Curriculum Vitae

Family Name: Shi

Given Name: Zhengli

Address: 44 Xiao Hong Shan, 430071 Wuhan, Hubei, P. R. China

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Current employment: Senior scientist

Current employer: Wuhan Institute of Virology, Chinese Academy of Sciences, China

Research Interests

1. Discovery of unknown viruses in wild animals especially bats.
2. Molecular epidemiology of emerging zoonotic viruses.
3. Interspecies infection mechanism of zoonotic viruses.

Prof Zhengli Shi's researches focus on the molecular epidemiology and interspecies infection mechanism of emerging zoonotic viruses, especially bat-borne viruses, as well as discovery and characterization of novel viruses in bats and other wildlife. She has gain rich expertise on pathogen biology of coronaviruses and other emerging viruses of bat origin, virus discovery, virus evolution, and development of diagnostic technologies for emerging viruses. Prof Shi has identified ultimately the animal origin of SARS, by discovering genetically diverse bat SARS-related coronaviruses (SARSr-CoV), isolating bat SARSr-CoVs highly homologous to SARS-CoV that are able to the same receptor as SARS-CoV, and revealing the potential recombination origin of SARS-CoV. She has discovered a large number of novel viruses from Chinese bat populations, including viruses with potential public health significance.

Education:

09/01/1983 - 06/30/1987,	BSc, major in Genetics, Department of Biology, Wuhan University, China.
09/01/1987 - 06/30/1990,	MSc, major in Virology, Wuhan Institute of Virology, Chinese Academy of Sciences, China.
10/01/1996 – 05/11/2000,	Ph.D, major in Virology, University Montpellier II, Montpellier, France.

Work experience:

07/01/1990 - 6/30/1993,	Research Assistant in Wuhan Institute of Virology, Chinese Academy of Sciences, China.
07/01/1993- 9/30/1995,	Research Scientist in Wuhan Institute of Virology, Chinese Academy of Sciences, China.
07/01/2000 - Present,	Senior Scientist and Principal Investigator, Wuhan Institute of Virology, Chinese Academy of Sciences, China.
02/22/2006 - 05/21/2006,	Visit scientist in Australian Animal Health Laboratory, CSIRO, Australia
10/02/2006 - 10/23/2006,	Biosafety course training in BioMérieux P4 laboratory, France

Grants (recent five years):

01/01/2011-12/31/2015	Mechanism of interspecies transmission of zoonotic viruses, National Basic Research program of China, project no: 2011CB504700. Co-Principal Investigator. 1,300,000 RMB.
01/01/2013-12/31/2017	Identification, genetic evolution and pathogenesis of bat viruses in China. National Natural Science Foundation of China, project no: 81290341. Co-Principal Investigator. 2,900,000 RMB.
01/06/2014-31/05/2019	The ecology of bat coronaviruses and the risk of future coronavirus emergence. National Institutes of Health NIAID R01AI110964. 665,000 US dollars.
01/10/2014-30/09/2019	Emerging Pandemic Threats PREDICT 2_China, United States Agency of International Development, project no: AID-OAA-A-14-00102. Country Coordinator. 559,500 US dollars.
01/01/2016-31/12/2020	Geographical distribution and genetic varation of pathogens in Africa, Sino-Africa Joint Research Center, Chinese Academy of Science, project no: SAJC20165. Principal Investigator. 2,400,000 RMB.
01/01/2018-31/12/2021	Evolution mechanism of the adation of bat SARS-related coronaviruses to host receptor molecules and the risk of interspecies infection, National Natural Science Foundation of China, project no: 31770175. Principal Investigator. 660,000 RMB.
01/07/2018-30/06/2023	Genetic evolution and transmission mechanism of important bat-borne viruses. The strategic Priority research Program of Chinese Academy of Sciences. Principal Investigator. 8,750,000 RMB.
01/01/2019-31/12/2023	Pathogen biology studies on novel swine coronavirus, National Natural Science Foundation of China, project no: 31830096. Principal Investigator. 3,480,000 RMB.

Honours and Awards

2003,	Natural Science Award (the Second Prize) of Hubei Province, China.
2004,	Outstanding supervisor of graduate student of Hubei Province, China.
2006,	Outstanding scientist of the Chinese Academy of Sciences.

