Qingqing Jing, Yoshiyuki Wakabayashi, Abhisheka Bansal, Yan Luo, José M.C. Ribeiro, Artur Scherf, L. Aravind, Jun Zhu, Keji Zhao, Louis H. Miller*. PfSET2vs methylation of histone H3K36 represses virulence genes in Plasmodium falciparum. Nature 499, 223-227 (2013) (*Corresponding author)</p>

5

Research unit name	VIRAL HEPATITIS
Research unit representative	Jin Zhong
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Research unit composition	Yongfen Xu (Research Associate Professor); Yimin Tong (Research Assistant Professor); Jiameng Xia (Research Secretary); Zhenliang He (Ph.D student); Yanan Zhao (Ph.D student); Tianyu Gan (Ph.D student); Qiankun Yang (Ph.D student); STEVE LEUMI YATCHOUKEU (Ph.D student); Mingzhe Guo (Ph.D student); Yisha Liang (Ph.D student); Lin Han (Ph.D student); Peilan Lou (Ph.D student); Fangling Tian (Master student); Xiaoyou Hu(Master student).
Research direction	Hepatitis C virus (HCV) causes chronic hepatitis, liver cirrhosis and liver cancer, and is a major worldwide human health problem. Introduction of highly effective direct-acting antiviral agents has greatly improved the therapeutic treatment of chronic hepatitis C in recent years, but new challenges remain such as viral drug-resistant mutations. Furthermore, lack of HCV vaccine makes it impossible to eradicate HCV globally. As a highly variable RNA virus, HCV renders a unique model to study virus-host interactions particularly for its association with host lipoproteins. Our main interest is to elucidate the molecular basis of virus-host interactions during HCV infection, which may contribute to the prevention and better treatment of HCV infection. On the other hand, we hope that our research will help address important basic scientific questions in the field of virology, immunology and cell biology. In the last several years, our research interests have been expanded to other medically important RNA viruses, such as Zika virus and Ebola virus.

5 recent publications (2010-2018)	<p>1. Zhao, Y., Cao, X., Guo, M., Wang, X., Yu, T., Ye, L., Han, L., Hei, L., Tao, W., Tong Y., Xu, Y. and Zhong, J. (2018) Neutralized E3 Ubiquitin Protein Ligase 3 is an inducible antiviral effector to inhibit HCV assembly by targeting viral E1 glycoprotein. <i>J. Virology</i>, 92(21). pii: e01123-18. JVI spotlight.</p> <p>2. *Liang, Y., *Cao, X., Ding, Q., Zhao, Y., He, Z., Zhong, J. (2018) Hepatitis C virus NS4B induces the degradation of TRIF to inhibit TLR3-mediated interferon signaling pathway. <i>PLOS Pathogens</i>. 14(5):e1007075 (*The first two authors contributed equally).</p> <p>3. *Wang, X., *Yan, Y., Gan, T., Yang, X., Li, D., Zhou, D., Sun, Q., #Huang, Z., #Zhong, J. (2017) A trivalent HCV vaccine elicits broad and synergistic polyclonal antibody response in mice and rhesus monkey. <i>Gut</i>, doi: 10.1136/gutjnl-2017-314870. (*The first two authors contributed equally; #corresponding author).</p> <p>4. Hei, L. and Zhong, J. (2017) LGP2 plays an essential role in HCV infection-induced interferon responses. <i>Hepatology</i>, 65(5):1478-1491. F1000 recommendation.</p> <p>5. *Tao, W., *Gan T., Guo, M., Xu, Y., Zhong, J. (2017) Novel Stable Ebola Virus Minigenome Replicon Reveals Remarkable Stability of the Viral Genome. <i>J. Virology</i>, 91: 22 e01316-17 (*The first two authors contributed equally). JVI spotlight.</p>
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6

Research unit name	Arbovirus interspecies transmission and antivirals
Research unit representative	Dimitri LAVILLETTE
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Research unit composition	Ke XU (co PI), Dandan REN (Technician), Lingyue GUO (Lab Manager), Solène GRAYO (Post Doc), Shuming KUO (Postdoc), Anupriya GAUTAM (UCAS PhD student), Marie CRESSON (UCAS-University de Lyon PhD student), Bowen DUAN (UCAS PhD student), Mathilde BAN (UCAS- University Paris Descartes PhD student), Lucie CAPPUCIO (UCAS- University of Lyon PhD student), Salomé BOURGEOU (UCAS-University of Rennes PhD student), Emilie CARLOT (UCAS master student), Li HUANG (UCAS master student), Minyi DING and ShaoMing HAN (Co-educated Master Students with East China Science and Technology)
Research direction	During the past 20 years, there has been a dramatic resurgence or emergence of epidemic virus diseases affecting both humans and domestic animals. Most of these diseases are caused by arthropod-borne viruses (arboviruses) which are transmitted from insects to hosts following blood meals. Most of these arboviruses are increasing their geographical area following the extension of their insect vectors. These arboviruses include, among others, Zika flavivirus that is hitting Brazil recently and Chikungunya alphavirus that enter the Caribbean and American continent at the end of 2013. However so far there is no specific treatment against arboviruses and only some have vaccine approved for human use. By studying both infections in mammals and insects, in vitro and in vivo, our global project wants to unveil the viral and/or host factors responsible for pathogenicity or resistance. Using different Alphavirus models, we want to explore: i) the host factors involved in entry, interspecies transmission and host susceptibility; and ii) the role of cell response in virus replication, in vivo spreading and difference of cytopathogenicity. These understanding will help to develop new strategies to fight these public health and veterinary threats. We are using different arbovirus models like Dengue, Zika and Chikungunya viruses.
5 recent publications (2010-2018)	<p>1. Douam F, Fusil F, Enguehard M, Dib L, Nadalin F, Schwaller L, Hrebikova G, Mancip J, Mailly L, Montserret R, Ding Q, Maise C, Carlot E, Xu K, Verhoeyen E, Baumert T, Ploss A, Carbone A, Cosset FL and Lavillette D. A protein coevolution method uncovers critical features of the Hepatitis C Virus fusion mechanism. <i>PLoS Pathog</i>. 2018 Mar 5;14(3):e1006908.</p> <p>2. Le Coupance A, Tchankouo-Nguetcheu S, Roux P, Khun H, Huerre M, Morales-Vargas R, Enguehard M, Lavillette D, Missé D, Choumet V. Co-infection of mosquitoes with chikungunya and dengue viruses reveals modulation of the replication of both viruses in midguts and salivary glands of <i>Aedes aegypti</i> mosquitoes. <i>Int J Mol Sci</i>. 2017 Aug 4;18(8). pii: E1708. doi: 10.3390/ijms18081708.</p> <p>3. Maurin G, Halgand B, Bruscella P, Fresquet J, Duclos-Vallée JC, Roque-Afonso AM, Cosset FL, Samuel D, Féray C, Lavillette D. Low cross neutralization of Hepatitis C virus correlates with liver disease in immunocompromized patients. <i>AIDS</i>. 2015 Jun 1;29(9):1025-33. doi: 10.1097/QAD</p> <p>4. Douam F, Dao Thi VL, Maurin G., Fresquet J., Mompelat D., Cosset FL and Lavillette D. A critical interaction between E1 and E2 glycoproteins determines binding and fusion properties of hepatitis C virus during cell entry. <i>Hepatology</i>. 2014 Mar;59(3):776-88</p> <p>5. Maurin G, Fresquet J, Granio O, Wychowski C, Cosset FL and Lavillette D. Identification of interactions in the E1E2 heterodimer of Hepatitis C virus important for cell entry. <i>J Biol Chem</i>. 2011 Jul 8;286(27):23865-76</p>

