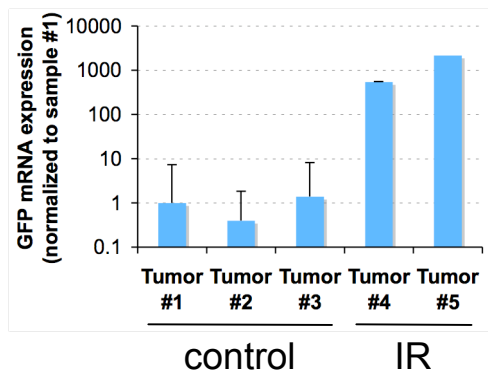
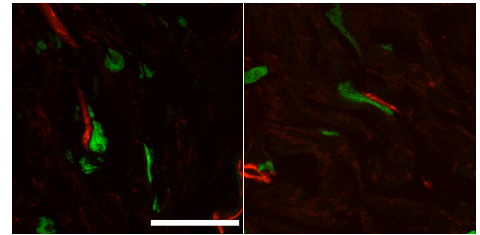
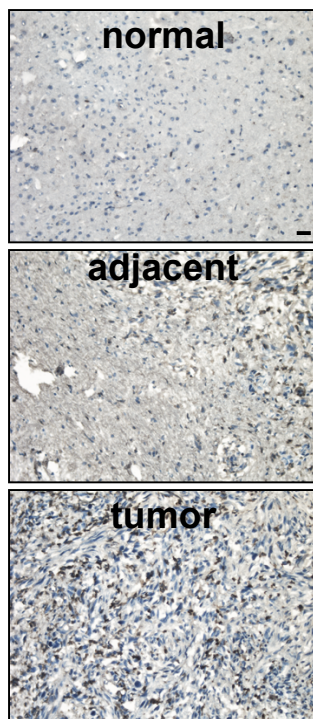
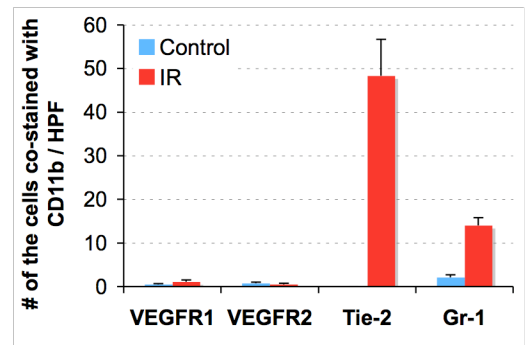
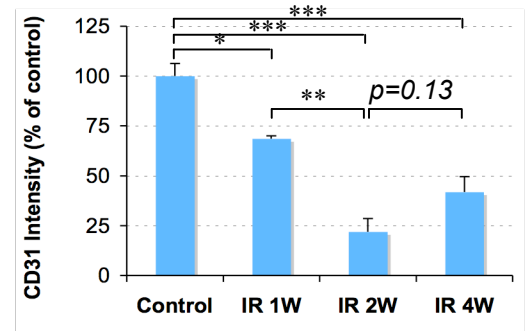
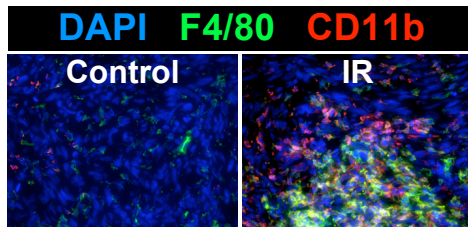
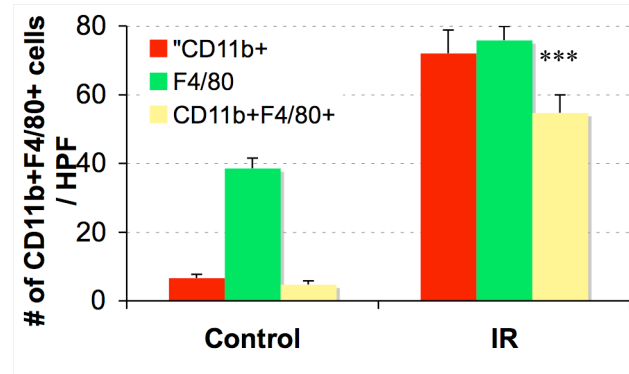


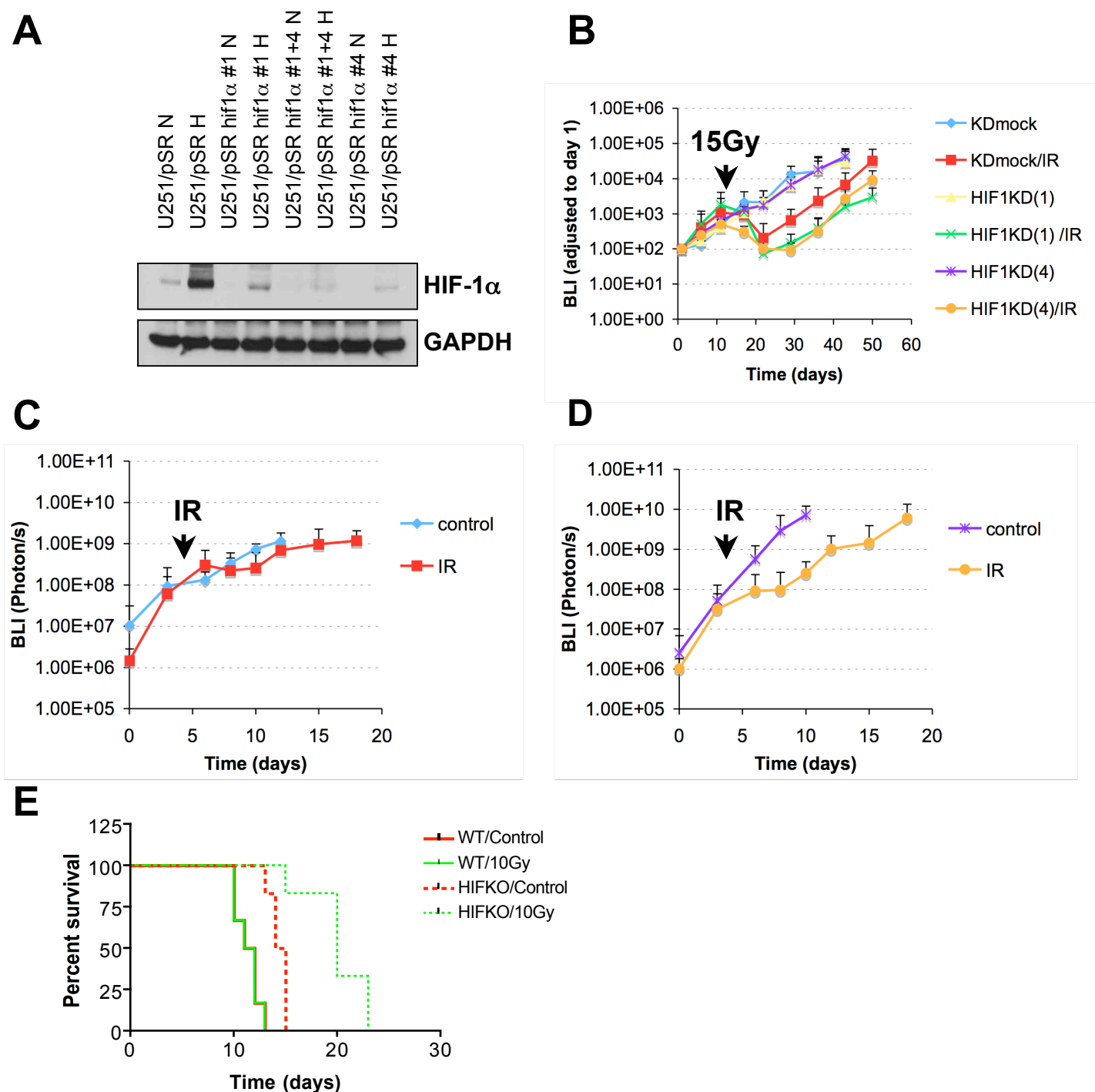
Supplemental Figure 1. Histology and MRI images of brain. A, U251 i.c. tumor in control group diffusively invades in the brain (left, arrows). Tumor was confirmed at the right brain on day 40 in control group (right, arrow). **B,** U251 tumor two weeks after 15 Gy of irradiation (left), and MRI images of tumor in the brain 52 days after irradiation (right, arrow). **C,** representative images of brain after treatment of irradiation and SDF-1 inhibition. U251 i.c. tumor is not shown in H&E stain (left). MRI images of brain 52 days after irradiation. Bar; 50 μ m.

