Supplementary figure 1. The percentage of infiltrating CD8 T cells and the expression level of immune-related genes was higher in MC-38 tumors than that in LL/2 tumors. (A) Gating strategy for flow-cytometry analysis of the live cells, CD45+ cells, Lymphocytes, CD4+ T cells, CD8+ T cells, MDSCs, TAMs, Tregs, CD8+IFN-γ+ T cells and PD-1+TIM-3+ T cells. (B) Representative plots of percentages of CD8+IFN-γ+ T cells and PD-1+TIM-3+ (gating CD45+ CD8+ cells) which were analyzed by flow cytometry. (C) Heatmaps of differential immune-related gene between MC-38 tumors and LL/2 tumors, including markers of immune cell populations and genes involved in immune activation, immune suppression, cell adhesion and inflammation (n=3).
Supplementary figure 2. Individual growth of irradiated and non-irradiated tumors in mice bearing (A) MC-38 tumors (n=6), (B) E.G7-OVA tumors (n=5), (C) LL/2 tumors (n=6) and (D) B16-F10 tumors (n=7).
Supplementary figure 3. The percentages of CD8 T cells (gating CD45<sup>+</sup> cells) in the tumor microenvironment of MC38 tumors and LL/2 tumors. (A-B) Representative plots of percentages of CD8 T cells were presented in irradiated and non-irradiated tumors of MC38 tumor model (A) and LL/2 tumor model (B). Representative plots of percentages of CD8<sup>+</sup>IFN-γ<sup>+</sup> T cells (gating CD3<sup>+</sup>CD8<sup>+</sup> cells) in irradiated and non-irradiated tumors of MC38 tumor model (C) and LL/2 tumor model (D). * <i>p</i>&lt;0.05, ** <i>p</i>&lt;0.01, *** <i>p</i>&lt;0.001.
Supplementary figure 4. The percentages of T cells subsets in tumor draining lymph nodes (TDLNs) and B16-F10 tumors. (A-B) Percentages of CD8 T cells, CD4 T cells and Tregs in TDLNs derived from (A) MC-38 models and (B) LL/2 models. (C) Percentages and absolute numbers of CD8 T cells were presented in irradiated and non-irradiated B16-F10 tumors. IR: irradiated sides; Non IR:
contralateral non-irradiated sides. Representative results from one of at least two independent experiments were shown. * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

**Supplementary figure 5.** Depletion of CD8 T cells in MC-38 tumors. Starting from the day before 15Gy radiation, 200 μg CD8 depleting antibody (clone 53.6.7) was intra-peritoneal injected every 4 days in mice bearing MC-38 tumors.
Supplementary figure 6. Distributions of 20 immune cells among irradiated tumors, non-irradiated tumors and control tumors in MC-38 model were estimated using the immuCellAI-mouse tool.