CURRICULUM VITAE

Personal Information				
Name	Pan TAO	Gender	Male	
Position Title		Professor		
Working Department		College of Veterinary Medicine		
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Research Interest

1. Characterize the adaptive immune responses against animal pathogens.
2. New technologies for diagnose, prevention, therapy of animal infectious diseases.
3. The interaction of bacteriophages and their bacterial hosts.

Education & Working Experience

B.Sc., Huazhong Agricultural University, Wuhan, China
Ph.D., Wuhan University, Wuhan, China
Postdoc fellow, Catholic University of America, Washington DC, US

Publications

1. Liu Y, Dai L, Dong J, Chen C, Zhu J, Rao VB*, **Tao P***. Covalent modifications of bacteriophage genome confer a degree of resistance to bacterial CRISPR systems. *J. Virol. 2020, 9; 94(23):e01630-20.*
2. Fang Q, Tang WC, **Tao P**, Mahalingam M, Fokine A, Rossmann MG, Rao VB*. Structural morphing in a symmetry-mismatched viral vertex. *Nat. Commun. 2020, 11(1):1713. doi: 10.1038/s41467-020-15575-4.*
3. Chen Y, Yang L, Yang D, Song J, Wang Can, Sun E, Gu C, Chen H, Tong Y*, **Tao P***, Wu B*. Specific Integration of Temperate Phage Decreases the Pathogenicity of Host Bacteria. *Front. Cell. Infect. Microbiol. 2020, 10:14. doi: 10.3389/fcimb.2020.00014.*
4. **Tao P***, Zhu J, Mahalingam M, Batra H, Rao VB*. Bacteriophage T4 nanoparticles for vaccine delivery against infectious diseases. *Adv Drug Deliv Rev. 2019; 145:57-72.*
5. Chen Y, Batra H, Dong J, Chen C, Rao VB, **Tao P***. Genetic Engineering of Bacteriophages against Infectious Diseases. *Front Microbiol. 2019; 10:954.*
6. **Tao P**, Rao VB*. Bacteriophage Vaccines. *Encyclopedia of Virology 4th edition.* 2019.
7. Zhu J, **Tao P**, Mahalingam M, Sha J, Kilgore P, Chopra AK, Rao V*. A prokaryotic-eukaryotic

hybrid viral vector for delivery of large cargos of genes and proteins into human cells. *Sci Adv. 2019, 5 (8), eaax0064*

8. **Tao P**, Mahalingam M, Zhu J, Moayeri M, Sha J, Lawrence WS, Leppla SH, Chopra AK*, Rao VB*. A Bacteriophage T4 Nanoparticle-Based Dual Vaccine against Anthrax and Plague. *mBio. 2018; 9(5). pii: e01926-18.*
9. **Tao P**, Wu X, Rao V*. Unexpected evolutionary benefit to phages imparted by bacterial CRISPR-Cas9. *Sci Adv. 2018; 4(2): eaar4134.* Reported by *Science.*
10. **Tao P*,** Wu X, Tang W, Zhu J, Rao VB*. Engineering of Bacteriophage T4 Genome Using CRISPR-Cas9. *ACS Synth Biol. 2017. doi: 10.1021/acssynbio.7b00179.*
11. **Tao P**, Li Q, Shivachandra SB, Rao VB*. Use of bacteriophage T4 as a nanoparticle platform to display and deliver pathogen antigens: construction of an effective anthrax vaccine. *Methods Mol Biol. 2017; 1581:255-267.*
12. **Tao P**, Mahalingam M, Zhu J, Moayeri M, Kirtley ML, Fitts EC, Andersson JA, Lawrence WS, Leppla SH, Chopra AK, Rao VB*. A Bivalent Anthrax – Plague Vaccine That Can Protect against Two Tier-1 Bioterror Pathogens, Bacillus anthracis and Yersinia pestis. *Front Immunol. 2017 8:687.*
13. **Tao P**, Mahalingam M, Rao VB*. Highly effective soluble and bacteriophage T4 nanoparticle plague vaccines against *Yersinia pestis. Methods Mol Biol. 2016; 1403:499-518.*
14. Dai L, Li Z, **Tao P*.** Evolutionary Analysis of Tembusu Virus: Evidence for the Emergence of a Dominant Genotype. *Infect Genet Evol. 2015, 32: 124-19.*
15. **Tao P**, Mahalingam M, Marasa BS, Zhang Z, Chopra AK, Rao VB*. In vitro and in vivo delivery of genes and proteins using the bacteriophage T4 DNA packaging machine. *PNAS. 2013, 110(15):5846-5851* Reported by *Nature SciBX: Science-Business eXchange*
16. **Tao P**, Mahalingam M, Kirtley ML, van Lier CJ, Sha J, Yeager LA, Chopra AK, Rao VB*. Mutated and bacteriophage T4 nanoparticle arrayed F1-V immunogens from *Yersinia pestis* as next generation plague vaccines. *PLoS Pathog. 2013, 9(7): e1003495.* Feature articles.
17. Rao VB*, **Tao P**, Mahalingam M, Marasa BS, Zhang Z, and Chopra AK. Delivery of vaccine genes and proteins into dendritic cells using the bacteriophage T4 DNA packaging machine (P3273). *Journal of Immunology. 2013, 190:192.22.*
18. **Tao P**, Luo M, Pan R, Ling D, Zhou S, Tien P and Pan Z*. Enhanced protective immunity against H5N1 influenza virus challenge by vaccination with DNA expressing a chimeric hemagglutinin in combination with an MHC class I-restricted epitope of nucleoprotein in mice. *Antiviral Res. 2009, 81(3):253-60.*
19. **Tao P,** Luo M, Zhu D, Qu S, Yang Z, Gao M, Guo D, Pan Z*. Virus-like particle vaccine comprised of the HA, NA, and M1 proteins of an avian isolated H5N1 influenza virus induces protective immunity against homologous and heterologous strains in mice. *Viral immunology. 2009, 22(4):273-281.*