2006, Outstanding Research Article on Natural Science (the First Prize), Hubei Province, China

2014, Young and Middle-aged Scholar with Distinguished Contribution in Hubei Province, China

2014, Outstanding Research Article on Natural Science (the Grand Prize), Hubei Province, China

2016, Palm Knight Medal for Education, Government of the Republic of France

2017, Natural Science Award (the First Prize) of Hubei Province, China.

Teaching and Service

2011-present,	Director of the Center for Emerging Infectious Diseases, Wuhan Institute of Virology, Chinese Academy of Sciences
2013-present,	Director of BSL-3 laboratory at Wuhan Institute of Virology, Chinese Academy of Sciences
2014-present,	Director of the Committee of Biosafety, Wuhan Institute of Virology, Chinese Academy of Sciences
2014-present,	Director of CAS Key Laboratory of Special Pathogens and Biosafety
2015-present,	Vice Director of BSL-4 laboratory at Wuhan Institute of Virology, Chinese Academy of Sciences
2000-2005,	Host lecturer in “Advanced Molecular Biotechniques” for graduate students of Wuhan Institute of Virology, Chinese Academy of Sciences.
2006-present,	Invited lecturer in “Molecular Virology” for graduate students of Wuhan Institute of Virology, Chinese Academy of Sciences..
2017-present,	Invited lecturer in “Viral Diseases and Surveillances” for graduate students of University of Chinese Academy of Sciences.

Professional Society Membership

Member of Chinese Society for Biochemistry and Molecular Biology (2000-2016)

Member of Chinese Society for Microbiology (2002-present)

Member of American Society for Microbiology (2007-present)

Member of the Scientific Committee of the DIVERSITAS ecoHEALTH Core Project (2014-2016)

Editorial Boards

Editorial Board of *Virologica Sinica* (2001-2016)

Editorial Board of *Journal of Medical Virology* (2015-2017)

Associate Editor of *Virology Journal* (2016-2018)

Editorial Board of *Virology* (2017-2019)

Editor in Chief, *Virologica Sinica* (2017-2019)

Publications: 22/ 125.

