

Supporting Information for

**Cowpea Mosaic Virus Promotes the Anti-tumor Activity and Immune Memory in a
Mouse Ovarian Tumor Model**

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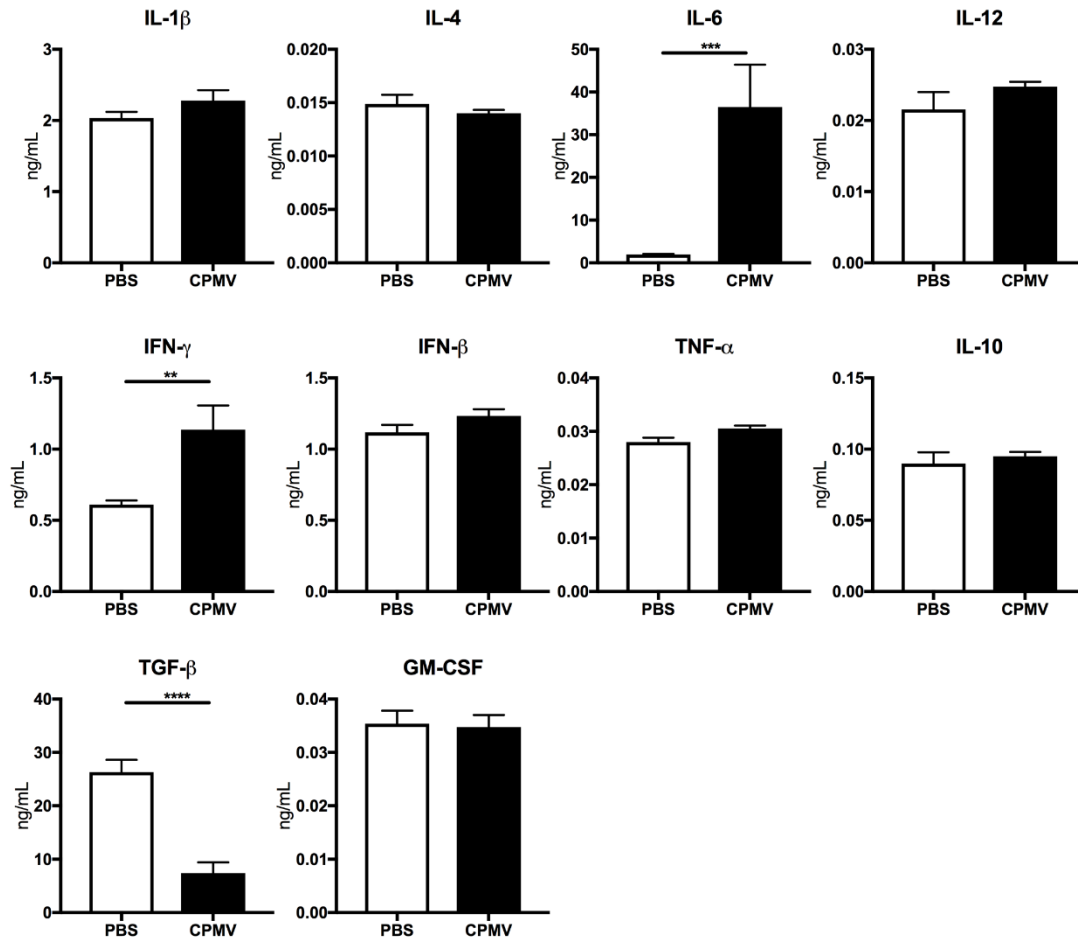


Figure S1. Cytokine secretion from peritoneal cavity wash cells after *ex vivo* CPMV stimulation. The levels of IL-1 β , IL-4, IL-6, IL-10, IL-12, TNF- α , TGF- β , GM-CSF, IFN- β , and IFN- γ were measured. Peritoneal cavity wash cells were collected on day 35 post-inoculation. Data are means \pm SEM (n=3). Statistical significance was calculated using an unpaired t-test (**p<0.01, ***p<0.0005, ****p<0.0001).