7

Research unit name	Viral Hemorrhagic Fevers Research Unit
Research unit representative	Gary WONG
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Telephone	
Research unit composition	
Research direction	Our research is focused on work with hemorrhagic fever viruses requiring Biosafety Level 3 or 4 (BSL-3 or 4) containment. In the field, our interests include the capture and sampling of animals/insects in the search for novel highly pathogenic viruses circulating in the wild. In addition to pathogen isolation in the laboratory, our interests include the development of novel diagnostic assays for rapid, sensitive and specific pathogen detection, animal models to study viral pathogenicity and transmission, as well as the development of specific medical countermeasures for use in humans and animals.
5 recent publications (2010-2018)	<p>1. Wong G+, Qiu X+, de La Vega M, Fernando L, Wei H, Bello A, Fausther-Bovendo H, Audet J, Kroeker A, Kozak R, Tran K, He S, Tierney K, Soule G, Moffat E, Günther S, Gao GF, Strong J, Embury-Hyatt C, and Kobinger G. (2016). Pathogenicity comparison between the Kikwit and Makona Ebola variants in rhesus macaques. <i>J Infect Dis</i>. 214(suppl 3):S281-S289.</p> <p>2. Wong G+, He S+, Wei H+, Kroeker A, Audet J, Leung A, Cutts T, Graham J, Kobasa D, Embury-Hyatt C, Kobinger GP, and Qiu X. (2015). Development and Characterization of a Guinea Pig-Adapted Sudan Virus. <i>J Virol</i>. 90(1):392-9. doi: 10.1128/JVI.02331-15.</p> <p>3. Wong G, and Kobinger GP. (2015). Backs against the wall: novel and existing strategies used during the 2014-2015 Ebola virus outbreak. <i>Clin Microbiol Rev</i>. 28(3):593-601. doi: 10.1128/CMR.00014-15.</p> <p>4. Wong G, Qiu X, Richardson JS, Cutts T, Collignon B, Gren J, Aviles J, Embury-Hyatt C, and Kobinger GP. (2014). Ebola virus transmission in guinea pigs. <i>J Virol</i>. 89(2):1314-23. doi: 10.1128/JVI.02836-14.</p> <p>5. Wong G+, Richardson JS+, Pillet S, Patel A, Qiu X, Alimonti J, Hogan J, Zhang Y, Takada A, Feldmann H, and Kobinger GP. (2012). Immune parameters correlate with protection against ebola virus infection in rodents and nonhuman primates. <i>Sci Transl Med</i>. 4(158):158ra146. doi: 10.1126/scitranslmed.3004582.</p>

8

Research unit name	Structural biology of pathogenic mechanism
Research unit representative	Lanfeng Wang
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Research unit composition	Dr. Lanfeng Wang (PI), Rui Tian (Research Assitant, RA), Duo Jin (RA), Qian Li (Ph.D. Candidate), Jun Zhang (Ph.D. Candidate), Weiwei Wang (Ph.D. Candidate), Zhaoning Wang (Master Candidate), and et al..
Research direction	1) The structure mechanism of viral transcriptional regulation by viral and host factors; 2) Structure based design of new antiviral therapeutics (Drugs/Vaccines)
5 recent publications (2010-2018)	1. Han Zhou., §, Wang, F., §, Wang, H., §, Chen, C., Zhang, T, Han, X., Wang, D., Chen, C., Wu, C., Xie, W., Wang, Z., Wang, L. * & Yang, H. * The conformational changes of Zika virus methyltransferase upon converting SAM to SAH. <i>Oncotarget</i> 8(9): 14830–14834 (2017) (*, co-corresponding author) 2. Wang, L., §, Zhou, Y.,§, Xu, L.,§, Xiao, R.,§, Lu, X., Chen, L., Chong, J., Li, H., He, C., Fu, X-D.* & Wang, D.* Molecular Basis for 5-Carboxycytosine Recognition by RNA Polymerase II Elongation Complex. <i>Nature</i> 523, 621–625 (2015). (§, Co-First Author) 3. Walmacq, C., Wang, L., Chong, J., Scibelli, K., Lubkowska, L., Gnatt, A., Brooks, P. J., Wang, D. * & Kashlev, M. * Mechanism of RNA polymerase II bypass of oxidative cyclopurine DNA lesions. <i>Proc Natl Acad Sci U S A</i> 112, E410-419 (2015). 4. Wang, L., §, Limbo, O., §, Fei, J., Chen, L., Kim, B., Luo, J., Chong, J., Conaway, R. C., Conaway, J. W., Ranish, J. A., Kadonaga, J. T., Russell, P. & Wang, D. Regulation of the Rhp26ERCC6/CSB chromatin remodeler by a novel conserved leucine latch motif. <i>Proc Natl Acad Sci U S A</i> 111, 18566-18571 (2014). (§, Co-First Author)

9

Research unit name	Immune Signaling and Regulation
Principal Investigator	Hui XIAO
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Telephone	
Research direction	The research goal of our lab is to decipher the mechanisms by which innate receptors TLRs, CLRs and RLRs regulate innate and adaptive immune responses, thereby develop novel approaches to control infection, autoimmunity and cancer. By identifying novel signaling molecules involved in the induction of cytokines IL-12, IL-6, IL-23 and IFN-I in DCs and macrophages, we wish to better understand how innate receptors decode pathogen information, whereby tailor the adaptive immune response to eradicate specific pathogen. We are particularly interested in understanding of TLRs/CLRs-induced anti-fungal Th17 responses, and TLRs/RLRs-induced anti-viral Th1 and CD8+ responses. We expect our findings will lay a foundation for the development of effective treatment to human diseases in the future.
5 recent publications (2010-2018)	1. Ma S, Wan X, Deng Z, Shi L, Hao C, Zhou Z, Zhou C, Fang Y, Liu J, Yang J, Chen X, Li T, Zang A, Yin S, Li B, Plumaz J, Chaperot L, Zhang X, Xu G, Jiang L, Shen N, Xiong S, Gao X, Zhang Y, Xiao H*. Epigenetic regulator CXXC5 recruit DNA demethylase Tet2 to regulate TLR7/9-elicited IFN response in pDCs. <i>J Exp Med.</i> 2017, 214(5):1471-1491. *Corresponding author. 2. Deng Z, Ma S, Zhou H, Zang A, Fang Y, Li T, Shi H, Liu M, Du M, Taylor PR, Zhu HH, Chen J, Meng G, Li F, Chen C, Zhang Y, Jia XM, Lin X, Zhang X, Pearlman E, Li X, Feng GS, Xiao H*. (2015) Tyrosine phosphatase SHP-2 mediates C-type lectin receptor-induced activation of the kinase Syk and anti-fungal TH17 responses. <i>Nat Immunol.</i> 16:642-652. *Corresponding author. 3. Du M, Liu J, Chen X, Xie Y, Yuan C, Xiang Y, Sun B, Lan K, Chen M, James SJ, Zhang Y, Zhong J, Xiao H*. (2015) Casein Kinase II Controls TBK1/IRF3 Activation in IFN Response against Viral Infection. <i>J Immunol.</i> 194:4477-4488. *Corresponding author. 4. He L, Zang A, Du M, Ma D, Yuan C, Zhou C, Mu J, Shi H, Li D, Huang H, Deng Q, Xiao J, Yan H, Hui L, Lan K, Xiong S, Li X, Huang Z, Xiao H*. (2015) mTOR regulates TLR-induced c-fos and Th1 responses to HBV and HCV vaccines. <i>Virologica Sinica.</i> 30:1-16. *Corresponding author. 5. Yang C, Guo L, Liu J, Yang J, Zhu K, Xiao H*, Leng Q*. (2015) Non-Classical MHC I-E negatively regulates macrophage activation and Th17 cells in NOD mice. <i>Sci Rep.</i> 5:12941-12949. *Co-corresponding authors.