1. Zhou, P#., Fan, H#., Lan, T#., Yang, X-L, Shi, W-F, Zhang, W., Zhu. Y., Zhang, Y-W., Xie, Q-M., Mani, S., Zheng, X-S., Li, B., Li, J-M., Guo, H., Pei, G-Q., An, X-P., Chen J-W., Zhou, L., Mai, K-J., Wu, Z-X., Li, D., Anderson, D.E., Zhang, L-B., Li, S-Y., Mi, Z-Q., He, T-T., Cong, F., Guo, P-J., Huang, R., Luo, Y., Liu, X-L., Chen, J., Huang, Y., Sun, Q., Zhang, X-L-L., Wang, Y-Y., Xing, S-Z., Chen, Y-S., Sun, Y., Li, J., Daszak, P.*, Wang, L-F.*, **Shi, Z-L.***, Tong, Y-G.*, Ma, J-Y.* (2018). Fatal Swine Acute Diarrhea Syndrome caused by an HKU2-related Coronavirus of Bat Origin. Nature, 556(7700):255-258.
2. Xie, J.Z., Li, Y., Shen, X., Goh, G., Zhu, Y., Wang, L-F., Cui, J., **Shi, Z-L.**,* Zhou, P.* (2018). Dampened STING-Dependent Interferon Activation in Bats. Cell Host Microbe, 23(3):297-301.
3. Hu, B#., Zeng, L.P#., Yang, X.L#., Ge, X.Y., Zhang, W., Li, B., Xie, J.Z., Shen, X.R., Zhang, Y.Z., Wang, N., Luo, D.S., Zheng, X.S., Wang, M.N., Daszak, P., Wang, L.F., Cui, J.*, **Shi, Z.L*.** (2017). Discovery of A Rich Gene Pool of Bat SARS-related Coronaviruses Provides New Insights into the Origin of SARS Coronavirus. PloS Pathogens 13(11): e1006698.
4. Zeng, L.P, Ge, X.Y, Peng, C., Tai, W.B, Jiang, S.B, Du, L.Y*, **Shi, Z.L*.** (2017). Cross-neutralization of SARS coronavirus-specific antibodies against bat SARA-like coronaviruses. Sci China Life Sci. 60(12):1399-1402.
5. Tan, B., Yang, X. L., Ge, X. Y., Peng, C., Liu, H. Z., Zhang, Y. Z., Zhang, L. B. & **Shi, Z. L*.** (2017). Novel bat adenoviruses with low G+C content shed new light on the evolution of adenoviruses. J Gen Virol., 98(4), 739-748.
6. Yang, X. L., Zhang, Y. Z., Jiang, R. D., Guo, H., Zhang, W., Li, B., Wang, N., Wang, L., Waruhiu, C., Zhou, J. H., Li, S. Y., Daszak, P., Wang, L. F. & **Shi, Z. L***. (2017). Genetically Diverse Filoviruses in Rousettus and Eonycteris spp. Bats, China, 2009 and 2015. Emerg Infect Dis., 23(3), 482-486.
7. Zeng, L. P., Gao, Y. T., Ge, X. Y., Zhang, Q., Peng, C., Yang, X. L., Tan, B., Chen, J., Chmura, A. A., Daszak, P. & **Shi, Z. L*.** (2016). Bat Severe Acute Respiratory Syndrome-Like Coronavirus WIV1 Encodes an Extra Accessory Protein, ORFX, Involved in Modulation of the Host Immune Response. J Virol 90(14), 6573-6582.
8. Yang, X.-L., Hu, B., Wang, B., Wang, M.-N., Zhang, Q., Zhang, W., Wu, L.-J., Ge, X.-Y., Zhang, Y.-Z., Daszak, P., Wang, L.-F. & **Shi, Z.-L*.** (2016). Isolation and Characterization of a Novel Bat Coronavirus Closely Related to the Direct Progenitor of Severe Acute Respiratory Syndrome Coronavirus. J Virol., 90 (6), 3253-3256.
9. Yang, X. L., Tan, B., Wang, B., Li, W., Wang, N., Luo, C. M., Wang, M. N., Zhang, W., Li, B., Peng, C., Ge, X. Y., Zhang, L. B., **Shi, Z***. (2015). Isolation and identification of bat viruses closely related to human, porcine, and mink orthoreoviruses. J Gen Virol. 96(12):3525-3531.
10. Menachery VD, Yount Jr BL, Debbink K, Agnihothram S, Gralinski LE, Plante JA, Graham RL, Scobey T, Ge X-Y, Donaldson EF, Randell SH, Lanzavecchia A, Marasco

WA, **Shi Z-L**, Baric RS*. (2015). A SARS-like cluster of circulating bat coronaviruses shows potential for human emergence. Nat Med 21(12):1508-1513.

