

Table S1 Detailed information of hidden states in PSHMM

State (s)	Copy number (n)	Genotype	u_k	Description
1	0	N/A	0.5	Deletion of two copies
2	1	(A,B)	(0,1)	Deletion of one copy
3	2	(AA,AB,BB)	(0,0.5,1)	Normal
4	2	(AA,BB)	(0,1)	Copy neutral with LOH
5	3	(AAA,AAB,ABB,BBB)	(0,1/3,2/3,1)	Three copies with duplication of one allele
6	3	(AAA,BBB)	(0,1)	Three copies with LOH
7	4	(AAAA,AAAB,ABBB,BBBB)	(0,1/4,3/4,1)	Four copies with duplication of one allele
8	4	(AAAA,AABB,BBBB)	(0,0.5,1)	Four copies with duplication of both alleles
9	4	(AAAA,BBBB)	(0,1)	Four copies with LOH
10	5	(AAAAA,AAAAB,ABBBB,BBBBB)	(0,1/5,4/5,1)	Five copies with duplication of one allele
11	5	(AAAAA,AAABB,AABBB,BBBBB)	(0,2/5,3/5,1)	Five copies with duplication of both alleles
12	5	(AAAAA,BBBBB)	(0,1)	Five copies with LOH
13	6	(AAAAAA,AAAAB,ABBBB,BBBBB)	(0,1/6,5/6,1)	Six copies with duplication of one alleles
14	6	(AAAAAA,AAAABB,AABBB,BBBBB)	(0,2/6,4/6,1)	Six copies with duplication of both alleles
15	6	(AAAAAA,AAABBB,BBBBB)	(0,0.5,1)	Six copies with duplication of both alleles
16	6	(AAAAAA,BBBBB)	(0,1)	Six copies with LOH
17	7	(AAAAAAA,AAAAB,ABBBB,BBBBB)	(0,1/7,6/7,1)	Seven copies with duplication of one alleles
18	7	(AAAAAAA,AAAABB,AABBB,BBBBB)	(0,2/7,5/7,1)	Seven copies with duplication of both alleles
19	7	(AAAAAAA,AAAABBB,AAABBB,BBBBB)	(0,3/7,4/7,1)	Seven copies with duplication of both alleles
20	7	(AAAAAAA,BBBBB)	(0,1)	Seven copies with LOH