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韩茵

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韩茵 (Han Yin): 女, 1970年生, 浙江宁波, 理学博士, 硕士生导师

主要研究方向: 从事海洋微生物学及海水养殖动物病原菌致病机制和疾病防治研究, 以及有益微生物的筛选, 作用机理和应用等。目前主要致力于致病菌的毒力基因与密度感应系统的相关性研究; 建立通过有益菌干扰病原菌的信号分子从而抑制病害的环境友好型防治措施。

一、学习与工作简历:

1988.09—1992.07: 中国海洋大学水产学院海水养殖专业本科生, 获学士学位;
1992.07—1998.09: 浙江省宁波海洋与水产研究院, 工程师;
1998.10—2000.09: 中国海洋大学海洋生命学院海洋生物系实验师;
2000.10—2002.09: 比利时根特大学生物科学工程学院, 水产科学专业, 获硕士学位;
2007.10—2011.11: 比利时根特大学生物科学工程学院, 应用生物科学专业, 获得博士学位;
2002.09—2013.12: 中国海洋大学海洋生命学院海洋生物工程系工程师;
2014.01—至今: 中国海洋大学海洋生命学院海洋生物工程系高级工程师;

二、近年来的部分主要研究课题:

2013.1-2014.12: 横向项目“仿刺参育苗、保苗综合技术及研发苗期复合饲料的合作开发” (20130216)。
2013.1-2014.12: 宁波科技局农村科技创新创业资金项目“应用密度感应微生物抑制剂防控南美白对虾养殖病害” (2013C910022)。
2011.1-2013.12: 国家自然科学基金项目“噪音对迟缓爱德华氏菌耐药性系统作用机理的研究” (31072241)。
2007.10-2011.10 中国海洋大学与比利时大学委员会合作发展项目“迟缓爱德华氏菌(Edwardsiella tarda)和美人鱼发光杆菌杀鱼亚种(Photobacterium damsela subsp. piscicida)的密度感应系统及其致病性相关研究”。
2008.12-2012.12: 国家 863 计划重点项目“迟钝爱德华氏菌毒力相关功能基因研究及疫苗开发” (2008AA092501)。
2009.01-2011.12: 国家自然科学基金委与香港研究资助局 (NSFC-RGC) 联合科研基金项目“弧菌毒力因子对鱼类细胞保护和细胞凋亡的作用研究” (30831160512)。
2009.01-2011.12: 国家自然科学基金项目“海洋拮抗菌假交替单胞菌JG1作用机理的研究” (40876067)。
2008.01-2010.12: 国家自然科学基金项目“哈维氏弧菌VHH溶血素作用机理的研究”。

2007.12-2010.12: 国家863计划项目“中国黄海微生物资源采集、保存和信息化技术”。

2006.01-2008.12: 国家自然科学基金项目“参、鲍采苗板微生物群落的动态变化与苗期病害的关系” (30500377)。

三、近年发表的主要科研论文:

1. Yang, Q., Han, Y*, Tinh, N.T.N., Hien, N.T and Bossier, P. (2012) Detection of Quorum Sensing Signal Molecules in Edwardsiella ictaluri Ei-151. Indian J Microbiol 52:581-586.
2. Han, Y., Yang, C. L., Yang, Q., Qi, Z., Liu, W. Z., Xu, Z. H., Zhu, W. M., Bossier, P. and Zhang, X.-H. (2011) Mutation of tryptophanase gene tnaA in Edwardsiella tarda reduces lipopolysaccharide production, antibiotic resistance and virulence. Environmental Microbiology Reports 3: 603-612.
3. Han, Y., Li, X., Qi, Z., Zhang, X.-H. and Bossier, P. (2010) Detection of different quorum sensing signal molecules in a virulent Edwardsiella tarda strain LTB-4. Journal of Applied Microbiology 108: 139-147.
4. 韩茵, 李永霞, 李杰, 唐磊, 祁自忠. 两种海洋细菌对海底沉积物微生物燃料电池产电效能及其阳极表面细菌群落的影响. 海洋科学进展, 2011, 29: 36-42.
5. Yang, Q., Han, Y., Zhang, X. H. (2011) Detection of quorum sensing signal molecules in the family Vibrionaceae. Journal of Applied Microbiology 110: 1438-1448.
6. Li, X., Han, Y., Yang, Q. and Zhang, X.-H. (2010) Detection of quorum-sensing signal molecules and mutation of luxS gene in Vibrio ichthyoenteri. Research in Microbiology 161:51-57.
7. He, Y., Xu, T., Han, Y., Shi, X. and Zhang, X. H. (2011) Phenotypic diversity of Edwardsiella tarda isolated from different origins. Letters in Applied Microbiology 53: 294-299.