11. Ge, X-Y., Li, J-L., Yang, X-L., Chmura, A.A., Zhu, G., Epstein, J.H., Mazet, J.K., Hu, B., Zhang, W., Peng, C., Zhang, Y.J., Luo, C.M., Tan, B., Wang, N., Zhu, Y., Crameri, G., Zhang, S.Y., Wang, L.F., Daszak, P.*, **Shi, Z-L*.** (2013). Isolation and characterization of a bat SARS-like coronavirus that uses the ACE2 receptor. Nature, 503(7477):535-538.
12. Zhang, G#., Cowled, C#., **Shi, Z#**., Huang, Z#., Bishop-Lilly, K. A#., Fang, X., Wynne, J. W., Xiong, Z., Baker, M. L., Zhao, W., Tachedjian, M., Zhu, Y., Zhou, P., Jiang, X., Ng, J., Yang, L., Wu, L., Xiao, J., Feng, Y., Chen, Y., Sun, X., Zhang, Y., Marsh, G. A., Crameri, G., Broder, C. C., Frey, K. G*., Wang, L. F*. & Wang, J*. (2013). Comparative Analysis of Bat Genomes Provides Insight into the Evolution of Flight and Immunity. Science 339 (6118):456-460.
13. Wu, L., Zhou, P., Ge, X., Wang, L. F., Baker, M. L. & **Shi, Z*.** (2013). Deep RNA sequencing reveals complex transcriptional landscape of a bat adenovirus. J Virol 87(1), 503-511.
14. Yuan, J., Zhang, Y., Li, J., Zhang, Y., Wang, L. F. & **Shi, Z***. (2012). Serological evidence of ebolavirus infection in bats, China. Virology Journal 9, 236.
15. Ge, X., Li, Y., Yang, X., Zhang, H., Zhou, P., Zhang, Y. & **Shi, Z***. (2012). Metagenomic analysis of viruses from bat fecal samples reveals many novel viruses in insectivorous bats in china. J Virol 86(8):4620-4630.
16. Ge, X., Li, J., Peng, C., Wu, L., Yang, X., Wu, Y., Zhang, Y. and **Shi, Z*.** (2011). Genetic diversity of novel circular ssDNA viruses in bats in China. J Gen Virol., 92(11):2646-2653.
17. Yuan, J., Marsh, G., Khetawat, D., Broder, C. C., Wang, L. F. and **Shi, Z***. (2011). Mutations in the G-H loop region of ephrin-B2 can enhance Nipah virus binding and infection. J Gen Virol 92(9):2142-2152.
18. Li, Y., Ge X., Hon C. C., Zhang H., Zhou P., Zhang Y., Wang L. F. and **Shi Z***. (2010). Prevalence and Genetic Diversity of Adeno-Associated Viruses in Bats, China. J Gen Virol. 91(10): 2601-2609.
19. Li, Y., Ge X., Zhang H., Zhou P., Zhu Y., Zhang Y., Yuan J., Wang L-F., **Shi Z.*** (2010). Host Range, Prevalence and Genetic Diversity of Adenoviruses in Bats. J. Virol. 84(8):3889–3897.
20. Li,□ Y., Wang, J., Hickey, A. C., Zhang, Y., Li, Y., Wu, Y., Zhang, H., Yuan, J., Han,□ Z., McEachern, J., Broder, C. C., Wang, L. F. and **Shi, Z***. (2008) Potential nipah virus infection in Chinese bats. Emerg Infect Dis 14(12):1974-1976.
21. Ren, W., Qu, X., Li, W., Han, Z., Yu, M., Zhang, S., Wang, L. F., Deng, H., **Shi, Z***. (2008) Difference in receptor usage between SARS coronavirus and SARS-like coronavirus of bat origin. J Virol 82(4): 1899–1907.
22. Li, W., **Shi Z***., Yu M., Ren W., Smith C., Epstein H. J., Zhang S*., Wang H., Crameri G., Hu Z., Zhang H., Zhang J., Mceachern J., Field H., Daszak P., Eaton T.B. and Wang L. F*. (2005) Bats are natural reservoirs of SARS-like coronaviruses. Science 310(5748): 676-679.

Publications (full):