10

Research unit name	Virus Assembly and Host Dependency
Research unit representative	Gang LONG
Email	glong@ips.ac.cn
Telephone	+86-21-54923160
Research unit composition	Libin Deng(Research Assistant) ; Pengjuan Ma(Research Assistant); Fanfan Zhao (Ph.D Candidate);Xiaolong Zhang (Ph.D Candidate); Wang Jiang (Ph.D Candidate); Xiaoning Wang (Ph.D Candidate); Dawei Lv (Ph.D Candidate); Yujie Chen(Ph.D Candidate);Wenxiu Bian(Ph.D Candidate); Juan Luo(M.D Candidate)
Research direction	The establishment of the cell culture model for HCV infection facilitates molecular virology research on HCV characteristics and its interaction with host cells. HCV utilizes multiple receptor molecules to gain functional entry. HCV infection induces membrane rearrangement for efficient genome replication. And with help of host lipoprotein production machinery, HCV assembles as lipo-viral particles. Major interest of our research team is, based on recent progresses, to study the mechanism underlying interactions between HCV and host apolipoproteins. We hope more precise knowledge on this aspect would pave the way to the development of novel strategy to control HCV infection.

5 recent publications (2010-2018)	<p>1. Wang Jiang, Fawad Muhammad, Pengjuan Ma, Xiyu Liu, Gang Long, Sofosbuvir inhibits hepatitis A virus replication in vitro assessed by a cellbased fluorescent reporter system. Antiviral Research 154 (2018) 51–5</p> <p>2. Fanfan Zhao, Yongfen Xu, Dimitri Lavillette , Jin Zhong, Gang Zou & Gang Long ,Negligible contribution of M2634V substitution to ZIKV pathogenesis in AG6 mice revealed by a bacterial promoter activity reduced infectious clone, Sci Rep. 2018 Jul 12;8(1):10491</p> <p>3. Sepideh Levander, Holmström F, Frelin L, Ahlén G, Rupp D, Long G, Bartenschlager R, Sällberg M. Immune-mediated effects targeting hepatitis C virus in a syngeneic replicon cell transplantation mouse model. Gut. 2017 Jun 23. pii: gutjnl-2016-313579.</p> <p>4. Fanfan Zhao, Ting Zhao, Deng L, Lv D, Zhang X, Pan X, Xu J, Long G. Visualizing the essential role of complete virion assembly machinery in efficient Hepatitis C virus cell-to-cell transmission by viral infection activated split-intein mediated reporter system (VISI). J Virol. 2017 Jan 3;91(2).</p> <p>5. Zaili Yang, Wang X, Chi X, Zhao F, Guo J, Ma P, Zhong J, Niu J, Pan X, Long G. Neglected but Important Role of Apolipoprotein E Exchange in Hepatitis C Virus Infection. J Virol. 2016 Oct 14;90(21):9632-9643</p>
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11

Research unit name	Innate Immunity
Research unit representative	Guangxun MENG
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Telephone	021-54923100
Research unit composition	Qihong Guo (Experimentalist); Panpan Li(Research Assistant);Zhi Li(Post-doctoral),Shuxian Wu(Post-doctoral); Yihui Chen (Ph.D Candidate);Junling Niu(Co-supervised Ph.D. Candidate); Mengdan Chen (Ph.D Candidate) ; Rong Deng (Ph.D Candidate);Junchen Shen(M.S. Candidate) ;
Research direction	<p>1. Regulatory mechanism of inflammasome activation NLRP3 inflammasome can be activated by various stimuli, including Alum, silica, influenza virus, ATP, which indicates common regulatory molecules are likely involved in the process. We will search for these regulators and clarify mechanisms for their involvement in inflammasome activation.</p> <p>2. Function of inflammasome in microbial infections As an important component of innate immunity, inflammasome is important for anti-microbial infection. Studies showed NLRP3 inflammasome is essential in initiation of immune response against Influenza virus, Adenovirus, Candida albicans et. al.. We will further explore the function of NLRP3 inflammasome in anti-viral and fungal infections.</p> <p>3. Function of NLRs in autoimmune diseases and cancer Early studies show that NOD2 and NLRP3 are involved in the development of IBD and CRC. We will further explore the role of these NLRs in the development of autoimmune diseases such as lupus and identify new regulatory strategy.</p> <p>4. Pharmacological regulation of inflammasome Since inflammasome is involved in many physiological and pathological processes, it is of great therapeutic value to identify drugs to regulate inflammasome. We will screen existing drugs and new compounds to regulate inflammasome function.</p>
5 recent publications (2010-2018)	<p>1. Xiaomin Yao #, Chenhong Zhang#, Yue Xing#, Guang Xue, Qianpeng Zhang, Fengwei Pan, Guojun Wu, Yingxin Hu, Qihong Guo, Ailing Lu, Xiaoming Zhang, Rongbin Zhou, Zhigang Tian, Benhua Zeng, Hong Wei, Warren Strober, Liping Zhao* & Guangxun Meng*. Remodelling of the gut microbiota by hyperactive NLRP3 induces regulatory T cells to maintain homeostasis. Nat Commun. 2017 Dec 1;8(1):1896.</p> <p>2. Ailing Lu#, Hua Li#, Junling Niu, Shuxian Wu, Guang Xue, Xiaomin Yao, Qihong Guo, Nianhong Wan, Paride Abliz, Guiwen Yang, Liguang An, Guangxun Meng*. Hyper-activation of the NLRP3 Inflammasome in Myeloid cells Leads to Severe Organ Damage in Experimental Lupus. J Immunol, 2017.02.01, 198(3):1119~1129.</p> <p>3. Yue Xing#, Xiaomin Yao#, Hua Li, Guang Xue, Qihong Guo, Guiwen Yang, Ailing Lu, Yan Zhang, Guangxun Meng*. Cutting Edge: TRAF6 Mediates TLR/IL-1R Signaling-Induced Nontranscriptional Priming of the NLRP3 Inflammasome. J Immunol. 2017 Sep 1;199(5):1561-1566.</p> <p>4. Hongbin Wang#, Xiaobo Lei#, Xia Xiao, Chunfu Yang, Wenli Lu, Zhong Huang, Qibin Leng, Qi Jin, Bin He, Guangxun Meng*, and Jianwei Wang*, Reciprocal Regulation between Enterovirus 71 and the NLRP3 Inflammasome, Cell Reports, 2015.7.7, 12(1): 42~48</p> <p>5. Lei G#, Chen M#, Li H#, Niu JL, Wu S, Mao L, Lu A, Wang H, Chen W, Xu B, Leng Q, Xu C, Yang G, An L, Zhu LP*, Meng G*. Biofilm from a clinical strain of Cryptococcus neoformans activates the NLRP3 inflammasome. Cell Res. 2013 Jul;23(7):965-8.</p>

12

Research unit name	Virus-associated lymphomagenesis
Research unit representative	Xiaozhen Liang
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Telephone	021-54928096
Research unit composition	Research assistant: Linlin Kuang; PhD student: Liu Shuai, Long Li, Zhongshun Liu, Congwei Jiang, Zhangmeixue Lei; Master student: Mu Liu, Ying Gao, Sansan Liu, Chaoyue Xu.
Research direction	Our research aims to understand herpesvirus-associated tumorigenesis, especially Epstein-Barr Virus (EBV)-associated lymphomagenesis and other cancers. By coupling the murine gammaherpesvirus 68 (MHV68) mouse model, we mainly focus on the interaction of the virus with the host, including host antiviral responses, host immune regulation of viral pathogenesis and tumorigenesis, as well as molecular mechanisms of viral latency and reactivation.

