Supplemental Figure 1. (A) Dose-response curves of JQ1 in match CD133+ and CD133- cells enriched from the T4105 or T4597 primary glioblastoma xenograft lines. (B) Growth rates of T4302 CD133+ cells for 5 days were measured in the presence of JQ1 at indicated concentrations. (C) Dose-response curve of (-)-JQ1 in T4302 CD133+ cells. (D) Dose-response curve of PFI-1 in T4302 CD133+ cells. (E) T4302 CD133+ cells were treated by JQ1 for 72 hours at indicated concentrations. Relative caspase 3/7 activity was determined by normalizing caspase activities to the corresponding cell titers. *: $p<0.05$ by student's *t*-test.

Supplemental Figure 2. (A) Normal human neural progenitor (NHNP) cells were treated with JQ1 at various concentrations as indicated. Five days after treatment, cell viability was determined by the CellTiter-Glo assay kit and normalized to the values of vehicle-treated cells. (B) Three days after JQ1 treatment, caspase activity was determined as described in Figure 2B. *: $p<0.05$ by student's *t*-test. (C) Cell cycle distribution of NHNP cells was determined 48 hours after JQ1 treatment as described in Figure 1D.

Supplemental Figure 3. (A) Reduced expression of BRD2, BRD3, BRD4 following expression of corresponding shRNA sequences was determined by qRT-PCR in T4302 CD133+ cells. Cell growth was measured for 5 days following knockdown of (B) BRD2, (C) BRD3, or (D) BRD4 in T4302 CD133+ cells as described in Figure 2A.

Supplemental Figure 4. Immunoblotting of c-Myc in (A) T4302 CD133+ cells or (B) T4302 CD133- cells treated with JQ1 for 24 hours at indicated concentrations.

Supplemental Figure 5. (A) T4302 CD133+ cells were infected with lentivirus directing expression of non-targeting (NT) shRNA or p53-specific shRNA. Downregulation of p53 was determined by immunoblotting 24 hours after JQ1 treatment. (B) Rb expression was determined by qRT-PCR in T4302 CD133+ cells expressing NT shRNA or Rb-specific shRNA. (C) Immunoblotting of Bcl-xL in T4302 CD133+ cells infected with control lentivirus or virus directing expression of Bcl-xL. (D) Immunoblotting of p21 in T4302 CD133+ cells expressing NT shRNA or p21-specific shRNA.

Supplemental Figure 6. (A) The relative growth rates of T4597 tumors were determined as the weekly fold increases in bioluminescence intensity of individual tumors. Data shown were the mean ± SEM (n=10). (B) The median bioluminescence intensities were generated from all 10 tumors in each arm. *: $p< 0.05$ by student's *t*-test.