1. Zhou, P., # Fan, H., # Lan, T., # Yang, X-L, Shi, W-F, Zhang, W., Zhu. Y., Zhang, Y-W., Xie, Q-M., Mani, S., Zheng, X-S., Li, B., Li, J-M., Guo, H., Pei, G-Q., An, X-P., Chen J-W., Zhou, L., Mai, K-J., Wu, Z-X., Li, D., Anderson, D.E., Zhang, L-B., Li, S-Y., Mi, Z-Q., He, T-T., Cong, F., Guo, P-J., Huang, R., Luo, Y., Liu, X-L., Chen, J., Huang, Y., Sun, Q., Zhang, X-L-L., Wang, Y-Y., Xing, S-Z., Chen, Y-S., Sun, Y., Li, J., Daszak, P.*, Wang, L-F.*, **Shi, Z-L.***, Tong, Y-G.*, Ma, J-Y.* (2018). Fatal swine acute diarrhoea syndrome caused by an HKU2-related coronavirus of bat origin. Nature, 556 (7700): 255-258.
2. Xie, J.Z., Li, Y., Shen, X., Goh, G., Zhu, Y., Wang, L-F., Cui, J., **Shi, Z-L.**,* Zhou, P.* (2018). Dampened STING-dependent interferon activation in bats. Cell Host Microbe, 23(3): 297-301 e4.
3. Li, W., Wang, B., Li, B., Zhang, W., Zhu, Y., **Shi, Z. L.** & Yang, X. L*. (2018). Genomic Characterization of a novel hepatovirus from great roundleaf bats in China. Virol Sin 33 (1), 108-110.
4. Luo, C. M., Wang, N., Yang, X. L., Liu, H. Z., Zhang, W., Li, B., Hu, B., Peng, C., Geng, Q. B., Zhu, G. J., Li, F*. & **Shi, Z. L***. (2018). Discovery of novel bat coronaviruses in South China that use the same receptor as Middle East respiratory syndrome coronavirus. J Virol 92 (13). 10.1128/JVI.00116-18.
5. Luo, Y., Li, B., Jiang, R. D., Hu, B. J., Luo, D. S., Zhu, G. J., Hu, B., Liu, H. Z., Zhang, Y. Z., Yang, X. L. & **Shi, Z. L***. (2018). Longitudinal surveillance of betacoronaviruses in fruit bats in Yunnan province, China during 2009-2016. Virol Sin 33 (1), 87-95.
6. Wang, B., Li, W., Zhou, J. H., Li, B., Zhang, W., Yang, W. H., Pan, H., Wang, L. X., Bock, C. T., **Shi, Z. L.,** Zhang, Y. Z*. & Yang, X. L*. (2018). Chevrier's field mouse (Apodemus chevrieri) and Pere David's vole (Eothenomys melanogaster) in China carry orthohepeviruses that form two putative novel genotypes within the species orthohepevirus C. Virol Sin 33 (1), 44-58.
7. Wang, N., Li, S. Y., Yang, X. L., Huang, H. M., Zhang, Y. J., Guo, H., Luo, C. M., Miller, M., Zhu, G., Chmura, A. A., Hagan, E., Zhou, J. H., Zhang, Y. Z., Wang, L. F., Daszak, P. & **Shi, Z. L***. (2018). Serological evidence of bat SARS-related coronavirus infection in humans, China. Virol Sin 33 (1), 104-107.
8. Hu, B., Zeng, L.P., Yang, X.L., Ge, X.Y., Zhang, W., Li, B., Xie, J.Z., Shen, X.R., Zhang, Y.Z., Wang, N., Luo, D.S., Zheng, X.S., Wang, M.N., Daszak, P., Wang, L.F., Cui, J.*, **Shi, Z.L***. (2017). Discovery of a rich gene pool of bat SARS-related coronaviruses provides new insights into the origin of SARS coronavirus. PloS Pathogens 13(11): e1006698.
9. Waruhiu, C#., Ommeh, S#., Obanda, V., Agwanda, B., Gakuya, F., Ge, X. Y., Yang, X. L., Wu, L. J., Zohaib, A., Hu, B. & **Shi, Z. L***. (2017). Molecular detection of viruses in Kenyan bats and discovery of novel astroviruses, caliciviruses and rotaviruses. Virol Sin. 32 (2), 101-114.
10. Zhang, Q., Zeng, L.P., Zhou, P., Irving, A.T., Li, S., **Shi, Z.L.***, Wang, L.F. (2017). IFNAR2-dependent gene expression profile induced by IFN-α in *Pteropus alecto* bat cells and impact of IFNAR2 knockout on virus infection. PloS One. 12(8):e0182866.
11. Wang, B., Cai, C.L, Li, B., Zhang, W., Zhu, Y., Chen, W.H., Zhuo, F., **Shi, Z.L.**, Yang,

X.L.* (2017). Detection and characterization of three zoonotic viruses in wild rodents and shrews from Shenzhen city, China. Virol Sin. 32(4):290-297.