A**B****C****D****E**

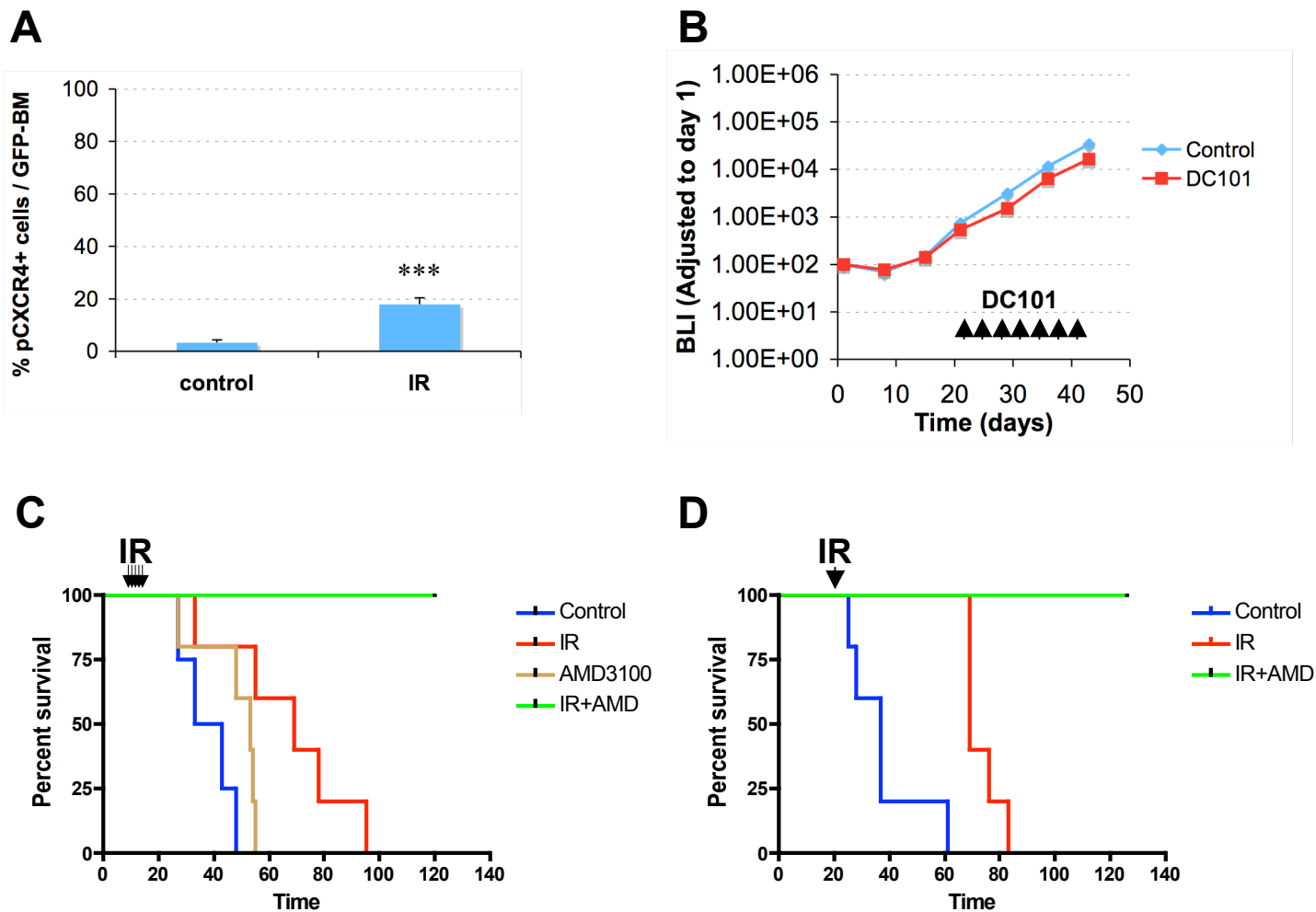
Supplemental Figure 2. **A**, quantitative analysis for mRNA expression of GFP-BMDCs in tumor-bearing brain before and after irradiation. **B**, confocal microscopic analysis. Red (CD31) and Green (GFP-BM) are associated but not co-localized. **C**, immunohistochemistry of CD11b⁺ cells in normal, adjacent normal, or tumor sections 2 weeks following 15 Gy. **D**, characterization of infiltrating CD11b⁺ cells into tumor before and after irradiation. Quantitation