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Genetic Diversity of the Rice Grain Gene (*Gn1a*) Using Genotyping Array

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[Introduction]
The rice grain number 1a gene (*Gn1a*) is a regulator that plays a role in grain production. Using 4835 accessions DNA chip data, we identified genetic diversity of *Gn1a* by using the variants, and the allelic and genic differentials between populations.

[Materials and Methods]
A total of 4835 rice samples were collected from the world, we used IRGSP 1.0 as a reference genome for variation calling of those samples, including cultivar 3769 accessions, landrace 304 accessions, weedy 522 accessions and wild 240 accessions, identified the DNA genotyping chip containing 581,006 markers and 620,852 probes to detect nucleotide variants (SNPs / indels) as well as the absence/presence of genes. The haplotyping of *Gn1a* were purified from genotyping array.

[Results and Discussion]
Total of 4835 accessions had 209 haplogroups. Our analysis of the *Gn1a* mutation information found that a large number of mutations exist in *Gn1a*. These results suggest that the *Gn1a* gene could be potential candidate marker for rice functional research and breeding.

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