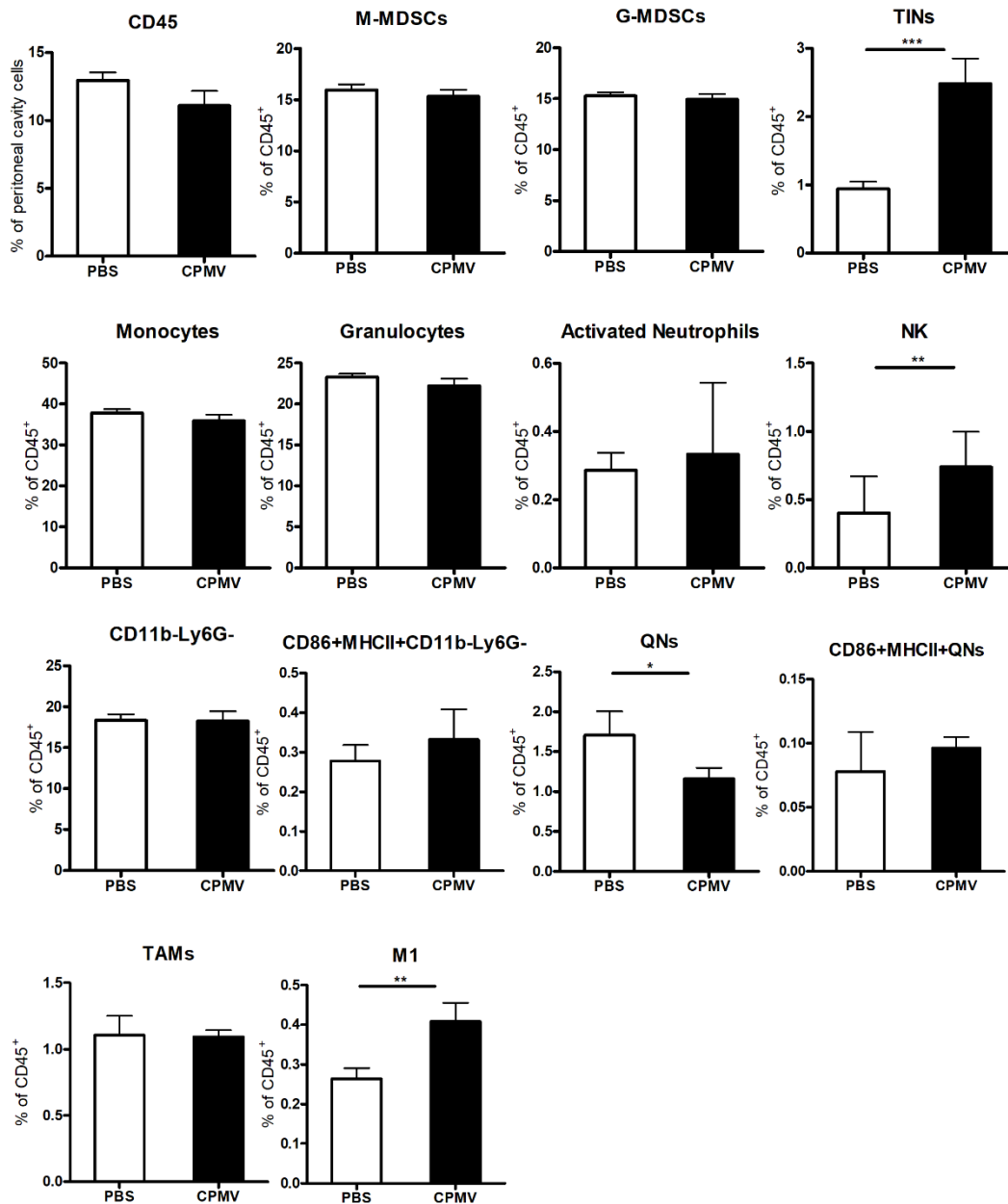


Figure S2. Innate immune cell profile from peritoneal cavity wash cells after *ex vivo* CPMV stimulation. Data are means \pm SEM (n=3). Statistical significance was calculated using an unpaired t-test (**p<0.01, ***p<0.0005, ****p<0.0001).