12. Zeng, L.P., Ge, X.Y., Peng, C., Tai, W.B., Jiang, S.B., Du, L.Y.*, **Shi, Z.L.*** (2017). Cross-neutralization of SARS coronavirus-specific antibodies against bat SARS-like coronaviruses. Sci China Life Sci. 60(12):1399-1402.
13. Wang, B., Yang, X. L., Li, W., Zhu, Y., Ge, X. Y., Zhang, L. B., Zhang, Y. Z., Bock, C. T. & **Shi, Z. L.*** (2017). Detection and genome characterization of four novel bat hepadnaviruses and a hepevirus in China. Virol J. 14:40.
14. Liang, J., Yang, X.L., Li, B., Liu, Q., Zhang, Q., Liu, H., Kan, H.P., Wong, K.C., Chek, S.N., He, X., Peng, X., **Shi, Z.L.**, Wu, Y.* & Zhang, L.* (2017). Detection of diverse viruses in alimentary specimens of bats in Macau. Virol Sin. 32(3):226-234.
15. Ge, X.Y., Yang, W.H., Zhou, J.H., Li, B., Zhang, W., **Shi, Z.L.*** & Zhang, Y.Z.* (2017). Detection of alpha- and betacoronaviruses in rodents from Yunnan, China. Virol J. 14:98.
16. Waruhiu, C., Ommeh, S., Obanda, V., Agwanda, B., Gakuya, F., Ge, X.Y., Yang, X.L., Wu, L.J., Zohaib, A., Hu. B., **Shi, Z.L.*** (2017). Molecular detection of viruses in Kenyan bats and discovery of novel astroviruses, caliciviruses and rotaviruses. Virol Sin. 32(2):101-114.
17. Tan, B., Yang, X. L., Ge, X. Y., Peng, C., Liu, H. Z., Zhang, Y. Z., Zhang, L. B. & **Shi, Z. L.*** (2017). Novel bat adenoviruses with low G+C content shed new light on the evolution of adenoviruses. J Gen Virol. 98(4):739-748.
18. Yang, X. L., Zhang, Y. Z., Jiang, R. D., Guo, H., Zhang, W., Li, B., Wang, N., Wang, L., Waruhiu, C., Zhou, J. H., Li, S. Y., Daszak, P., Wang, L. F. & **Shi, Z. L.*** (2017). Genetically Diverse Filoviruses in *Rousettus* and *Eonycteris* spp. Bats, China, 2009 and 2015. Emerg Infect Dis. 23(3):482-486.
19. Tan, B., Wu, L.J., Yang, X.L., Li, B., Zhang, W., Lei, Y.S., Yang, G.X., Chen, J., Chen, G.,Wang, H.Z., **Shi, Z. L.***. (2016). Isolation and characterization of adenoviruses infecting endangered golden snub-nosed monkeys (*Rhinopithecus roxellana*). Virol J. 13:190
20. Zeng, L. P., Gao, Y. T., Ge, X. Y., Zhang, Q., Peng, C., Yang, X. L., Tan, B., Chen, J., Chmura, A. A., Daszak, P. & **Shi, Z. L*.** (2016). Bat Severe Acute Respiratory Syndrome-Like Coronavirus WIV1 Encodes an Extra Accessory Protein, ORFX, Involved in Modulation of the Host Immune Response. J Virol 90 (6), 6573-6582.
21. Tan, B., Yang, X. L., Ge, X. Y., Peng, C., Zhang, Y. Z., Zhang, L. B. & **Shi, Z. L***. (2016). Novel bat adenoviruses with an extremely large E3 gene. J Gen Virol., 97, 1625-1635.
22. Ge, X. Y., Yang, W. H., Pan, H., Zhou, J. H., Han, X., Zhu, G. J., Desmond, J. S., Daszak, P., **Shi, Z. L*.** & Zhang, Y. Z*. (2016). Fugong virus, a novel hantavirus harbored by the small oriental vole (Eothenomys eleusis) in China. Virol J., 13, 27.
23. Pan, X., Cao, Z., Yuan, J., **Shi, Z**., Yuan, X., Lin, L., Xu, Y., Yao, J., Hao, G. & Shen, J. (2016). Isolation and Characterization of a Novel Dicistrovirus Associated with Moralities of the Great Freshwater Prawn, Macrobrachium rosenbergii. Inte J Mol Sci., 17.
24. Yang, X.-L., Hu, B., Wang, B., Wang, M.-N., Zhang, Q., Zhang, W., Wu, L.-J., Ge, X.-Y., Zhang, Y.-Z., Daszak, P., Wang, L.-F. & **Shi, Z.-L*.** (2016). Isolation and

Characterization of a Novel Bat Coronavirus Closely Related to the Direct Progenitor of Severe Acute Respiratory Syndrome Coronavirus. J Virol., 90, 3253-3256.