8. Shoudong Guo, Wenjun Mao, Yin Han , Xiaohua Zhang, Chunli Yang, Yin Chen, Yanli Chen, Jian Xu, Hongyan Li, Xiaohui Qi , Jiachao Xu. (2010) Structural characteristics and antioxidant activities of the extracellular polysaccharides produced by marine bacterium Edwardsiella tarda. *Bioresource Technology* 101 : 4729–4732.
9. Zinan Xu, Ying Wang, Yin Han, Jixiang Chen and Xiao-Hua Zhang. (2011) Mutation of a novel virulence-related gene mltD in *Vibrio anguillarum* enhances lethality in zebra fish. *Research in Microbiology* 162:144-150.
10. 杨春丽, 韩茵, 王义, 张晓华, 朱伟明. (2010) 迟缓爱德华菌 (*Edwardsiella tarda*) 产生的二聚和三聚吲哚类生物碱. *微生物通报* 37(9):1325-1330.
11. 吕俊超, 李轩, 韩茵, 陈吉祥, 张晓华. (2009) 养殖大菱鲆中牙鲆肠弧菌的分离鉴定及组织病理学. *水产学报* 33(2): 311-317.
12. 白方方, 兰建新, 王燕, 韩茵, 张晓华. (2009) 迟缓爱德华氏菌间接ELISA快速检测法. *中国水产科学* 16(4):619-625.
13. 王燕, 张晓华, 吕俊超, 徐子男, 陈吉祥, 韩茵. (2009) 养殖大菱鲆病原菌迟缓爱德华氏菌的分离鉴定及其疫苗研制. *中国水产科学* 16(3):394-403.
14. Lan J, Zhang XH, Wang Y, Chen J, Han Y. (2008) Isolation of an unusual strain of *Edwardsiella tarda* from turbot and establish a PCR detection technique with the gyrB gene. *Journal of Applied Microbiology*.105: 644-651.
15. Bai, F., Han, Y., Chen, J. and Zhang, X.-H*. (2008) Disturbance the quorum sensing system of *Vibrio harveyi* by the AiiA protein of *Bacillus thuringiensis*. *Aquaculture* 274: 36-40.
16. 王燕, 韩茵, 李筠, 陈吉祥, 张晓华. (2007) 半滑舌鳎病原菌(发光杆菌杀鱼亚种)的分离与鉴定。 *微生物学报* 47 (5) : 763-768.
17. 白方方, 张晓华, 韩茵, 陈吉祥. (2007) 几种海洋弧菌的密度感应系统及其信号干扰。 *海洋科学集刊* 48(5): 153-165.
- 四. 教学工作概况
1998年9月至2000年, 承担中国海洋大学海洋生命学院本科生的细胞工程, 细胞工程实验课程和动物生理实验课程的教学任务。
2002年10月至今, 承担中国海洋大学海洋生命学院本科生的饲料生物学、微生物学以及海洋微生物学的教学任务。
参编《海洋微生物学》, 青岛: 中国海洋大学出版社, 2007年12月出版。
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对同学的期望语: 潜能在压力下进发, 其实你很优秀!