of positive staining for CD11b and other markers including VEGFR1, VEGFR2, Tie-2, or Gr-1 by immunohistochemistry. **E**, quantification of CD31⁺ endothelial cells in the tumors following irradiation. *p<0.05, **p<0.01, ***p<0.001. Bar; 50 μ m.

A**B**

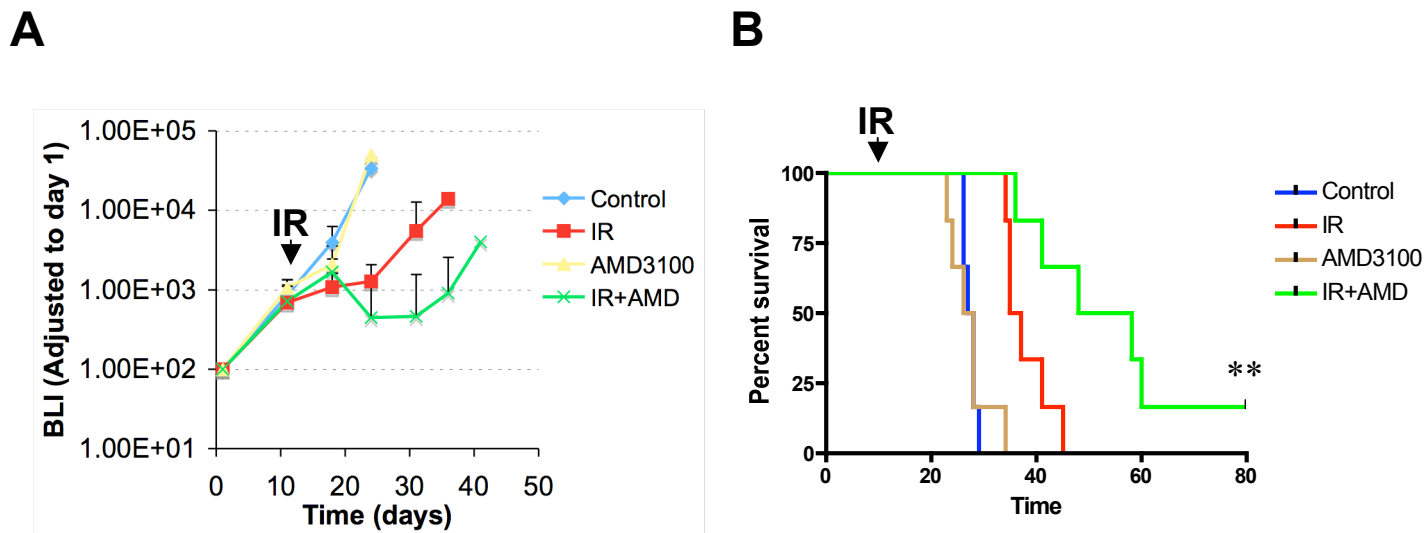
Supplemental Figure 3. A, IHC staining for F4/80 (green), CD11b (red), and DAPI (blue) in U251 i.c. tumors. **B**, quantification of CD11b and F4/80+ cells in the irradiated tumor of (A). *** $p < 0.001$ (*versus* control).