5 recent publications (2010-2018)	<p>1. Xingchen Zhou, Zhongshun Liu, Shuai Liu, Chaocan Zhang, Xiaozhen Liang. ER stress regulation of B cell receptor-mediated gammaherpesvirus lytic replication by ATF4 and CHOP. <i>Journal of Biological Chemistry</i> 2018 Feb 23;293(8):2801-2814.</p> <p>2. Xingchen Zhou, Wenbo Jiang, Zhongshun Liu, Shuai Liu, Xiaozhen Liang. Virus Infection and Death Receptor-Mediated Apoptosis. <i>Viruses</i>. 2017 Oct 27;9(11).</p> <p>3. Sihan Dong, J Craig Forrest, Xiaozhen Liang. Murine Gammaherpesvirus 68: A Small Animal Model for Gammaherpesvirus-Associated Diseases. <i>Adv Exp Med Biol</i>. 2017;1018:225-236.</p> <p>4. Lingbing Tan, Chaocan Zhang, Julien Dematos, Linlin Kuang, Jae U Jung and Xiaozhen Liang. CD95 signaling inhibits B cell receptor-mediated gammaherpesviral replication in apoptosis-resistant B lymphoma cells. <i>J Virol</i>. 2016 Nov 1;90(21):9782-9796.</p> <p>5. XiaoZhen Liang, Crepeau RL, Zhang W, Samuel H Speck , Edward J Usherwood. CD4 and CD8 T cells directly recognize murine gammaherpesvirus 68-immortalized cells and prevent tumor growth. <i>J. Virol</i>. 2013 (87) 6051-6054</p>
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13

Research unit name	Viral Disease and Vaccine Translational Research Unit
Research unit representative	Xia JIN
Email	xjin@ips.ac.cn
Telephone	86-21-5492 3076
Research unit composition	Jin Sun, PhD (Reseach Associate); Min Li, PhD (Postdoctoral Reserch Associate); Jiayi Shu, Huabin Liang, Ruohen Yang, Zhihua Liu, Mengling Zhang, Nining Ge, Yian Li (PhD candidates); Zhiheng Zheng, Yilin Cao (MSc candidates)
Research direction	We are focused on studying the pathogenesis of human flavivirus infections and the development of vaccines against these diseases
5 recent publications (2010-2018)	<p>1.Xia Jin, Min Lee, Jiayi Shu. Dengue fever in China: an emerging problem demands attention. <i>Emerging Microbe and Infection</i>. 2015. Jan;4(1):e3.</p> <p>2.Sun J, Min Li, Yinan Wang, Pei Hao, Xia Jin. Elaboration of tetravalent antibody responses against dengue viruses using a subunit vaccine comprised of a single consensus dengue envelope sequence. 2017. <i>Vaccine</i>, 35:6308-6320. doi: 10.1016/j.vaccine.2017.09.063.</p> <p>3.Chao Zhang, Rui Hua, Yuanyuan Cui, Shasha Wang, Hongqing Yan, Dongmei Li, Yonghong Zhang, Zhengkun Tu, Pei Hao, Xinyue Chen, Jin Zhong, Junqi Niu, Xia Jin. Comprehensive mapping of antigen specific T cell responses in hepatitis C virus infected patients with or without spontaneous viral clearance. <i>PLOS ONE</i> DOI:10.1371/journal.pone.0171217 February 7, 2017</p> <p>4. Min Li, Lingzhai Zhao, Chao Zhang, Xin Wang, Wenxi Hong, Jin Sun, Ran Liu, Lei Yu, Fuchun Zhang and Xia Jin. Dengue Immune Sera Enhance Zika Virus Infection in Human Peripheral Blood Monocytes. 2018. <i>PLoS ONE</i>, <i>PLoS ONE</i> 13(7): e0200478. https://doi.org/10.1371/journal.pone.0200478</p> <p>5.Huabin Liang, Ruoheng Yang, Zhihua Liu, Min Li, Haitao Liu, Xia Jin. Recombinant Zika virus envelope protein elicited protective immunity against Zika virus in mice. 2018. <i>PLoS ONE</i> 13(3): e0194860. https://doi.org/10.1371/journal.pone.0194860.</p>

14

Research unit name	Anti-infective immunity and immune diseases
Research unit representative	Xing LIU
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Telephone	86-21-54923080
Research unit composition	Xiwen Lou (Assistant Professor) ; Zengzhang Zheng (Post-doc); Tingtao Wu (Ph.D Candidate)
Research direction	The lab focuses on innate immune responses and related immune diseases (such as sepsis, systemic lupus erythematosus and inflammatory dermatosis) and aims to reveal the novel mechanisms of immune responses and immune regulations by using cell-based infection models and animal diseases models. Based on our expertise and experience, our lab will further study (1) the molecular mechanisms underlying inflammasome pathways; (2) identify and test non-canonical inflammasome inhibitors as a novel strategy for preventing or treating sepsis; (3) assess roles of other Gasdermin family members in protecting against invading pathogens. These studies will further deepen our understanding of host-microbial interactions and provide new strategies for the treatment of infectious diseases such as sepsis.
5 recent publications (2010-2018)	<p>1. Liu X*, Fu R*, Pan Y, Meza-Sosa KF, Zhang Z, Lieberman J. PNPT1 Release from Mitochondria during Apoptosis Triggers Decay of Poly(A) RNAs. <i>Cell</i>. 2018;174(1):187-201 e12. doi: 10.1016/j.cell.2018.04.017. PubMed PMID: 29779946. *Co-first author</p> <p>2. Liu X, Lieberman J. A Mechanistic Understanding of Pyroptosis: The Fiery Death Triggered by Invasive Infection. <i>Advances in immunology</i>. 2017;135:81-117. doi: 10.1016/bs.ai.2017.02.002. PubMed PMID: 28826530.</p> <p>3. Cui Y, Yu H, Zheng X, Peng R, Wang Q, Zhou Y, Wang R, Wang J, Qu B, Shen N, Guo Q, Liu X#, Wang C#. SENP7 Potentiates cGAS Activation by Relieving SUMO-Mediated Inhibition of Cytosolic DNA Sensing. <i>PLoS pathogens</i>. 2017;13(1):e1006156. doi: 10.1371/journal.ppat.1006156. PubMed PMID: 28095500; PubMed Central PMCID: PMC5271409. #Co-corresponding author</p> <p>4. Liu X*, Zhang Z*, Ruan J*, Pan Y, Magupalli VG, Wu H, Lieberman J. Inflammasome-activated gasdermin D causes pyroptosis by forming membrane pores. <i>Nature</i>. 2016;535(7610):153-8. doi: 10.1038/nature18629. PubMed PMID: 27383986; PubMed Central PMCID: PMC5539988. *Co-first author</p> <p>5. Wang Q*, Liu X*#, Cui Y, Tang Y, Chen W, Li S, et al. The E3 ubiquitin ligase AMFR and INSIG1 bridge the activation of TBK1 kinase by modifying the adaptor STING. <i>Immunity</i>. 2014;41(6):919-33. doi: 10.1016/j.immuni.2014.11.011. PubMed PMID: 25526307. Cover Article. *Co-first author and #Co-corresponding author</p>

