















Table S14 Transpose of the recursion matrix for calculating probabilities of two-locus autosomal diplotypes of the form $AA|BB$, in the generation of four-way RIL by sibling mating

State at $k + 1$	State at k							
1 	2: $\frac{(1-r)^2}{2}$	3: $\frac{r(1-r)}{2}$	4: $\frac{r(1-r)}{2}$	5: $\frac{r^2}{2}$				
2 	1: $\frac{(1-r)^2}{2}$	2: $\frac{(1-r)^2}{2}$	3: $\frac{r(1-r)}{2}$	4: $\frac{r(1-r)}{2}$	5: $\frac{r^2}{2}$	6: $\frac{r^2}{2}$		
3 	7: $\frac{1-r}{4}$	8: $\frac{r}{4}$						
4 	9: $\frac{1-r}{4}$	10: $\frac{r}{4}$						
5 	11: $\frac{1}{8}$	12: $\frac{1}{8}$	13: $\frac{1}{8}$	14: $\frac{1}{8}$				
6 	12: $\frac{(1-r)^2}{2}$	13: $\frac{r(1-r)}{2}$	14: $\frac{r^2}{2}$					
7 	2: $\frac{1-r}{2}$	3: $\frac{1-r}{2}$	4: $\frac{r}{2}$	5: $\frac{r}{2}$	7: $\frac{1-r}{4}$	8: $\frac{r}{4}$		
8 	9: $\frac{r}{4}$	10: $\frac{1-r}{4}$	12: $\frac{1-r}{2}$	13: $\frac{1}{4}$	14: $\frac{r}{2}$			
9 	2: $\frac{1-r}{2}$	3: $\frac{r}{2}$	4: $\frac{1-r}{2}$	5: $\frac{r}{2}$	9: $\frac{1-r}{4}$	10: $\frac{r}{4}$		
10 	7: $\frac{r}{4}$	8: $\frac{1-r}{4}$	12: $\frac{1-r}{2}$	13: $\frac{1}{4}$	14: $\frac{r}{2}$			
11 	2: $\frac{1}{8}$	3: $\frac{1}{8}$	4: $\frac{1}{8}$	5: $\frac{1}{8}$	12: $\frac{1}{8}$	13: $\frac{1}{8}$	14: $\frac{1}{8}$	
12 	1: $\frac{r^2}{2}$	6: $\frac{(1-r)^2}{2}$	12: $\frac{(1-r)^2}{2}$	13: $\frac{r(1-r)}{2}$	14: $\frac{r^2}{2}$			
13 	7: $\frac{r}{4}$	8: $\frac{1-r}{4}$	9: $\frac{r}{4}$	10: $\frac{1-r}{4}$				
14 	2: $\frac{1}{8}$	3: $\frac{1}{8}$	4: $\frac{1}{8}$	5: $\frac{1}{8}$	11: $\frac{1}{8}$			