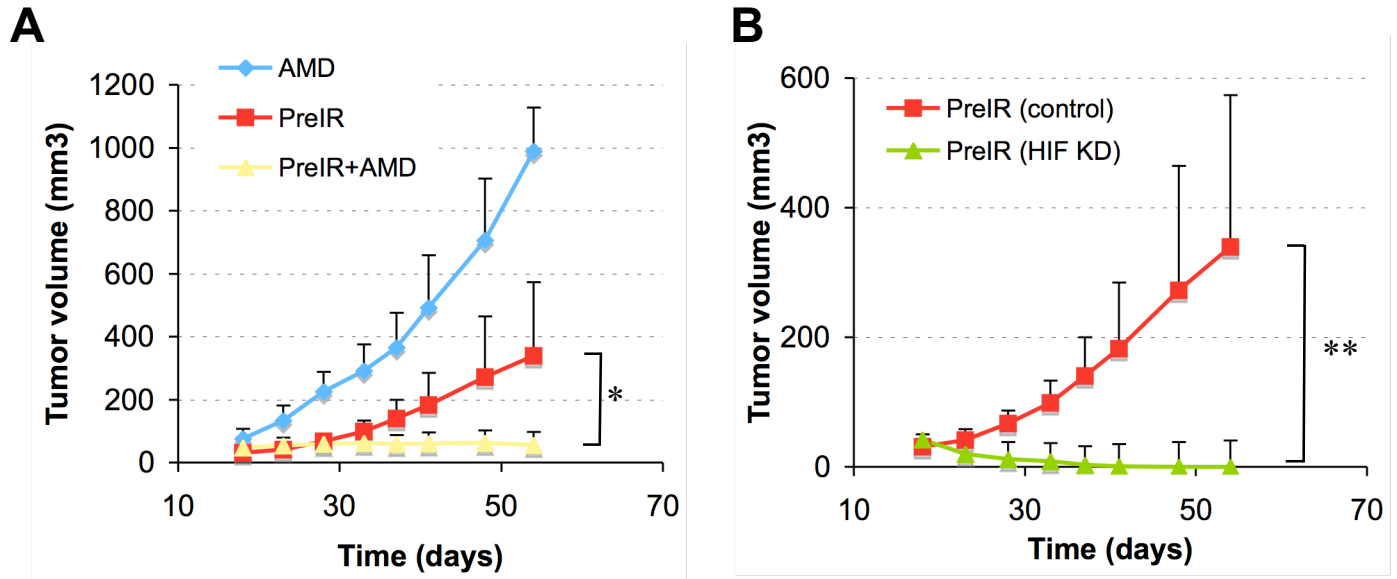
Supplemental Figure 4. **A**, Western blot analysis for HIF-1 α expression in WT, vector only (pSR), specific shRNA for HIF-1 α - (clone #1, #4, and #1+4) transduced U251 cells. GAPDH was used as the internal control. **B**, growth curve of orthotopic pFB-Luc U251/pSR and U251 HIF1KD₁ and HIF1KD₄ tumors. Single dose (15 Gy) of irradiation on day 13 was performed. Tumor growth was measured by BLI. Growth curve of i.c. pFB-Luc murine HIF-1 wild type (**C**) and HIF-1 KO (**D**) GBM tumors. **E**, Kaplan-Meier survival curve of murine GBM/HIF-1 wt and KO tumor-bearing mice. Mice were treated with 10 Gy of irradiation on day 8.