15

Research unit name	Cell biology and imaging study of pathogen host interaction
Research unit representative	Yaming JIU
Email	ymjiu@ips.ac.cn

Telephone	0086-021-54923175
Research unit composition	Jian Li(Research Assistant) ; Yue Zhang (Ph.D Candidate) ; Wei Gao (Ph.D Candidate)
Research direction	The unit interests in in fields of cytoskeleton- and intracellular trafficking- centric view of the world at both cellular and behavior level to understand (1) how pathogens target to the cytoskeletal system and membrane trafficking of host to regulate their invasion, duplication, and mobility between host cells; (2) the molecular mechanisms of cytoskeletal interaction and the regulation to cell migration, polarity and mechanosensing; (3) related optical imaging methods.
5 recent publications (2010-2018)	1. Yaming Jiu§, Johan Peränen, Niccole Schaible, Fang Cheng, John Eriksson, Ramaswamy Krishnan, Pekka Lappalainen§ “Vimentin intermediate filaments control actin stress fiber assembly through GEF-H1 and RhoA”. Journal of Cell Science. 2017 Jan 18; 130(5): 892-902 [§corresponding author] (IF 5.432) 2. Yaming Jiu, Jaakko Lehtimäki, Sari Tojkander, Fang Cheng, Harri Jääliñoja, Xiaonan Liu, Markku Varjosalo, John E. Eriksson, Pekka Lappalainen “Bidirectional interplay between vimentin intermediate filaments and contractile actin stress fibers”. Cell Reports. 2015 Jun 16; 11(10):1511-8 (IF 8.358) 3. Isabel Weinheimer*, Yaming Jiu*, Minna-Liisa Rajamäki*, Olli Matilainen, Jukka Kallijärvi, Wilmer J. Cuellar, Rui Lu, Mart Saarma, Carina I. Holmberg, Jussi Jäntti, Jari Valkonen “Suppression of RNAi by dsRNA-degrading RNaseIII enzymes of viruses in animals and plants”. Plos Pathogens. 2015 Mar 6; 11(3):e1004711 [*equal contribution] (IF 9.127) 4. Yaming Jiu, Congyu Jin, Yanbo Liu, Carina Holmberg-Still, Jussi Jäntti “Exocyst subunit exoc-7 and exoc-8 cooperate with small GTPases to regulate different behaviors and endocytic trafficking in C. elegans”. Plos One. 2012 Feb 28; 7(2):e32077 (IF 4.033) 5. Yaming Jiu, Yang Yue, Song Yang, Lin Liu, Junwei Yu, Rongying Zhang, Zhengxing Wu, Tao Xu “Insulin-like signaling pathway for decision making behavior in C. elegans”. Protein Cell. 2010 Jan; 1(1):75-81 (IF 3.247)

16

Research unit name	Pathogen Discovery and Big Data Center
Research unit representative	Chiyu ZHANG
Email	zhangcy1999@ips.ac.cn
Telephone	86 15800781776
Research unit composition	Yihong Hu(Associate Professor) ; Yanpeng Li (Postdoctoral fellow); Kai Liu (Ph.D Candidate); Xuemin Fu, Yi Zhou, Yingxue Li, Yingying Ma, Lulu Zuo, Rong Xu, and Yuyi Zhang (Master students)
Research direction	1. Pathogen Discovery and human virome (focus on patient with unknown origin); 2. Molecular epidemiology and evolution of human viruses; 3. Molecular diagnostics of infectious diseases
5 recent publications (2010-2018)	1. Li Y, Deng X, Hu F, Wang J, Liu Y, Huang H, Ma J, Zhang J, Zhang F*, Zhang C*. Metagenomic analysis identified co-infection with human rhinovirus C and bocavirus 1 in an adult suffering from severe pneumonia. J infection. 2018 Mar;76(3):311-313. 2. Zhang M, Liu K, Hu Y, Lin Y, Li Y, Zhong P, Jin X, Zhu X, Zhang C*. A novel quantitative PCR mediated by high-fidelity DNA polymerase. Sci Rep. 2017; 7(1):10365. 3. Han J, Wang L, Liu J, Jin M, Hao F, Zhang P, Zhang Z, Wen D, Wu X, Liu G, Ji L, Xu D, Zhou D, Leng Q, Lan K*, Zhang C*. Co-circulation of three HA and two NA subtypes of avian influenza viruses in Huzhou, China, April 2013: implication for the origin of the novel H7N9 virus. J Virol 2014; 88:6506-6511. 4. Han J, Jin M, Zhang P, Liu J, Wang L, Wen D, Wu X, Liu G, Zou Y, Lv X, Dong X, Shao B, Gu S, Zhou D, Leng Q, Zhang C*, Lan K. Epidemiological link between exposure to poultry and all influenza A(H7N9) confirmed cases in Huzhou city, China, March to May 2013. Euro Surveill. 2013;18(20):pii=20481. 5. Pang W#, Zhang C# (co-first author), Duo L, Zhou YH, Yao ZH, Liu FL, Li H, Tu YQ, Zheng TY. Extensive and complex HIV-1 recombination between B', C and CRF01_AE among IDUs in south-east Asia. AIDS 2012, 26(9):1121-9.

17

Research unit name	Vaccinology and antiviral strategies
Research unit representative	Zhong HUANG
Email	huangzhong@ips.ac.cn
Telephone	+86-21-54923066
Research unit composition	Associate professor: Qingwei Liu;Research assistant: Shuxia Wang;Secretary: Lili Pang ;Post-doc: Chao Zhang;Ph.D.Candidate: Xueyang Zhang, Wenlong Dai, Yu Zhou ;Master: Pei Xiong, Weimin Ma, Shiqi Xu, Kaiyan Yang
Research direction	1) Design, expression, and preclinical testing of chimeric virus-like particles (VLPs) as vaccines and delivery vehicles for therapeutic molecules; 2) Investigation of the mechanisms of VLP uptake, processing and presentation by the immune system; 3) Investigation of mucosal immunization and mucosal adjuvants; 4) Production of recombinant vaccines, antibodies and microbicides using high-yield expression systems.
5 recent publications (2010-2018)	1. Zhang W #, Dai W #, Zhang C #, Zhou Y, Xiong P, Wang S, Ye X, Liu Q*, Zhou D*, Huang Z* (2018) A virus-like particle-based tetravalent vaccine for hand, foot and mouth disease elicits broad and balanced protective immunity. Emerging Microbes & Infections 7(1):94. 2. Qu P, Zhang W, Li D, Zhang C, Liu Q, Zhang X, Wang X, Dai W, Xu Y, Leng Q, Zhong J, Jin X*, Huang Z*. (2018) Insect cell-produced recombinant protein subunit vaccines protect against Zika virus infection. Antiviral Research 154:97-103.. 3. Zhou Y #, Zhang C #, Liu Q, Gong S, Geng L*, Huang Z*. (2018) A virus-like particle vaccine protects mice against coxsackievirus A10 lethal infection. Antiviral Research 152:124-130. 4. Zhang C #, Zhang X #, Dai W, Liu Q, Xiong P, Wang S, Geng L, Gong S*, Huang Z*. (2018) A mouse model of enterovirus D68 infection for assessment of the efficacy of inactivated vaccine. Viruses 10(2): E58. 5. Zhang C, Zhang X, Zhang W, Dai W, Xie J, Ye L, Wang H, Chen H, Liu Q, Gong S, Geng L*, Huang Z*. (2018) Enterovirus D68 virus-like particles expressed in Pichia pastoris potently induce neutralizing antibody responses and confer protection against lethal viral infection in mice. Emerging Microbes & Infections 7(1):3.

