

## Supplementary Figure Legends

**Supplementary Figure 1. Tumor-specific effector immune response in peritoneal washes after rMVAs peritoneal carcinomatosis treatment.** C57BL/6 ( $n=3$ ) were challenged *i.p.* with  $5 \times 10^6$  ID8.OVA-*Vegf*/GFP tumor cells. Seven days later, mice were treated by *i.p.* route with PBS (Control) or  $5 \times 10^7$  TCID<sub>50</sub> of the indicated rMVAs constructs. A second dose (boost) of treatment was administrated twenty-one days after tumor cells inoculation. One week after the boost, cells from peritoneal washes were stimulated with the OVA<sub>257-264</sub> antigen, and IFN- $\gamma$ -producing cells were measured by ELISpot. *i.p.*, intraperitoneal; MVA, modified vaccinia virus Ankara; OVA, ovalbumin; TCID<sub>50</sub>, 50% Tissue Culture Infectious Dose.

**Supplementary Figure 2. Loco-regional rMVA-Combo increases peritoneal carcinomatosis survival in the MC38 model.** C57BL/6 mice were challenged *i.p.* with  $5 \times 10^5$  MC38 tumor cells. Seven days after tumor challenge, mice were treated by *i.p.* route with PBS (Control) or  $5 \times 10^7$  TCID<sub>50</sub> of the indicated rMVAs constructs. **(A)** Kaplan-Meier survival curve ( $n=12-17$ ). **(B)** Naïve mice or mice that survived the MC38 peritoneal tumor ( $n=4$ ) were rechallenged subcutaneously with  $5 \times 10^5$  MC38 tumor cells.

