

TABLE 1

Calculation of the number of stem cells which could contain a certain number of mutations occurring either randomly throughout the genome, or restricted to cancer-associated genes, based upon the spontaneous mutation rate

"x" mutations	Stem cells containing "x" mutations	
	Random (genome-wide)	Cancer-associated genes
1	1.47×10^9	7.98×10^6
2	7.35×10^8	7.98×10^3
3	2.45×10^8	5
6	2.04×10^6	
9	4.05×10^3	
12	3	

For these calculations, we have made the following assumptions: The spontaneous mutation rate for a gene is 2×10^{-7} per gene per division; stem cells divide 100 times in lifetime; the number of stem cells in the body is 4×10^9 ; a cell contains 5×10^4 genes, but 100 cancer-associated genes. Probabilities were calculated by Poisson probability distribution. Populations were determined by multiplication of the probability by the number of stem cells.