18

Research unit name	Unit of Pathogenic Fungal Infection & Host Immunity
Research unit representative	Changbin CHEN
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Telephone	+86 021-54923055 (office)
Research unit composition	Xinhua Huang (Associated professor); Raman (Postdoc); Yinhe Mao (Ph.D. Candidate); Yuanyuan Wang (Ph.D. Candidate); Xianwei Wu (Ph.D. Candidate); Tong Jiang (Ph.D. Candidate); Xiaoqing Chen (Ph.D. Candidate); Hong Cao (Research Assistant);
Research direction	Host-Fungal interaction; Signaling involved in fungal commensalism and pathogenicity; Microbiota; Host innate immune response against fungal infection
5 recent publications (2010-2018)	1. Huang, X., ... and Chen, C* . (2017) Mitochondrial complex I bridges a connection between regulation of carbon flexibility and gastrointestinal commensalism in the human pathogen <i>Candida albicans</i> . <i>PLOS Pathogens</i> 13(6): e1006414 ; 2. Pande, K., Chen, C. and Noble, S. M. (2013) Passage through the mammalian gut triggers a phenotypic switch required for <i>Candida albicans</i> commensalism. <i>Nature Genetics</i> . 45(9):1088-91 ; 3. Chen, C. and Noble, S. M. (2012) Post-transcriptional regulation of the Sef1 transcription factor controls the virulence of <i>Candida albicans</i> in its mammalian host.8(11): e1002956; 4. Chen, C* ., Pande, K*., French, S. D., Tuch, B. B. and Noble, S. M. (2011) A unique iron homeostasis regulatory circuit with reciprocal roles in <i>Candida albicans</i> commensalism and pathogenesis. <i>Cell Host & Microbe</i> . 10(2): 118-35. (*equal contribution); 5. Dumesic, P., Natarajan, P., Chen, C. , Drinnenberg, A., Schiller, B., Moresco, J., Thompson, J., Yates, J., Bartel, D., and Madhani H. (2013) Stalled spliceosomes are a signal for RNAi-mediated genome defense. <i>Cell</i> : 152(5):957-968.

19

Research unit name	Intestinal microenvironment and health
Research unit representative	Lei PAN
Email	panlei@ips.ac.cn
Telephone	86-21-54923090
Research unit composition	Lei Wang(PhD student) ; Shanshan Chu (Senior lab master); Ms. Zhiqin Fan(Lab manager) Yaya zhao(Post-Doc)
Research direction	Combing the manipulation of <i>Drosophila</i> and the mouse, at present our lab mainly focus on the regulation of intestinal eco-immunological homeostasis including three aims: 1) Innate immune signaling homeostasis: to identify new regulatory factors and to determine network regulations of mucosal innate immunity, especially to decipher the inter-organ communications to coordinate local-systemic immune signal transduction; 2) Cellular homeostasis: to study the damages initiation and stem cell mediated tissue repair of intestinal epithelia during combating pathogens; 3) Commensal flora homeostasis: to learn corporately the changepattern and the immunological regulation mechanisms of gut commensal microflora and the fat/energy metabolism.
5 recent publications (2010-2018)	1. Yang S, Yu J, Fan Z, Gong S-T, Tang H, Pan L. 2018. Bub1 facilitates virus entry through endocytosis in a model of <i>Drosophila</i> pathogenesis. <i>J Virol</i> 92:e00254-18 (2018) (Correspondence author) 2. Xiaomeng He*, Junjing Yu*, Min Wang, Yang Cheng, Yanan Han, Shuo Yang, Lei Sun, Ying Fang, Si-tang Gong, Zhong Wang, Yang-Xin Fu, Lei Pan# and Hong Tang#. Bap180/Baf180 is required to maintain homeostasis of intestinal innate immune response in <i>Drosophila</i> and mice. <i>Nature Microbiology</i> , 2, 17056 (2017). (#Correspondence author) 3. Pan L*, Wang S*, Lu T, Weng C, Song X, Park J, Sun J, Yang Z, Yu J, Tang H, McKearin D, Chamovitz D, Ni J, Xie T. Protein competition switches the function of COP9 from self-renewal to differentiation. <i>NATURE</i> , 2014; doi:10.1038/nature13562 (*First Author, IF= 42.351) 4. Wang X*, Pan L*, Wang S, Zhou J, Tang H, Xie T. Histone H3K9 Trimethylase Eggless Controls Germline Stem Cell Maintenance and Differentiation. <i>Plos Genetics</i> 2011, 7(12): e1002426 (IF=9.54, co-first author) 5. Pan L, Chen S, Weng C, Call G, Zhu D, Tang H, Zhang N, Xie T. Stem Cell Aging Is Controlled Both Intrinsically and Extrinsically in the <i>Drosophila</i> Ovary. <i>Cell Stem Cell</i> . 2007;1:458-469. (IF:27.5, Faculty 1000 factor=6, First Author, cited 115

20

Research unit name	Unit of Respiratory Infection and Immunity
Research unit representative	SU Xiao
Email	xsu@ips.ac.cn
Telephone	86-21-54923111
Research unit composition	Ling Li (MS, Assitant Researcher);Yaqiong Cui (MS, Research Assitant)
Research direction	Neural regulation of influenza virus, EV71 infection and immunity;Neural regulation of stem cell mobilization and repair in lung injury following viral and bacterial infections ; EV71 and Zika virus-induced neural injury
5 recent publications (2010-2018)	1. Zhao C, Yang X, Su EM, Huang Y, Li L, Matthay MA, Su X*. Signals of vagal circuits engaging with AKT1 in $\alpha 7$ nAChR+CD11b+ cells lessen E. coli or LPS-induced acute inflammatory injury. <i>Cell Discovery</i> , 2017; 3:17009 2. Sun P, Zhao C, Li L, Pan M, Qian Z, Su X*.. Deficiency of $\alpha 7$ nicotinic acetylcholine receptor attenuates bleomycin-induced lung fibrosis in mice. <i>Molecular Medicine</i> , 2017 (in press) 3. Su X*, Matthay MA, Malik AB. Requisite Role of the Cholinergic $\alpha 7$ nAChR Pathway in Suppressing Gram-negative Sepsis-induced Acute Lung Inflammatory Injury. <i>J Immunol</i> . 2010; 184(1): 401-410. 4. Su X*. Leading neutrophils to the alveoli: who is the guider? <i>Am J Respir Crit Care Med</i> . 2012;186:472-3. 5. Yang X, Zhao C, Chen X, Jiang L, Su X*. Monocytes primed with GTS-21/ $\alpha 7$ nAChR (nicotinic acetylcholine receptor) agonist develop anti-inflammatory memory. <i>QJM</i> . 2017 Jan 12. pii: hex014. doi: 10.1093/qjmed/hcx014.