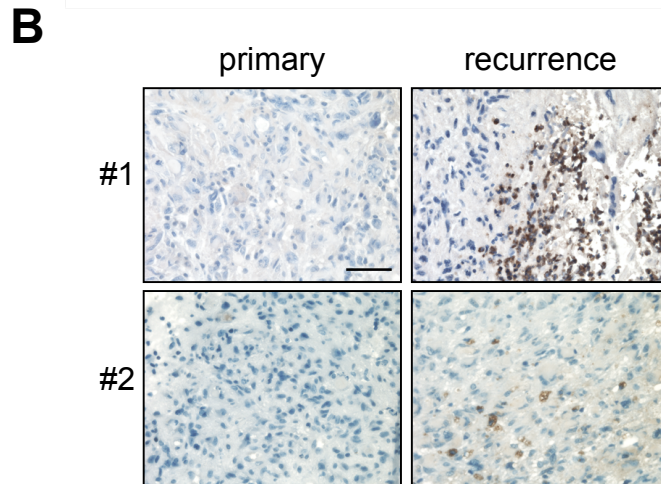
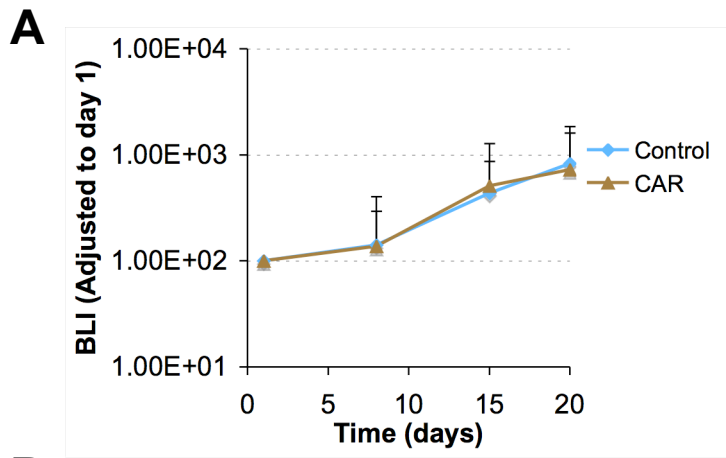
Supplemental Figure 5. **A**, quantification of pCXCR4 GFP-BM cells in U251 i.c. tumor following irradiation. *** $p < 0.001$. **B**, growth curve of pFB-Luc U251 i.c. tumor. Mice were treated with DC101 on day 21 for 3 weeks. **C**, Kaplan-Meier survival curve of U251 i.c. tumor-bearing mice of Figure 4A and B. **D**, survival curve of mice in Figure 4C.



Supplemental Figure 6. A, growth curve of pFB-Luc U87 i.c. tumor. Mice were treated with or without 15 Gy irradiation on day 11, AMD3100 alone, or irradiation followed by AMD3100 (n=6). Error indicates S.D. **B**, Kaplan-Meier survival curve of **(A)**. **p<0.01 versus IR.



Supplemental Figure 7. A, growth curve of U251 s.c. tumor. Tumor cells were inoculated at non-irradiated site with AMD3100 infusion (blue), at pre-irradiated site with (yellow) or without (red) AMD3100. **B**, growth curve of U251 s.c. HIF1 pSR vector only (control) and HIF1KD₁₊₄ tumor. Tumor cells were inoculated at pre-irradiated site. Error indicates S.D.



Supplemental Figure 8. A, growth curve of pFB-Luc U25 1i.c. tumor. Carrageenan (CAR) treatment was started 9 days before tumor inoculation. **B**, IHC of GBM clinical samples staining for CD11b with higher magnification. Bar; 50 μ m.