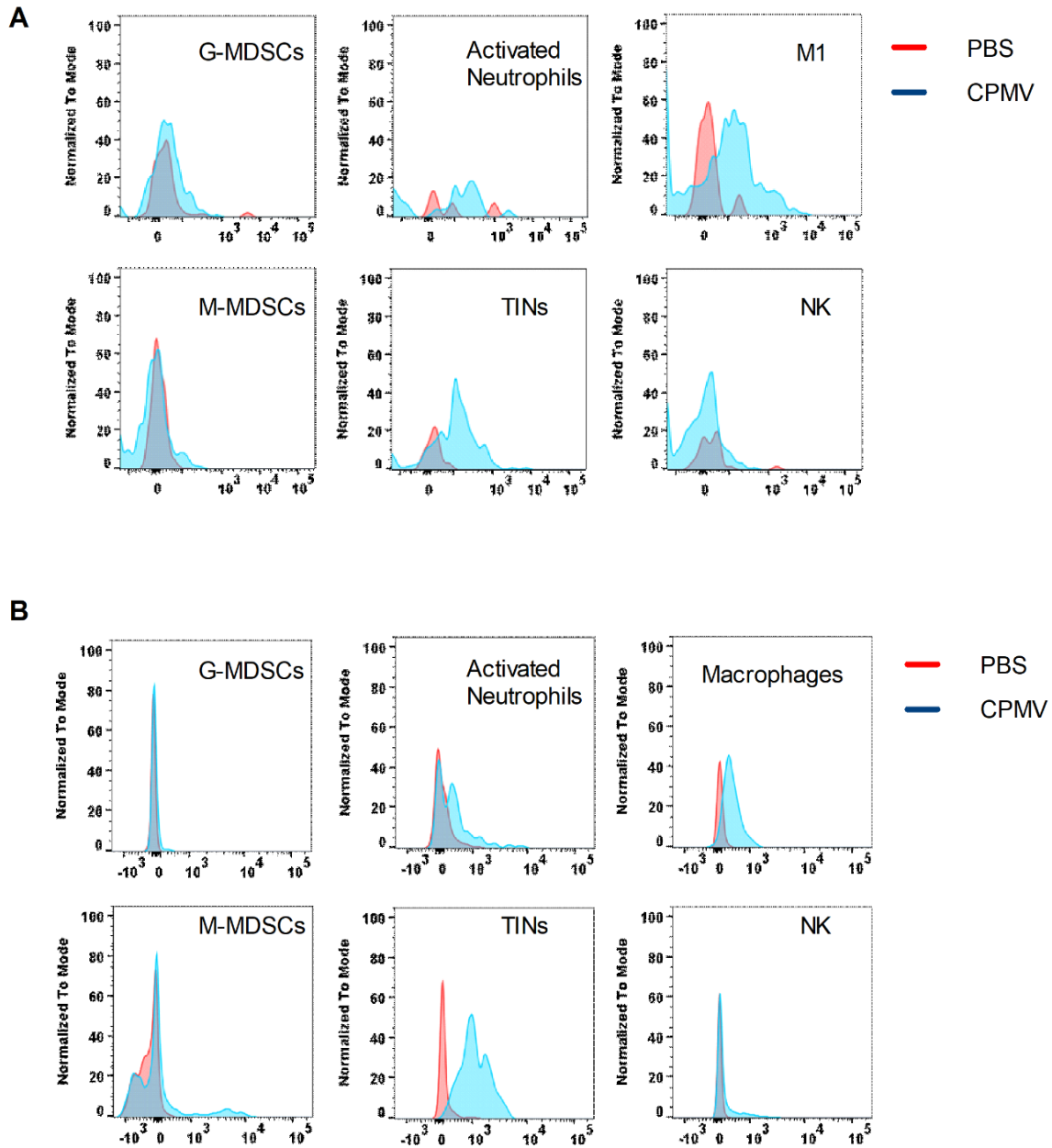


Figure S3. Uptake of Cy5-labeled CPMV particles. **A**, Cy5-labeled CPMV particles were injected i.p. into tumor-bearing mice and a peritoneal wash was collected 48 h later. **B**, CPMV uptake after *ex vivo* stimulation of splenocytes for 2 h.