Curriculum Vitae

Dr. Yin HAN

Lab of Marine Microbiology

College of Marine Life Sciences, Ocean University of China,

5 Yushan Road, Qingdao 266003, P. R. China

e-mail : hanyin@ouc.edu.cn

Education

1988 -1992 Bachelor of Science in Marine Aquaculture

College of Fisheries, Ocean University of China, College of Fisheries

Thesis: "The effects of different antibiotics on the preventing diseases in *Penaeus chinensis* larval culture and the bacterial analysis in rearing water"

2000-2002 Master of Science in Aquaculture, which was supported by a VLIR scholarship

Faculty of Bioscience Engineering, Ghent University

Thesis: "Characterization of a nitrifying mixed culture for use in aquaculture" performed at the laboratory of Microbial Ecology and Technology.

Promoter: Professor Willy Verstraete.

2007-2011 Doctor of Bioscience Engineering, which was supported by a VLIR scholarship

Faculty of Bioscience Engineering, Ghent University

Thesis: "Involvement of quorum sensing in the virulence of *Edwardsiella tarda* towards cultured marine fish".

Promoter: Professor Peter Bossier

Professional record

1992-1998

Research assistant in Marine Aquaculture, Ningbo Academy of Ocean and Fishery, Zhejiang Province.

Participated in large-scale culture of microalgae in the hatchery of *Penaeus japonicus*.

Participated in the hatchery of *Penaeus chinensis*, in charge of living food production, water quality control, eggs incubation and larvae rearing, etc.

Participated in research project "Monitoring the aquaculture water quality in Xiangshan Bay, Zhejiang province".

Participated in research project "Application of marine photosynthetic bacteria in aquaculture".

Participated in research project "Investigation and control of bacterial diseases in *Scylla serrata*".

Participated in technical management of shrimp culture.

1998-2000

College of Marine Life Sciences, Ocean University of China

Lecturer in Cell Bioengineering and practical exercises of Animal Physiology for undergraduate students.

Research assistant in fish cell line culture.

2002-2007

College of Marine Life Sciences, Ocean University of China

Lecturer in Living food production for undergraduate students.

Collaborator in 3 NSFC projects (National Natural Sciences Foundations of China) "The relationship of disease with the composition and dynamics of microbial communities on sea cucumber and abalone seeds settlement plates", "Study on the mechanism of sexual development in *Porphyra*" and "Study on the composition and dynamics of zooplankton which feed algae of red tide in cultured water

area".

2011-present

Lecturer in Living Food Production, Microbiology and Marine Microbiology for undergraduate students.

Coordinator in Enterprise projects "Use of probiotics for the hatchery and culture of sea cucumber Apostichopus japonicas" and "Quorum quenching as a novel tool to control vibriosis in the intensive culture of shrimp Penaeus vannamei"

Coordinator in NSFC project "Study on the mechanism of indole signalling in multi-antimicrobial resistance of Edwardsiella tarda".

Collaborator in 4 NSFC projects "Studies on haemolysins in *Vibrio* species", "Studies on the pathogenicity mechanisms of *Vibrio harveyi* VHH haemolysin", "Studies on the mechanisms of marine antagonism *Pseudoalteromonas* sp. JG1", and "Elucidation of the role played by *Vibrio* virulence factors on cytoprotection and apoptosis in fish cells".

Collaborator in 2 Projects from the National High Technology Research and Development Program of China (863 Program)

"Collection, preservation and information technology of microorganisms from Yellow Sea of China" and "Studies on the virulence related genes of Edwardsiella tarda and the development of its vaccine".

Collaborator in the Key Project of Chinese Ministry of Education "Studies on a virulent-related plasmid of *Vibrio harveyi*".

International collaboration

Collaborator in joint research project (MOST/China-FWO/Flemish)"Quorum quenching as a novel tool to fight bacterial infections in aquaculture"

Publications in the recent years:

1. Yang, Q., Han, Y*, Tinh, N.T.N., Hien, N.T and Bossier, P. (2012) Detection of Quorum Sensing Signal Molecules in Edwardsiella ictaluri Ei-151. Indian J Microbiol 52:581-586.