**Supplementary Figure 3. Tumor growth kinetics of the ID8.OVA-Vegf/GFP.LUC tumor**

**cells.** C57BL/6 mice were challenged *i.p.* with  $5 \times 10^6$  ID8.OVA-Vegf/GFP.LUC tumor cells.

**(A)** Quantification of luminescence (log scale) at day 7, 30, and 60. **(C)** Representative images

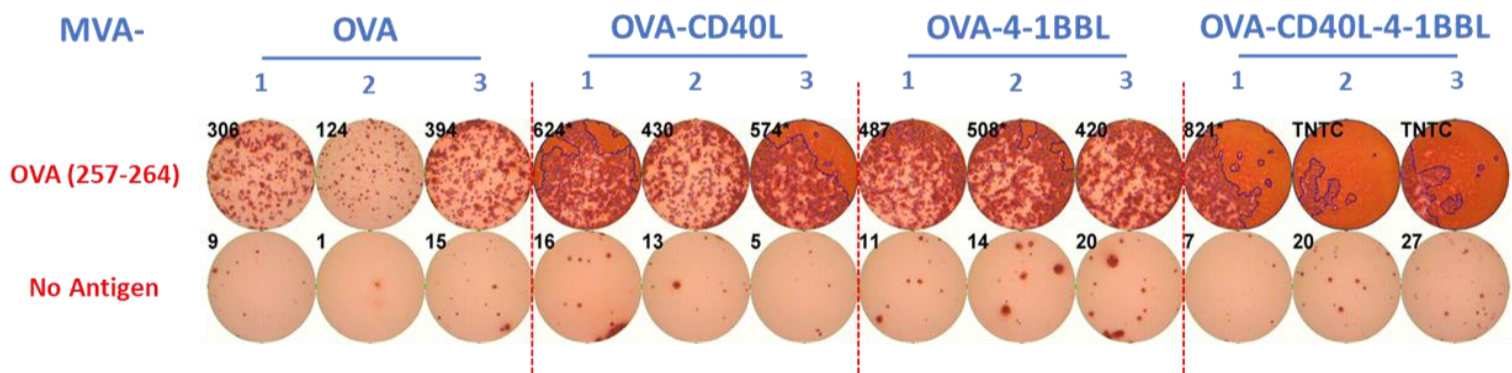
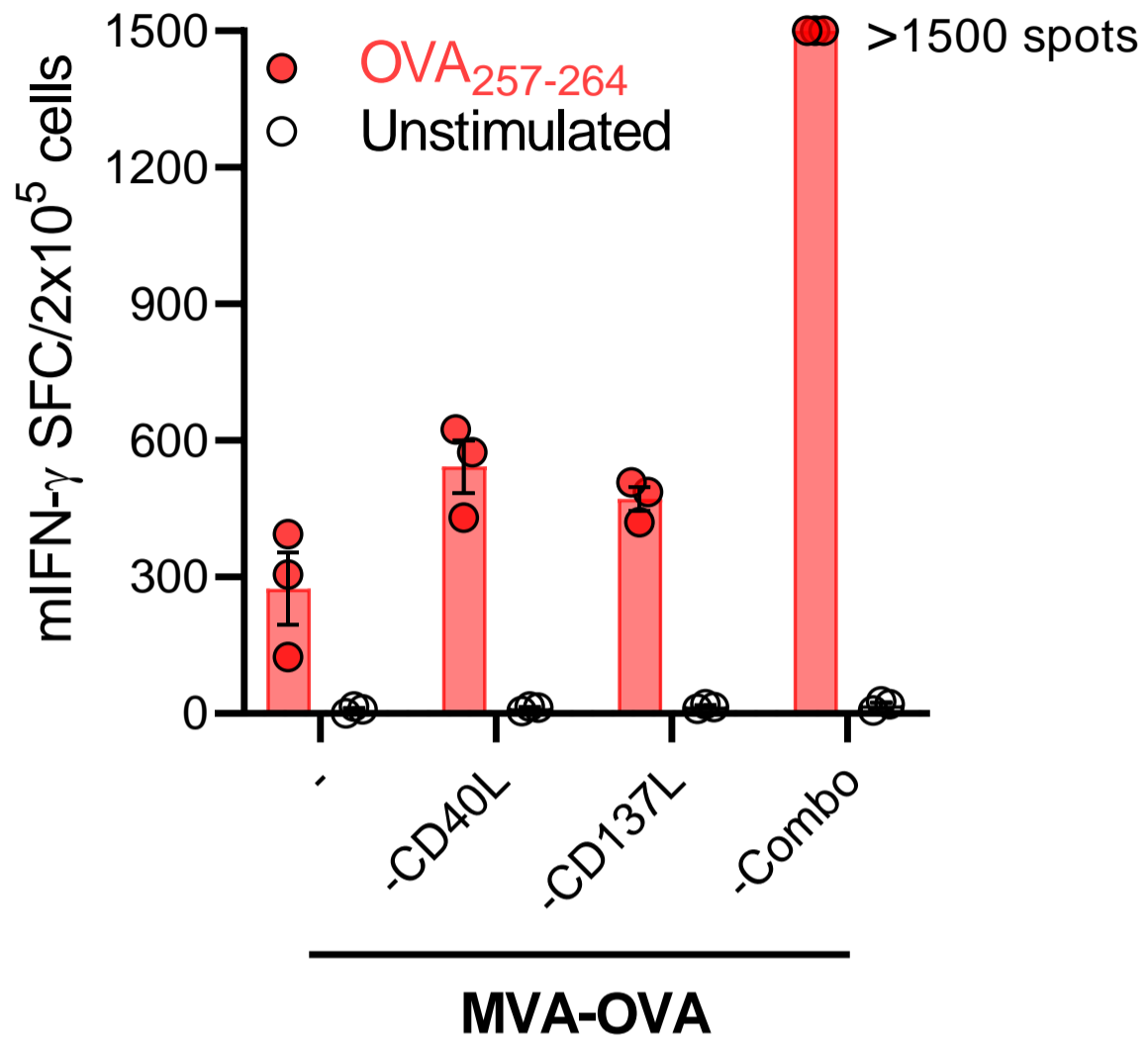
of the bioluminescence at day 7, 30, and 60 after peritoneal carcinomatosis challenge.

