

**Supplementary Table 2. Quantity table of SNPs after different hard filter**

Filter Condition	SNP Number
QD < 2.0    MQ < 40.0    FS > 60.0    SOR > 5.0    MQRankSum < -12.5    ReadPosRankSum < -8.0    QUAL < 30 --min-alleles 2 --max-alleles 2	383,137,982
80% genotyping rate; MAF >= 0.05	32,334,340