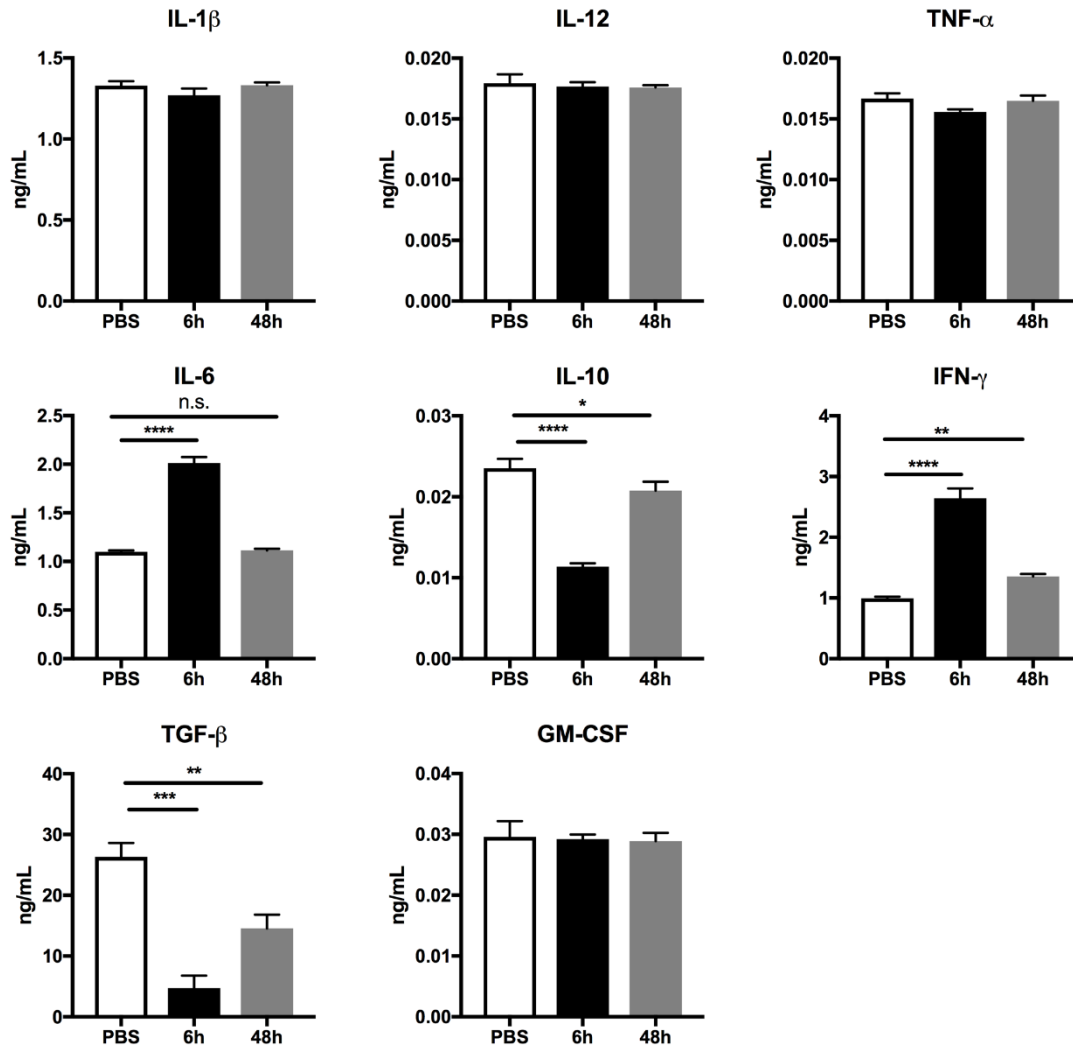


Figure S4. Cytokine levels in the peritoneal cavity wash supernatant, collected 6 or 48 h after the final CPMV treatment. The levels of IL-6, IL-12, TNF- α , IL-10, TGF- β , IL-1 β , GM-CSF and IFN- γ were measured. Data are means \pm SEM (n=3). Statistical significance was calculated by two-way ANOVA with the Holm-Sidak test (* p <0.05, ** p <0.01, *** p <0.0005; **** p <0.0001).

