

**Supplementary Table 3.** Conditional probability  $P(b_{ij} | e_{ij}g_i)$  of read  $b_{ij}$  given true genotype  $g_i$ , and read error  $e_{ij}$

True Genotype $g_i$	Base Calling Error Event $e_{ij}$	$\Pr(b_{ij} = A)$	$\Pr(b_{ij} = B)$	$\Pr(b_{ij} = E)^b$
$g_i = AA^a$	$e_{ij} = 0$	1	0	0
	$e_{ij} = 1$	0	1/3	2/3
$g_i = AB^a$	$e_{ij} = 0$	1/2	1/2	0
	$e_{ij} = 1$	1/6	1/6	2/3
$g_i = BB^a$	$e_{ij} = 0$	0	1	0
	$e_{ij} = 1$	1/3	0	2/3

<sup>a</sup>AA, AB, BB: A allele homozygote, heterozygote, and B allele homozygote

<sup>b</sup>E: alleles other than A or B; assumes four possible alleles (bases)

(from Jun, G. et al. Detecting and Estimating Contamination of Human DNA Samples in Sequencing and Array-Based Genotype Data. *The American Journal of Human Genetics*, Vol. 91 839-848 (2012).)