**Supplementary Figure 4. RNA-seq heatmap between MVA-OVA-Combo vs. Control**

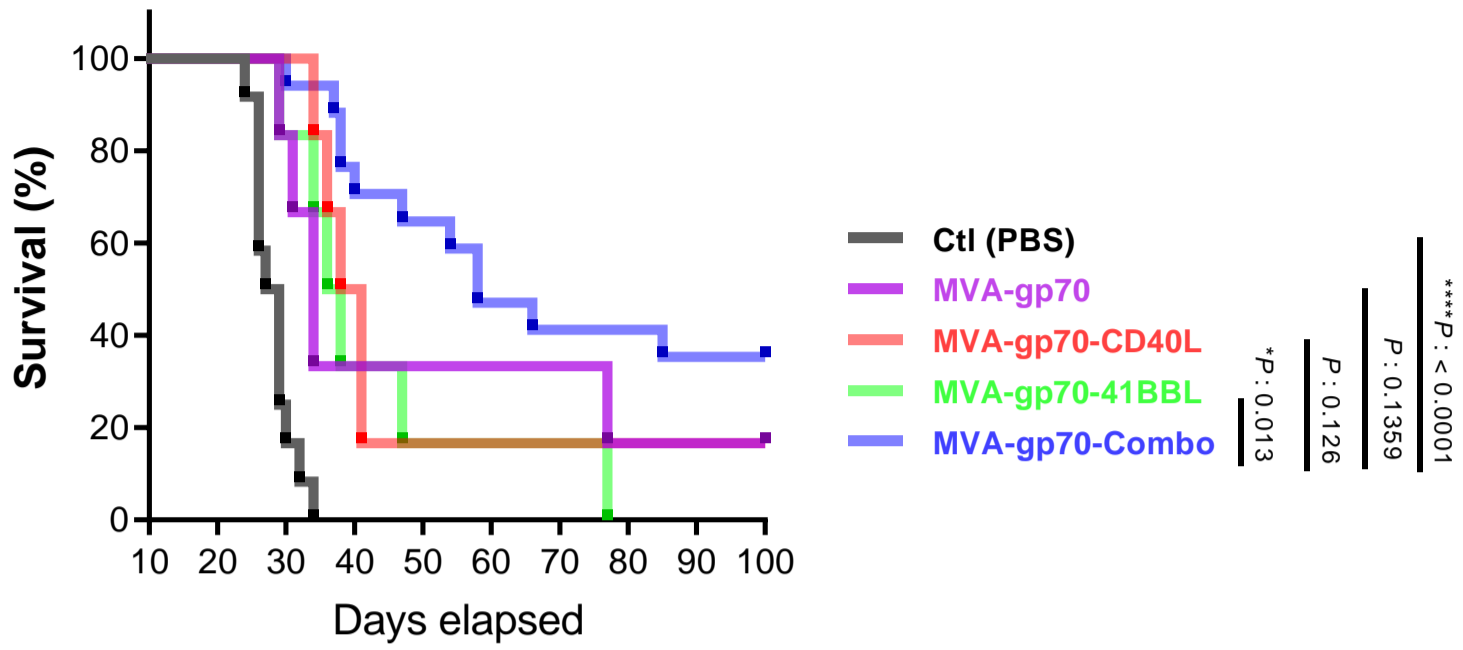
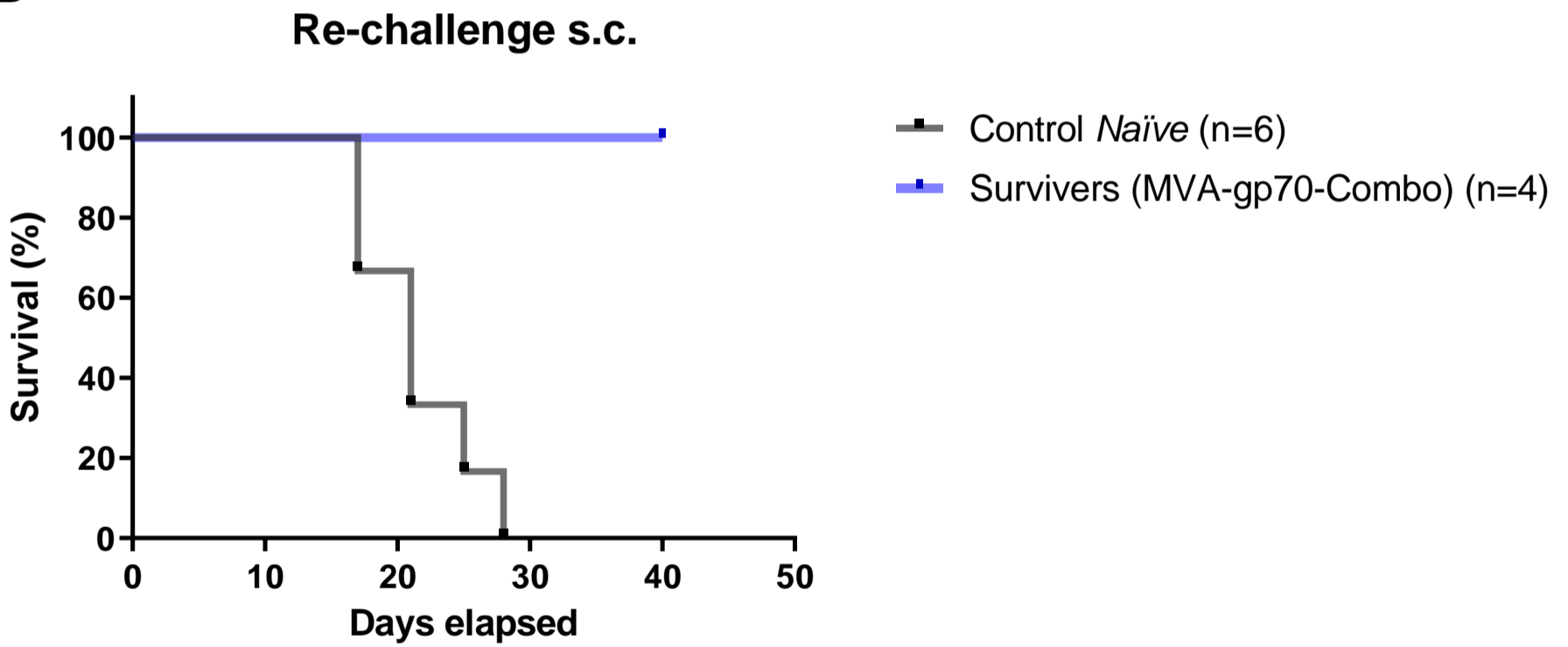
**group in omentum.** The heatmap shows the z-scored log<sub>2</sub>CPM expression of differentially

