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Research progress of *Helicobacter pylori* genomics in China

In the last three years there has been a dramatic increase of genomic sequences for *Helicobacter pylori* (*H.pylori*) in the GenBank genomics database (46 completed and 189 draft, till 16th May, 2013). More and more studies focus on investigation of potential molecular genetics mechanism based on the large amount of genome sequences.

We have previously used a high density tiling microarray to explore genomic features of strains isolated from patients with different gastro duodenal diseases in China, and found series differential regions that would be probably contributed to various clinical outcomes. To confirm these initial results, also to extend our knowledge of *H.pylori* genomics, we have finished whole genome sequencing of dozens of strains isolated from different geographic areas of China by using Illumina HiSeq 2000. Paired-end libraries (500 bp and 2 kb) were generated and more than 100 Mb of high-quality data were obtained for all strains. Finally, the paired-end reads from the two libraries were de novo assembled into scaffolds. Gene prediction and annotation, as well as a preliminary comparative genomics and population structure analysis were performed to understand potential microevolution correlated with geography and ethics. Since these isolates were recovered from gastric cancer, ulcer and gastritis patients respectively. The comprehensive comparisons of genomes from different diseases were also done. These strains were shown have a high genomic diversity compared to isolates involved in chronic superficial gastritis and gastric cancer in the previous studies.

Biography

Jianzhong Zhang is the Director of Public Health Branch of the Chinese Medical Association, member of advisory committee of national public health emergency, member of the national food safety risk assessment expert committee, vice chairman of the human ecology and ecological health professional committee of China Association of Ecology, vice chairman of infectious disease control and prevention expert committee of MoH, committee member of academic committee on the bacterial drug resistance monitoring. Chief of the Department of Communicable Disease Diagnostics (DCDD), Deputy director of the National Institute for Communicable Disease Control and Prevention, Chinese Center for Disease Control and Prevention. PI of Collaborative Innovation Center for Diagnosis and Treatment of Infectious Diseases, State Key Laboratory for Infectious Disease Prevention and Control. The main research fields are the pathogenic infection and diagnosis technology study.

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