

**S2 Table.** Fitting coefficients of the comet distributions.

Time (min)	Alpha particles		X-rays		Mixed beams	
	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>
0	$1.73 \pm 0.07$	$7.1 \pm 0.2$	$1.99 \pm 0.06$	$12.7 \pm 0.3$	$2.5 \pm 1.0$	$18.6 \pm 0.4$
15	$1.55 \pm 0.03$	$6.69 \pm 0.09$	$1.64 \pm 0.06$	$8.2 \pm 0.3$	$2.42 \pm 0.10$	$13.1 \pm 0.3$
30	$1.46 \pm 0.03$	$5.28 \pm 0.09$	$1.57 \pm 0.06$	$7.4 \pm 0.2$	$2.12 \pm 0.08$	$12.1 \pm 0.3$
60	$1.46 \pm 0.06$	$5.64 \pm 0.18$	$1.64 \pm 0.04$	$5.81 \pm 0.12$	$2.07 \pm 0.07$	$11.7 \pm 0.3$
120	$1.52 \pm 0.03$	$5.38 \pm 0.07$	$1.65 \pm 0.05$	$5.73 \pm 0.12$	$2.15 \pm 0.06$	$9.94 \pm 0.18$
180	$1.25 \pm 0.04$	$4.18 \pm 0.12$	$1.21 \pm 0.05$	$5.4 \pm 0.2$	$1.88 \pm 0.06$	$9.9 \pm 0.2$