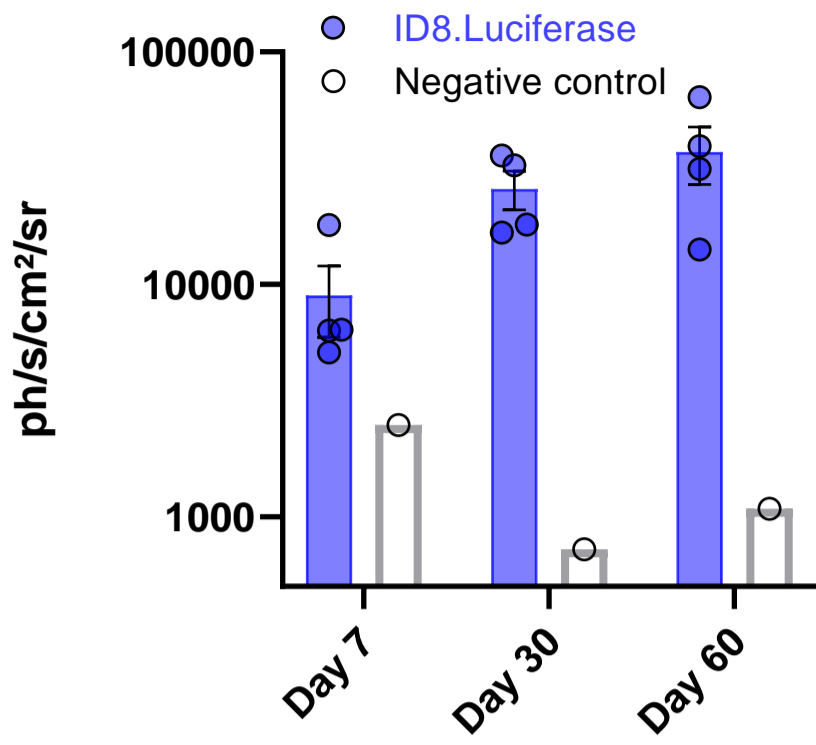
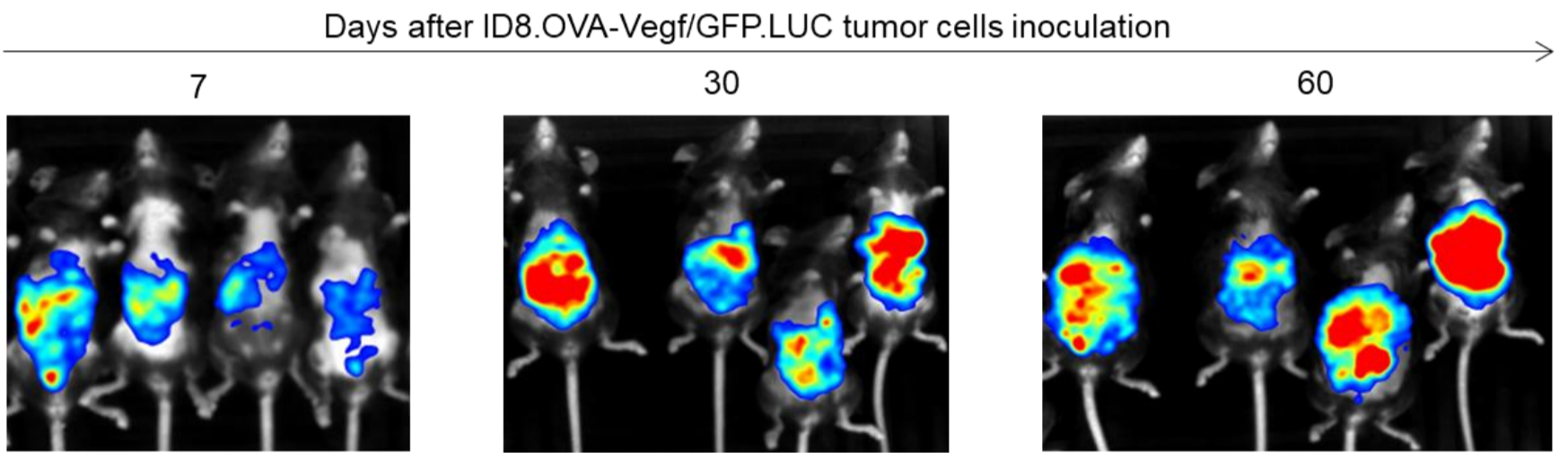
expressed genes ( $p.val < 0.05$  &  $logFC < -1 | > 1$ ).