21

Research unit name	Unit of Innate Defense and Immune Modulation
Research unit representative	ZHANG Xiaoming
Email	xmzhang@ips.ac.cn
Telephone	86-21-54923130
Research unit composition	Ying Zhang (MS, Research Assistant); Teng Li (MS, Research Assistant); Shyamal Goswami (PhD, Postdoc)
Research direction	Innate Defense and Immune Modulation
5 recent publications (2009-2016)	<p>1. Meng L, Tong JF, Wang H, Tao CW, Wang QL, Niu C, Zhang XM and Gao Qian. PPE38 protein of Mycobacterium tuberculosis inhibits macrophage MHC class I expression and dampens CD8+ T cell responses. Front Cell Infect Microbiol. 2017 (In press)</p> <p>2. Zhivaki D, Lemoine S, Lim A, Morva A, Vidalain PO, Schandene L, Casartelli N, Rameix-Welti MA, Miatello J, Lemercier B, Lorin V, Descamps D, Fix J, Eléouët JF, Riffault S, Schwartz O, Porcheray F, Mascart F, Mouquet H, Zhang XM, Tissières P and Lo-Man R. Inborn Ig polyreactivity cooperates with CX3CR1 to mediate the infection of regulatory B cells by respiratory syncytial virus related to lung disease severity. Immunity. 2017;46: 301-314.</p> <p>3. Dong Z, Gong K, Huang D, Zhu W, Sun W, Zhang Y, Xin P, Shen Y, Wu P, Li J, Zhang XM, Wei M. Myocardial infarction accelerates glomerular injury and microalbuminuria in diabetic rats via local hemodynamics and immunity. Int J Cardiol, 2015, 179:397-408.</p> <p>4. Zhang XM, Mozeleski B, Lemoine S, Dériaud E, Lim A, Zhivaki D, Azria E, Le Ray C, Roguet G, Launay O, Vanet A, Leclerc C, Lo-Man R. CD4 T cells with effector memory phenotype and function develop in the sterile environment of the fetus. Sci Transl Med. 2014 6(238):238ra72.</p> <p>5. Zhang XM, Casartelli N, Lemoine S, Mozeleski B, Azria E, Le Ray C, Schwartz O, Launay O, Leclerc C, Lo-Man R. Plasmacytoid dendritic cells engagement by influenza vaccine as a surrogate strategy for driving T-helper type 1 responses in human neonatal settings. J Infect Dis. 2014, 210(3):424-434.</p>

22

Research unit name	Hematopoietic stem cell and transgenic animal Unit
Research unit representative	ZHANG Yan
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Telephone	86-21-54923130
Research unit composition	Ying Zhang (MS, Research Assistant); Teng Li (MS, Research Assistant); Shyamal Goswami (PhD, Postdoc)
Research direction	Hematopoietic stem cells (HSCs) are a rare cell population that predominantly reside within adult bone marrow and are responsible for replenishing all hematopoietic and immune cell lineages throughout the lifetime of the animals. The development and differentiation of HSCs were precisely modulated by a broad range of mechanisms, including transcription factors, epigenetic factors, as well as signaling pathways. Alterations in these mechanisms could lead to dysfunctions in the development and differentiation of hematopoietic and immune cells. Define how these transcription factors, signaling pathways, and epigenetic factors contribute to the regulation of both normal and abnormal hematopoiesis will have profound implications not only for understanding of the basic molecular and cellular mechanisms that regulate normal hematopoiesis, but also for promoting clinical diagnosis and treatment of the hematopoietic and immune diseases.
5 recent publications (2009-2016)	<p>1. Meng L, Tong JF, Wang H, Tao CW, Wang QL, Niu C, Zhang XM and Gao Qian. PPE38 protein of Mycobacterium tuberculosis inhibits macrophage MHC class I expression and dampens CD8+ T cell responses. Front Cell Infect Microbiol. 2017 (In press)</p> <p>2. Zhivaki D, Lemoine S, Lim A, Morva A, Vidalain PO, Schandene L, Casartelli N, Rameix-Welti MA, Miatello J, Lemercier B, Lorin V, Descamps D, Fix J, Eléouët JF, Riffault S, Schwartz O, Porcheray F, Mascart F, Mouquet H, Zhang XM, Tissières P and Lo-Man R. Inborn Ig polyreactivity cooperates with CX3CR1 to mediate the infection of regulatory B cells by respiratory syncytial virus related to lung disease severity. Immunity. 2017;46: 301-314.</p> <p>3. Dong Z, Gong K, Huang D, Zhu W, Sun W, Zhang Y, Xin P, Shen Y, Wu P, Li J, Zhang XM, Wei M. Myocardial infarction accelerates glomerular injury and microalbuminuria in diabetic rats via local hemodynamics and immunity. Int J Cardiol, 2015, 179:397-408.</p> <p>4. Zhang XM, Mozeleski B, Lemoine S, Dériaud E, Lim A, Zhivaki D, Azria E, Le Ray C, Roguet G, Launay O, Vanet A, Leclerc C, Lo-Man R. CD4 T cells with effector memory phenotype and function develop in the sterile environment of the fetus. Sci Transl Med. 2014 6(238):238ra72.</p> <p>5. Zhang XM, Casartelli N, Lemoine S, Mozeleski B, Azria E, Le Ray C, Schwartz O, Launay O, Leclerc C, Lo-Man R. Plasmacytoid dendritic cells engagement by influenza vaccine as a surrogate strategy for driving T-helper type 1 responses in human neonatal settings. J Infect Dis. 2014, 210(3):424-434.</p>

23

Research unit name	Unit of Immune cell differentiation and regulation
Research unit representative	WANG Haikun
Email	hkwang@ips.ac.cn
Telephone	86-21-54923180
Research unit composition	Guiqin Wang (Associate Professor), Ekaterina Eremina (Ph.D student), Meng Wang (Ph.D student), Jiazi Ren (Ph.D student), Jinyi Tang (Ph.D student), Xiaoxue Deng (Ph.D student),
Research direction	Production of high affinity and long-lived antibodies by immune cells is critically essential for protection against infectious diseases, and it is also the foundation of most effective vaccines. Our research aims to understand transcriptional regulation in the development and function of Follicular Helper T (TFH) cells and B cells, two key components of humoral immunity. Knowledge obtained in our studies will facilitate new vaccine development, meanwhile offering new strategies for the treatment of infectious diseases such as HIV and influenza.

5 recent publications (2011-2017)	<p>Transitional basal cells at the squamous-columnar junction generate Barrett's oesophagus. Nature. 2017 Oct 12. doi: 10.1038/nature24269. [Epub ahead of print]</p> <p>2. Liu K, Xie F, Gao A, Zhang R, Zhang L, Xiao Z, Hu Q, Huang W, Huang Q, Lin B, Zhu J, Wang H, Que J, Lan X. SOX2 regulates multiple malignant processes of breast cancer development through the SOX2/miR-181a-5p, miR-30e-5p/TUSC3 axis. Mol Cancer. 2017;16(1):62.</p> <p>3. Li Y, Lu Y, Wang S, Han Z, Zhu F, Ni Y, Liang R, Zhang Y, Leng Q, Wei G, Shi G, Zhu R, Li D, Wang H, Zheng SG, Xu H, Tsun A, Li B. USP21 prevents the generation of T-helper-1-like Treg cells. Nat Commun. 2016;18(7):13559.</p> <p>4. Wei H, Geng J, Shi Bi, Liu Z, Wang Y, Stevens A, Sprout S, Yao M, Wang H*, Hu H*. Foxp1 controls naive CD8+ T cell quiescence by simultaneously repressing key pathways in cellular metabolism and cell cycle progression. The Journal of Immunology. 2016;196(9):3537-41. (*Co-corresponding author)</p> <p>5. Yang Q, Li F, Harly C, Xing S, Ye L, Xia X, Wang H, Wang X, Yu S, Zhou X, Cam M, Xue HH, Bhandoola A. TCF-1 upregulation identifies early innate lymphoid progenitors in the bone marrow. Nature Immunology. 2015;16(10):1044-50.</p> <p>6. Wang H, Geng J, Wen X, Bi E, Kossenkov A, Wolf A, Tas J, Choi Y, Takata H, Day T, Chang LY, Sprout S, Becker E, Willen J, Tian L, Wang X, Xiao C, Jiang P, Crotty S, Victora G, Showe L, Tucker H, Erikson J and Hu H. The transcription factor Foxp1 is a critical negative regulator of T follicular helper cell differentiation. Nature Immunology. 2014; 15(7):667-675.</p> <p>7. Feng X*, Wang H*, Takata H, Day TJ, Willen J, Hu H. Transcription factor Foxp1 exerts essential cell-intrinsic regulation of the quiescence of naive T cells. Nature Immunology. 2011; 12(6): 544-550. (*Equal first authorship, listed in alphabetical order)</p>
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24

