```
                          ┌─────────────────────┐
                          │  Raw Data           │
                          │  185 samples        │
                          └─────────────────────┘
                                    │ SNP QC
                          ┌─────────────────────┐
                          │ 167 samples included │
                          └─────────────────────┘
                                    │ Birdsuite running
                          ┌──────────────────────────────┐
                          │ CNP calls (Canary results)    │
                          │ rare CNV calls (Birdseye results) │
                          └──────────────────────────────┘
           Birdseye QC                      Canary QC
┌─────────────────────────────┐   ┌────────────────────────────────────────┐
│ Segments with low quality removed │ │ Callings with low quality coded as missing data │
│ Samples with excessive CNVs removed │ │ Replicated samples with relative low call rate removed │
└─────────────────────────────┘   └────────────────────────────────────────┘

            Removing inconsistent calls between Birdseye and Canary

                          ┌──────────────────────────────────┐
                          │ Totally 155 samples with 21,997 CNV events │
                          └──────────────────────────────────┘
                                    │ Merging overlapping CNVs
                          ┌──────────────────────────┐
                          │ CNV map with 1,440 CNVRs  │
                          └──────────────────────────┘
```

QC filter		
SNP	Canary	Birdseye
The samples with calling rate <0.86 were removed after running apt-geno-qc	Callings with confidence >=0.1 were removed	Segments which did not meet the following criterias were removed: LOD score>=5 number of markers >=3 size <1,000 bp