

The application and strategies of NGS in Plant genome study

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Recent advances in sequencing technologies bring us a deluge of genomes study, providing cost and time savings. However, many challenges are still ahead for the plant community, because of the complexity of plant genomes. Several barriers prevent the assembly of short read sequencers in *de novo* genome projects, such as large genome size fraught with repetitive and transposable elements, high level of heterozygosity and ploidy. In this presentation, Dr Zhao will discuss the progresses that have been made in International Wheat sequencing projects, the assembling strategies used in the large and complex genomes and the application of NGS technology application in Genome-wide Population study and Transcriptome study. Specific focus will be given to

1. Toward complex genome sequencing: the wheat A&D genome sequencing projects;
2. Application of Genome-wide Sequencing In Panda Populations
3. Analyze the genome, transcriptome and miRNAs in plants

Publication (* Co-first author)

1. Gao, Z. Y., **S. Zhao***, et al. (2013). "Dissecting yield-associated loci in super-hybrid rice by resequencing recombinant inbred lines and improving parental genome sequences." **Proc Natl Acad Sci** (in press).
2. Ling, H. Q., **S. Zhao***, et al. (2013). "Draft genome of the wheat A-genome progenitor *Triticum urartu*." **Nature** 496(7443): 87-90.
3. Jia, J., **S. Zhao***, et al. (2013). "*Aegilopstauschii* draft genome sequence reveals a gene repertoire for wheat adaptation." **Nature** 496(7443): 91-95.
4. **Zhao, S.***, P. Zheng, et al. (2013). "Whole-genome sequencing of giant pandas provides insights into demographic history and local adaptation." **Nat Genet** 45(1): 67-71.
5. Varshney, R. K., C. Song, ..., **S. Zhao**, et al. (2013). "Draft genome sequence of chickpea (*Cicer arietinum*) provides a resource for trait improvement." **Nat Biotechnol** 31(3): 240-246.
6. Li, R., W. Fan, ..., **S. Zhao**, et al. (2010). "The sequence and de novo assembly of the giant panda genome." **Nature** 463(7279): 311-317.