Research unit name	Herpesvirus and Molecular Virology Research Unit
Research unit representative	QIAN Zhikang
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Research unit composition	Baoqin Xuan (Ph.D, Associate Professor); Yamei Sun (MS, Research Assistant); Shubing Tang (Ph.D., Postdoctoral Fellow)
Research direction	(1) To study how vagus nerve- $\alpha 7$ nAChR pathway regulates the host inflammatory response to bacterial or viral lung infection; (2) To investigate how this pathway affects anti-inflammatory memory of macrophages during infection and inflammation, and (3) To test whether and how activation of this pathway could regulate function of proinflammatory cells and stem cells and determine outcome of acute lung infection and immunity. We have opened a new field in neuroimmune regulation of acute lung infection and inflammation.
5 recent publications (2011-2016)	<p>1. Pan D*, Xuan B*, Sun Y, Huang S, Xie M, Bai Y, Xu W, Qian Z#. An intein-mediated modulation of protein stability system and its application to study human cytomegalovirus essential gene function. Scientific Reports 2016 May 18;6:26167.</p> <p>2. Tang S, Xuan B, Ye X, Huang Z#, Qian Z#. A Modular Vaccine Development Platform Based on Sortase-Mediated Site-Specific Tagging of Antigens onto Virus-Like Particles. Scientific Reports 2016 May 12;6:25741.</p> <p>3. Bai Y*, Xuan B*, Liu H, Zhong J, Yu D#, Qian Z#. Tuberos Sclerosis Complex Protein 2-Independent Activation of mTORC1 by Human Cytomegalovirus pUL38. Journal of Virology 2015 Aug;89(15):7625-35.</p> <p>4. Xie M*, Xuan B*, Shan J, Pan D, Sun Y, Shan Z, Zhang J, Yu D, Li B#, Qian Z#. Human cytomegalovirus exploits interferon-induced transmembrane proteins to facilitate morphogenesis of the virion assembly compartment. Journal of Virology 2015 89(6): 3049-61.</p> <p>5. Qian Z*, Xuan B*, Chapa TJ, Gualberto N, Yu D. Murine cytomegalovirus targets transcription factor ATF4 to exploit the unfolded-protein response. Journal of Virology 2012 86(12): p. 6712-23.</p>

25

Research unit name	The Unit of Viral immunology
Research unit representative	Jianhua WANG
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Research unit composition	Li SUN(Research Assistant); Yan-Heng ZHOU(Post-doctoral fellow); Chao NI (Visiting scholar); Li MA(Post-doctoral fellow) Ph. D and Master students: Wei-Wei SUN, Di QU, Wen-Dong KUANG, Shu-Ting SONG, Tian-
Research direction	The research of this unit focuses on the study of the interaction of retrovirus (HIV-1, MuLV) with host cells, in order to better understand the molecular mechanisms of viral replication, persistence, and immunopathogenesis: 1) by using primary cells, ex vivo tissue-culture, and MuLV infected mouse model, to explore the host modulation and viral hijacking during viral acute infection; 2) by using Omics methods, to identify host factor modulating HIV-1 replication and latency, and develop novel strategies for HIV/AIDS functional cure.
5 recent publications (2010-2018)	<p>1. Li C, Wang HB, Kuang WD, Ren XX, Song ST, Zhu HZ, Li Q, Xu LR, Guo HJ, Wu L*, Wang JH*. Naf1 regulates HIV-1 latency by suppressing viral promoter-driven gene expression in primary CD4+ T cells. J Virol. 2016, in press.</p> <p>2. Ren XX, Wang HB, Li C, Jiang JF, Xiong SD, Jin X, Wu L, Wang JH*. HIV-1 Nef-associated factor 1 enhances viral production by interacting with CRM1 to promote nuclear export of unspliced HIV-1 gag mRNA. J Bio. Chem. 2016. PMID:26733199.</p> <p>3. Qian YW, Li C, Jiang AP, Ge S, Gu P, Fan X, Li TS, Jin X, Wang JH*, Wang ZL*. HIV-1 gp120 glycoprotein interacting with dendritic cell-specific intercellular adhesion molecule 3-grabbing non-integrin (DC-SIGN) down-regulates tight junction proteins to disrupt the blood retinal barrier and increase its permeability. J Bio. Chem. 2016. [Epub ahead of print]. PMID: 27605665.</p> <p>4. Qu D, Li C, Sang F, Li Q, Jiang ZQ, Xu LR, Guo HJ, Zhang C, Wang JH*. The variances of Sp1 and NF-κB elements correlate with the greater capacity of Chinese HIV-1 B' -LTR for driving gene expression. Sci Rep, 2016. PMID: 27698388.</p> <p>5. Li C, Kuang WD, Qu D, Wang JH*. Toll-Interacting Protein Inhibits HIV-1 Infection and Regulates Viral Latency. Biochem Biophys Res Commun; 2016. PMID: 27181351.</p>

26

Research unit name	VirHost international laboratory
Research unit representative	Serge Benichou (Visiting Professor)

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Research unit composition	Serge Benichou (team leader), Lucie Bacq (Postdoctoral scientist), Léna Kleij (master student), Marie wootum (master student)
Research direction	HIV-1 and Zika cell-to-cell transmission
5 recent publications (2010-2018)	<p>1.Kaynaud-messina B, Bracq L, Dupont M, Sournant S, Osman Sim, Proag A, Pingris K, Sordani v, Imbaud C, Capina F, Al Saati T, Gemero I, Jurdic F, Joncoeur F, Davignon JL, Mempel TK, Benichou S, Mandonneau-Parrin I, Vérollet C. Bone degradation machinery of osteoclasts : An HIV-1 target that contributes to bone loss. Proc Natl Acad Sci U S A. 2018 115:E2556-E2565</p> <p>2.Bracq L, Xie M, Benichou S, Bouchet J. Mechanisms for Cell-to-Cell Transmission of HIV-1.Front Immunol. 2018 9:260.</p> <p>3.Bracq L, Xie M, Lambelé M, Vu LT, Matz J, Schmitt A, Delon J, Zhou P, Randriamampita C, Bouchet J, Benichou S.T cell-macrophage fusion triggers multinucleated giant cell formation for HIV-1 spreading.J Virol. 2017 pii: JVI.01237-17.</p> <p>4.Liu L, Wang W, Matz J, Ye C, Bracq L, Delon J, Kimata JT, Chen Z, Benichou S*, Zhou P.* The Glycosylphosphatidylinositol-Anchored Variable Region of Llama Heavy Chain-Only Antibody JM4 Efficiently Blocks both Cell-Free and T Cell-T Cell Transmission of Human Immunodeficiency Virus Type 1.J Virol. 2016 90:10642-10659. (*equal contribution)</p> <p>5.Herate C, Vigne C, Guenzel CA, Lambele M, Rouyez MC, Benichou S. Uracil DNA glycosylase interacts with the p32 subunit of the replication protein A complex to modulate HIV-1 reverse transcription for optimal virus dissemination.Retrovirology. 2016 13:26</p>