25. Wang, M. N., Zhang, W., Gao, Y. T., Hu, B., Ge, X. Y., Yang, X. L., Zhang, Y. Z. & **Shi, Z. L***. (2016). Longitudinal surveillance of SARS-like coronaviruses in bats by quantitative real-time PCR. Virol Sin., 31, 78-80.
26. Ge, X. Y., Wang, N., Zhang, W., Hu, B., Li, B., Zhang, Y. Z., Zhou, J. H., Luo, C. M., Yang, X. L., Wu, L. J., Wang, B., Zhang, Y., Li, Z. X. & **Shi, Z. L***. (2016). Coexistence of multiple coronaviruses in several bat colonies in an abandoned mineshaft. Virol Sin., 31, 31-40.
27. Hu, B., Ge X., Wang, L. F., **Shi, Z***. (2015). Bat origin of human coronaviruses. Virol J., 12(1): 221.
28. Liang, Y. Z., Wu, L. J., Zhang, Q., Zhou, P., Wang, M. N, Yang, X. L, Ge, X. Y, Wang, L. F, **Shi, Z. L***. (2015). Cloning, expression, and antiviral activity of interferon beta from the Chinese microbat, *Myotis davidii*. Virol Sin., 30(6):425-432.
29. Yang, X. L., Tan, B., Wang, B., Li, W., Wang, N., Luo, C. M., Wang, M. N., Zhang, W., Li, B., Peng, C., Ge, X. Y., Zhang, L. B., **Shi, Z***. (2015). Isolation and identification of bat viruses closely related to human, porcine, and mink orthoreoviruses. J Gen Virol. 96(12):3525-3531.
30. Wang MN, Ge XY, Wu YQ, Yang XL, Tan B, Zhang YJ, **Shi ZL***. 2015. Genetic diversity and temporal dynamics of phytoplankton viruses in East Lake, china. Virol Sin, 30: 290-300.
31. Wang Y, Sun Y, Wu A, Xu S, Pan R, Zeng C, Jin X, Ge X, **Shi Z,** Ahola T, Chen Y, Guo D*. 2015. Coronavirus nsp10/nsp16 methyltransferase can be targeted by nsp10-derived peptide in vitro and in vivo to reduce replication and pathogenesis. J Virol, 89: 8416-8427.
32. Yang Y, Liu C, Du L, Jiang S, **Shi Z,** Baric RS, Li F*. 2015. Two mutations were critical for bat-to-human transmission of Middle East respiratory syndrome coronavirus. J Virol, 89: 9119-9123.
33. Menachery VD, Yount Jr BL, Debbink K, Agnihothram S, Gralinski LE, Plante JA, Graham RL, Scobey T, Ge X-Y, Donaldson EF, Randell SH, Lanzavecchia A, Marasco WA, **Shi Z-L**, Baric RS*. 2015. A SARS-like cluster of circulating bat coronaviruses shows potential for human emergence. Nat Med 21:1508-1513.
34. Mazet JK., Wei Q, Zhao GP, Cummings DT, Desmond JS, Rosenthal J， King CH., Cao WC, Chmura AA, Hagan EA, Zhang SY, Xiao XM, Xu JG, **Shi Z,** Feng F, Liu XP, Pan WQ, Zhu GJ, Zuo LY & Daszak P. (2015). Joint China-US Call for Employing a Transdisciplinary Approach to Emerging Infectious Diseases. EcoHealth, DOI: 10.1007/s10393-015-1060-1.
35. Hu, B., Chmura, A. A., Li, J., Zhu, G., Desmond, J. S., Zhang, Y., Zhang, W., Epstein, J. H., Daszak, P. & **Shi, Z***. (2014). Detection of diverse novel astroviruses from small mammals in China. J Gen Virol 95, 2442-2449.
36. Ge, X-Y., Li, J-L., Yang, X-L., Chmura, A.A., Zhu, G., Epstein, J.H., Mazet, J.K., Hu, B., Zhang, W., Peng, C., Zhang, Y.J., Luo, C.M., Tan, B., Wang, N., Zhu, Y., Crameri, G., Zhang, S.Y., Wang, L.F., Daszak, P.*, **Shi, Z-L*.** (2013). Isolation and characterization of a bat SARS-like coronavirus that uses the ACE2 receptor. Nature, 503(7477):535-538.

37. Zhang, G#., Cowled, C#., **Shi, Z#**., Huang, Z#., Bishop-Lilly, K. A#., Fang, X., Wynne, J. W., Xiong, Z., Baker, M. L., Zhao, W., Tachedjian, M., Zhu, Y., Zhou, P., Jiang, X., Ng, J., Yang, L., Wu, L., Xiao, J., Feng, Y., Chen, Y., Sun, X., Zhang, Y., Marsh, G. A., Crameri, G., Broder, C. C., Frey, K. G*., Wang, L. F*. & Wang, J*. (2013). Comparative Analysis of Bat Genomes Provides Insight into the Evolution of Flight and Immunity. Science 339 (6118):456-460.

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