

**Fig. S1. The mice treatment scheme.** The lymphoma subcutaneous (S.C.) model was established by implantation of A20 (5 x  $10^6$ ) EL4 (2 x  $10^6$ ) cells on the right flank of C57BL/6 mice. When the tumor volume reached approximately 100 mm<sup>3</sup> (7 or 10 days post tumor inoculation), the tumor-bearing mice were treated with PBS, 2 x  $10^7$  of oVV-Control, or oVV-MnSOD at a 2-day interval for 3 times via intratumoral (I.T.) injection.

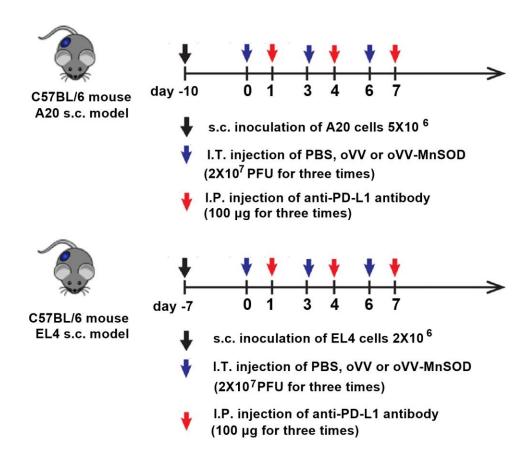


Fig. S2. Schematic diagram of the experiment for combination therapy. Ascites tumor model was established as previously described. The tumor-bearing mice were treated with PBS,  $2 \times 10^7$  of oVV-Control, or oVV-MnSOD at a 3-day interval for 3 times via intratumoral (I.T.) injection. And 24 hours after each OVs injection, anti-PD-L1 antibody (100 µg per mouse) was injected intraperitoneally (I.P.) into the mouse model for total three times.