

## Supplementary Information

**Table S1.** The viability ( $\text{RLU} \times 10^3$ ) of BMMNCs 18 h after exposure to radiation.

XBJ ( $\mu\text{L/mL}$ )	0 Gy	1 Gy	4 Gy
0	$77 \pm 4$	$57 \pm 1$	$41 \pm 1$
1	$89 \pm 5^{**}$	$61 \pm 1^{**,\#}$	$47 \pm 3^{*,\#}$
5	$88 \pm 2^*$	$57 \pm 2^{##}$	$42 \pm 2^{##}$
10	$79 \pm 2$	$50 \pm 3^{##}$	$38 \pm 2^{##}$
25	$64 \pm 2^*$	$40 \pm 2^{**,\#}$	$33 \pm 1^{**,\#}$
50	$37 \pm 2^{**}$	$26 \pm 1^{##}$	$23 \pm 1^{**,\#}$
100	$15 \pm 1^{**}$	$14 \pm 0^{**,\#}$	$12 \pm 0^{**,\#}$
200	$4 \pm 0^{**}$	$3 \pm 0^{**,\#}$	$3 \pm 0^{**,\#}$

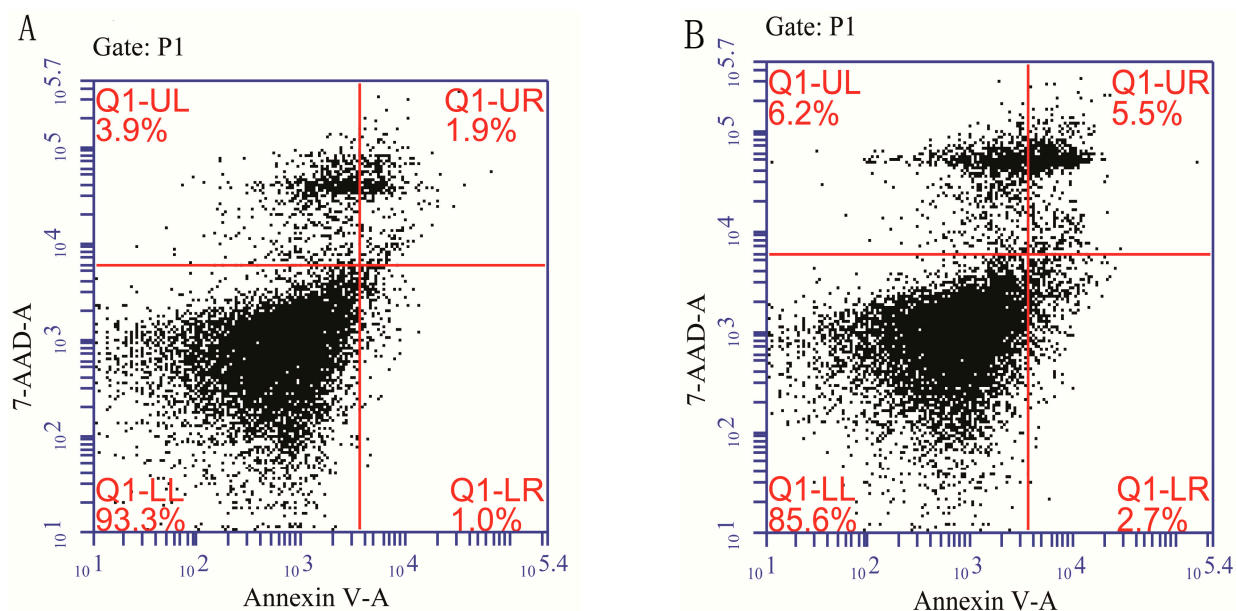
Bone marrow mononucleated cells were exposed to 0, 1 and 4 Gy of radiation after treatment with XBJ for 0.5 h. The viability of the cells was determined at 6 h after radiation exposure. The data are expressed as the means  $\pm$  SEM ( $n = 4$  for each group). \*  $p < 0.05$ , \*\*  $p < 0.01$  vs. control group; #  $p < 0.05$ , ##  $p < 0.01$  vs. the IR alone group.

**Table S2.** The ROS levels of BMMNCs 6 h after exposure to radiation.

XBJ ( $\mu\text{L/mL}$ )	0 Gy	1 Gy	4 Gy
0	$3429 \pm 44$	$3494 \pm 104$	$3564 \pm 56$
1	$3584 \pm 75$	$3488 \pm 116$	$3249 \pm 111^*$
5	$3232 \pm 41^*$	$3842 \pm 157^{*,\#}$	$4291 \pm 135^{**,\#}$
10	$3142 \pm 83^*$	$3330 \pm 129$	$3518 \pm 12^{\#}$
25	$2711 \pm 24^{**}$	$2927 \pm 51^{**,\#}$	$3346 \pm 79^{*,\#}$

Bone marrow mononucleated cells were exposed to 0, 1 and 4 Gy irradiation after treated with XBJ for 0.5 h. Then, the ROS levels of cells were detected by flowcytometry at 6 h after irradiation exposure. The data were expressed as mean  $\pm$  SEM ( $n = 3$  for each group). \*  $p < 0.05$ , \*\*  $p < 0.01$  vs. the control group; #  $p < 0.05$ , ##  $p < 0.01$  vs. the IR alone group.

**Figure S1.** Representative graph for apoptosis analysis. Mice were treated with i.p. injection of the vehicle or XBJ after exposure to 2 Gy TBI, as described in the Experimental Section. BMMNCs were collected from the mice after euthanization nine days after 2 Gy TBI and incubated with FITC-Annexin V and 7-AAD, as per the manufactures instructions. Then, the BMMNCs were detected by flowcytometry and analyzed by the requisite software. (A) Apoptosis of control cells; (B) apoptosis of |IR cells.



**Figure S2.** Representative ROS measurement. Mice were treated with i.p. injection of the vehicle or XBJ after exposure to 2 Gy TBI, as described in the Experimental Section. BMMNCs were collected from the mice after euthanization nine days after 2 Gy TBI and incubated antibodies, such as biotin-lineage (CD5, B220, Ter-119, CD11b, Gr-1), APC-c-kit, PE-cy7-Sca-1 and streptavidin-APC-cy7, as per the manufactures' instructions. Then, the cells were detected by flowcytometry and analyzed by the requisite software. (A) Bone marrow mononucleated cells (gated); (B) adhesion cells removal; (C) lineage negative cells gated; (D) HSC and HPC gated; (E) representative HSC ROS detection; (F) representative HPC ROS detection.

