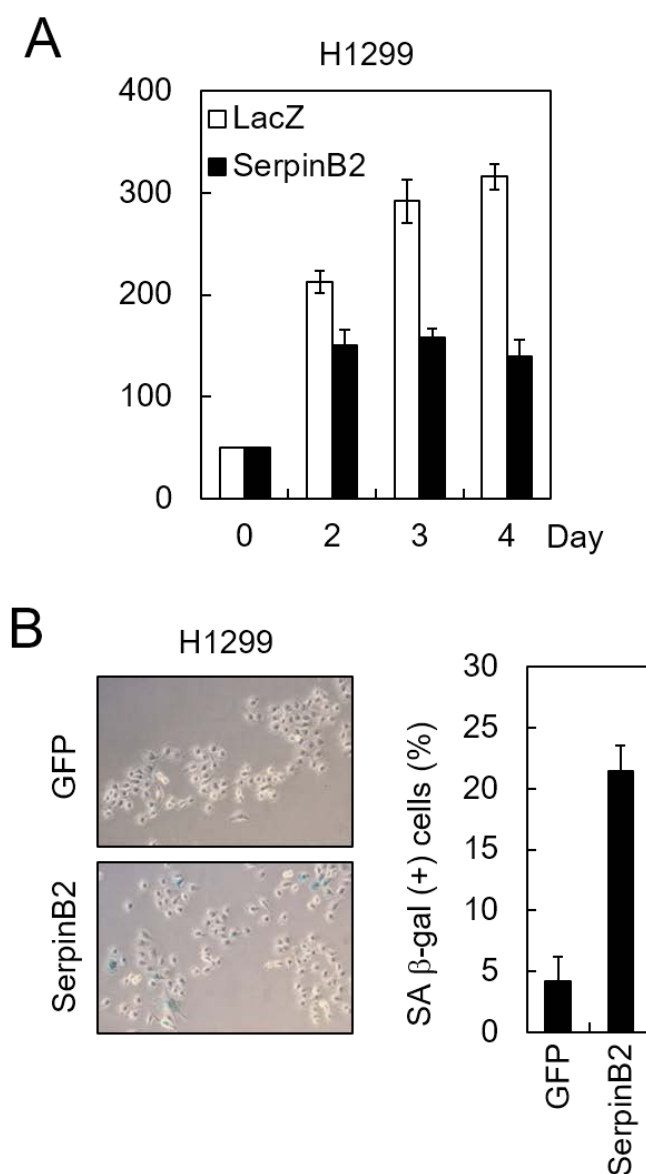
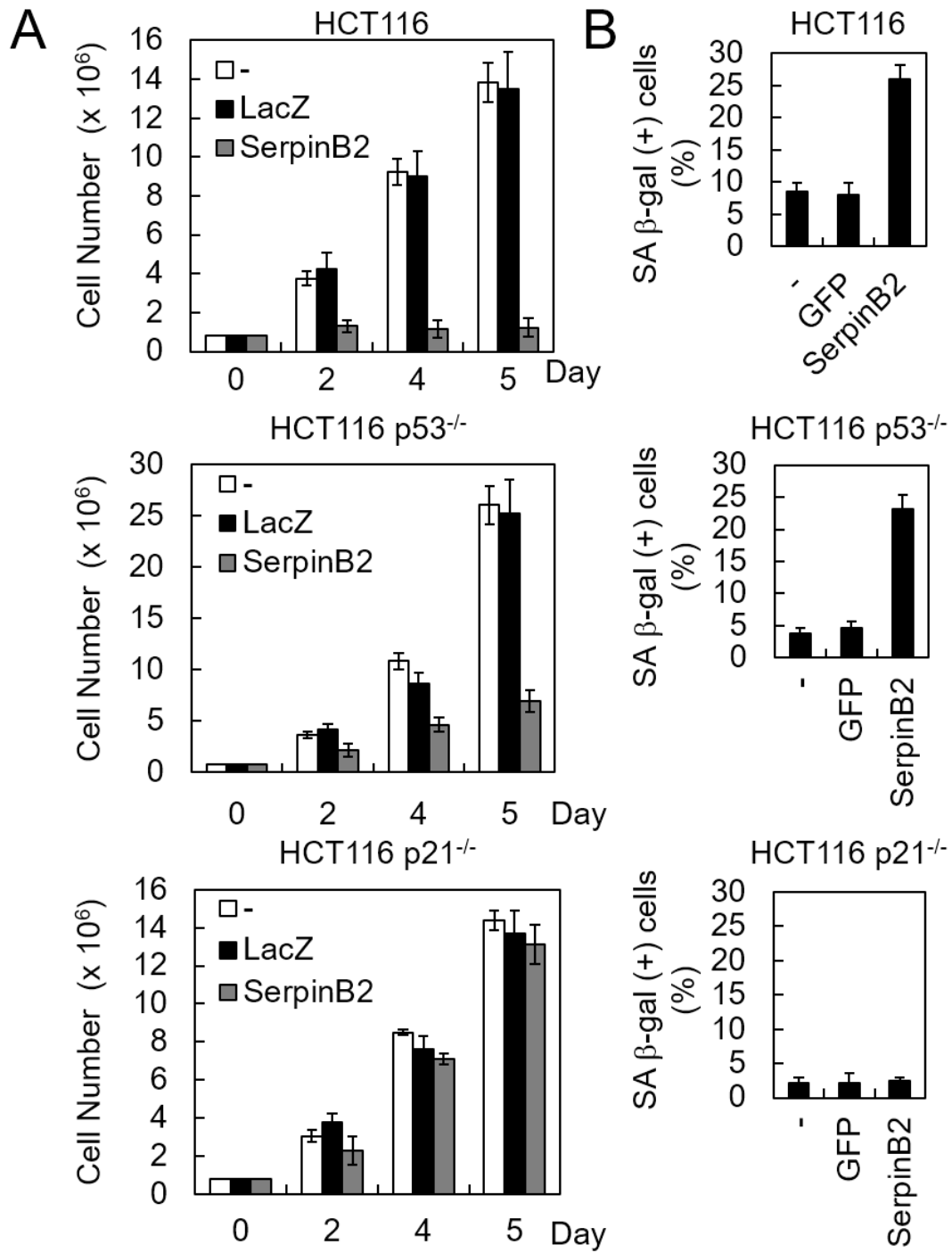


