



Figure S1 Distribution of total DSB (A), simple DSB (B) and complex DSB (C) in different type of proportions of simple DSB at IR-dose of **0.3 Gy**.

The distribution of total DSB was calculated from 100,000 samples following Poisson distribution with mean value of $35 \times \text{IR-dose}$. Simple and complex DSBs were calculated from total DSB. The proportion of simple DSB was fixed to 0.7 (red), normal random number whose mean value is 0.7 (green) or uniform random number between 0.6 and 0.8 (blue).