Accurate HLA Typing at High-Digit Resolution from NGS Data

Authors : Yazhi Huang, Jing Yang, Dingge Ying, Yan Zhang, Vorasuk Shotelersuk, Nattiya Hirankarn, Pak Chung Sham, Yu Lung Lau, Wanling Yang

Abstract : Human leukocyte antigen (HLA) typing from next generation sequencing (NGS) data has the potential for applications in clinical laboratories and population genetic studies. Here we introduce a novel technique for HLA typing from NGS data based on read-mapping using a comprehensive reference panel containing all known HLA alleles and de novo assembly of the gene-specific short reads. An accurate HLA typing at high-digit resolution was achieved when it was tested on publicly available NGS data, outperforming other newly-developed tools such as HLAminer and PHLAT.

Keywords : human leukocyte antigens, next generation sequencing, whole exome sequencing, HLA typing
Conference Title : ICMBB 2015 : International Conference on Molecular Biotechnology and Bioinformatics
Conference Location : Singapore, Singapore
Conference Dates : March 29-30, 2015