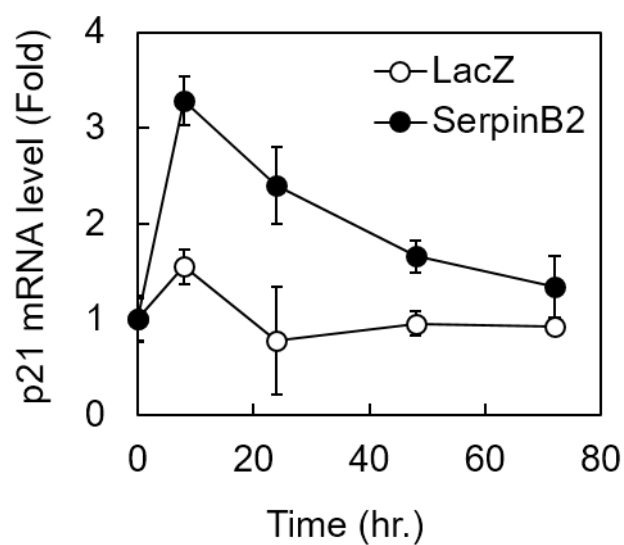
**Figure S1. Telomerase cannot rescue SerpinB2-induced senescence.** (A). Telomerase immortalized BJ-hTERT cells were transduced by either adenovirus carrying SerpinB2 or LacZ and cultured at 37°C for 3 days. The cell lysates were separated and analyzed by 10% SDS-PAGE followed by immunoblotting analysis using antibodies against SerpinB2 or actin. (B)  $\sim 5 \times 10^5$  cells were transduced with adenovirus carrying the SerpinB2 or LacZ. The cell numbers were then counted at the times indicated. Values show the average of three experiments. (C) The SerpinB2 or GFP transduced cells were analyzed for SA- $\beta$ -gal activity staining. Photographs of the X-gal-stained cells are shown (left). Quantification of the SA- $\beta$ -gal positive-stained cells was conducted (right). Results were obtained from the average of three independent experiments. An asterisk indicates  $p < 0.05$ .



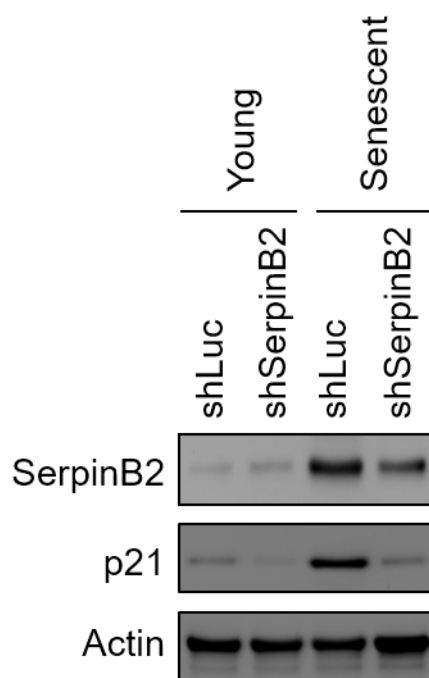
**Figure S2. SerpinB2 induces senescence in H1299 cells.** (A).  $\sim 5 \times 10^5$  lung cancer H1299 cells were transduced by either adenovirus carrying SerpinB2 or LacZ and cultured at 37°C. The cell numbers were then counted at the times indicated. Values show the average of three experiments. (C) The SerpinB2 or GFP transduced cells were analyzed for SA- $\beta$ -gal activity staining. Photographs of the X-gal-stained cells are shown (left). Quantification of the SA- $\beta$ -gal positive-stained cells was conducted (right). Results were obtained from the average of three independent experiments. An asterisk indicates  $p < 0.05$ .



**Figure S3 SerpinB2-mediated senescence requires p21 in HCT116.** (A) HCT116 cells were transduced with adenovirus carrying LacZ or SerpinB2. The number of cells were calculated at indicated days. (B) The transduced cells were then analyzed for SA-β-gal activity staining. Quantification of the SA-β-gal positive cells were presented.



**Figure S4. Expression of p21 mRNA in SerpinB2-expressing cells.** IMR90 cells were transduced with adenoviruses carrying LacZ or SerpinB2. mRNA were collected and analyzed by qPCR at indicated times.



**Figure S5. Reduction of p21 by knocking down SerpinB2.** IMR90 cells were transduced with lentivirus carrying shLuc or shSerpinB2. Total cellular proteins were collected and analyzed by immunoblots using antibodies against SerpinB2, p21, or actin.