

a.

```

Marker, sample01, sample02, sample03, ...
c2_41437, AAAG, AAGG, AAGG, ...
c2_24258, AAGG, AGGG, GGGG, ...
c2_21332, TTCC, TTCC, TTCC, ...

```

b.

```

Marker, Chrom, Pos, sample01, sample02, sample03, ...
c2_41437, 0, 805179, AAAG, AAGG, AAGG, ...
c2_24258, 0, 1252430, AAGG, AGGG, GGGG, ...
c2_21332, 0, 3499519, TTCC, TTCC, TTCC, ...

```

c.

```

##fileformat=VCFv4.2
##FORMAT=<ID=GT,Number=1,Type=String,Description="Genotype">
#CHROM POS ID REF ALT QUAL FILTER INFO FORMAT sample01 sample02 sample03
0 805179 c2_41437 A G . . PR GT 0/1/1/0 0/1/1/0 0/1/0/0
0 1252430 c2_24258 G A . . PR GT 0/1/0/0 0/1/1/0 0/0/1/0
0 3499519 c2_21332 T C . . PR GT 0/1/1/0 0/1/1/1 0/1/1/0

```

d.

```

Individual,Trait
sample01, 3.59
sample02, 4.07
sample03, 1.05

```