## Peritoneal Wash

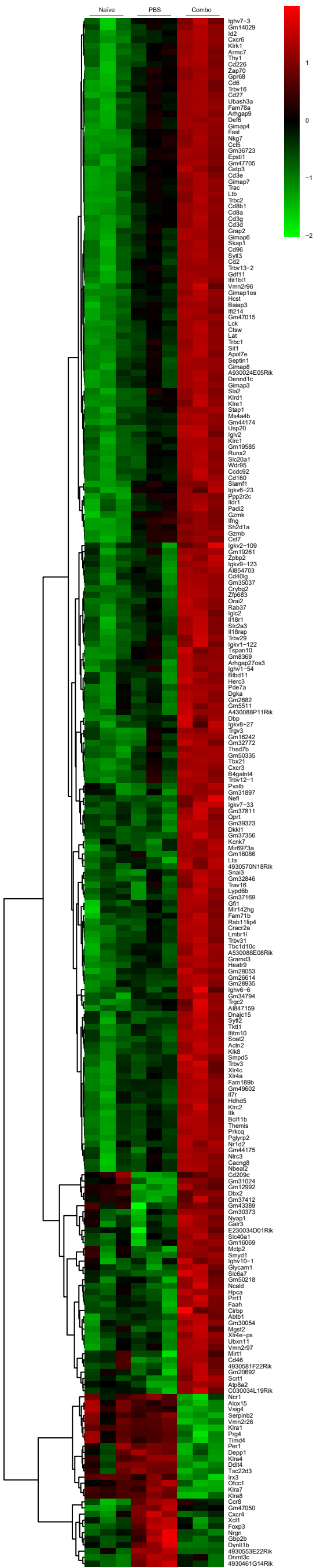


## SUPPLEMENTARY FIGURE 1

**A****B****SUPPLEMENTARY FIGURE 2**

**A****B****SUPPLEMENTARY FIGURE 3**

COMBO vs PBS  
 $pval < 0.05$  and  $\logFC < -1 \mid \logFC > 1$



SUPPLEMENTARY FIGURE 4