2. Han, Y., Yang, C. L., Yang, Q., Qi, Z., Liu, W. Z., Xu, Z. H., Zhu, W. M., Bossier, P. and Zhang, X. H. (2011) Mutation of tryptophanase gene tnaA in Edwardsiella tarda reduces lipopolysaccharide production, antibiotic resistance and virulence. Environmental Microbiology Reports 3: 603-612.

3. Han, Y., Li, Y. X., Li, J., T. L., Qi, Z (2011) The Influences of two marine bacteria to the bacterial community compositions of the anode and the electricity production efficacy of marine benthic microbial fuel cell. Advances in Marine Science 29: 36-42. (CHN)

4. He, Y., Xu, T., Han, Y., Shi, X. and Zhang, X. H. (2011) Phenotypic diversity of Edwardsiella tarda isolated from different origins. Letters in Applied Microbiology 53: 294-299.

5. Yang, Q., Han, Y. and Zhang, X. H. (2011) Detection of quorum sensing signal molecules in the family Vibrionaceae. Journal of Applied Microbiology 110: 1438-1448.

6. Xu, Z. N., Wang, Y., Han, Y., Chen, J. and Zhang, X. H. (2011) Mutation of a novel virulence-related gene mltD in *Vibrio anguillarum* enhances lethality in zebra fish. Research in Microbiology 162:144-150.

7. Han, Y., Li, X., Qi, Z., Zhang, X. H. and Bossier, P. (2010) Detection of different quorum sensing signal molecules in a virulent Edwardsiella tarda strain LTB-4. Journal of Applied Microbiology 108: 139-147.

8. Li, X., Han, Y., Yang, Q. and Zhang, X.-H. (2010) Detection of quorum-sensing signal molecules and mutation of luxS gene in *Vibrio ichthyoenteri*. Research in Microbiology 161:51-57.

9. Guo, S. D., Mao, W. J., Han, Y., Zhang, X. H., Yang, C. L., Chen, Y., Chen, Y. L., Xu, J., Li, H. Y., Qi, X. H., Xu, J. C. (2010) Structural characteristics and antioxidant activities of the extracellular polysaccharides produced by marine bacterium Edwardsiella tarda. Bioresource Technology 101: 4729-4732.

10. Bai, F., Han, Y., Chen, J. and Zhang, X. H. (2008) Disturbance the quorum sensing system of *Vibrio harveyi* by the AiiA protein of *Bacillus thuringiensis*. Aquaculture 274: 36-40.

11. Yang, C. L., Han, Y., Wang, Y., Zhang, X. H. and Zhu, W. M. (2010) Bis-and Tris-indole alkaloids from Edwardsiella tarda. Microbiology China 37(9):1325-1330. (CHN)

12. Lv, J. C., Li, X., Han, Y., Chen, J. and Zhang, X. H. (2009) Isolation and identification of *Vibrio ichthyoenteri* in farmed turbot (*Scophthalmus maximus*)and histopathology study of the diseased fish. Journal of Fisheries of China 33(2): 311-317. (CHN)

Research theme

Work in our laboratory focused on the qualitative and quantitative description of opportunistic pathogens and investigations of microbial processes in live food production in aquaculture, novel symbiotic strategies for disease control, the selection and application of beneficial bacteria—probiotics. My research focuses on the understanding of the mechanisms controlling signal transduction systems involved in bacterial development. I am particularly interested acyl-homoserine lactone signals, indole signal in opportunistic pathogens in aquaculture, such as Edwardsiella tarda, *Vibrio anguillarum* and *Vibrio harveyi*. The major aim is to solve important problems in bacterial mechanotransduction related to pathogenesis and antibiotics resistance in bacterium, which is a novel tool to fight bacterial infection in aquaculture.

Research interests: Bacterial Signal transduction; bacterial pathogen; Gene regulation; probiotics