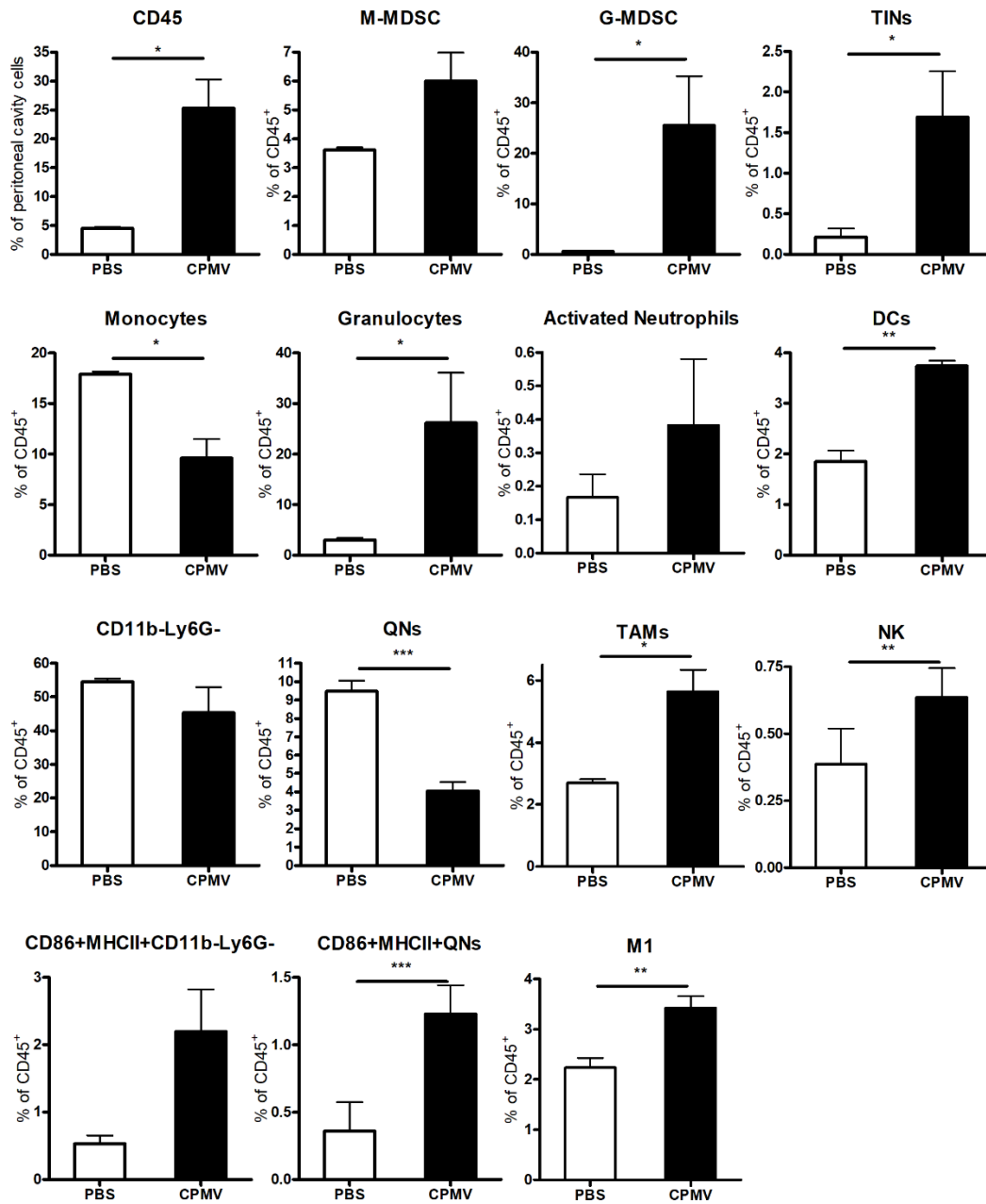


Figure S5. Innate immune cell profile in the peritoneal cavity wash collected 6 h after the final CPMV treatment. Statistical significance was calculated using an unpaired t-test (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.0005$).

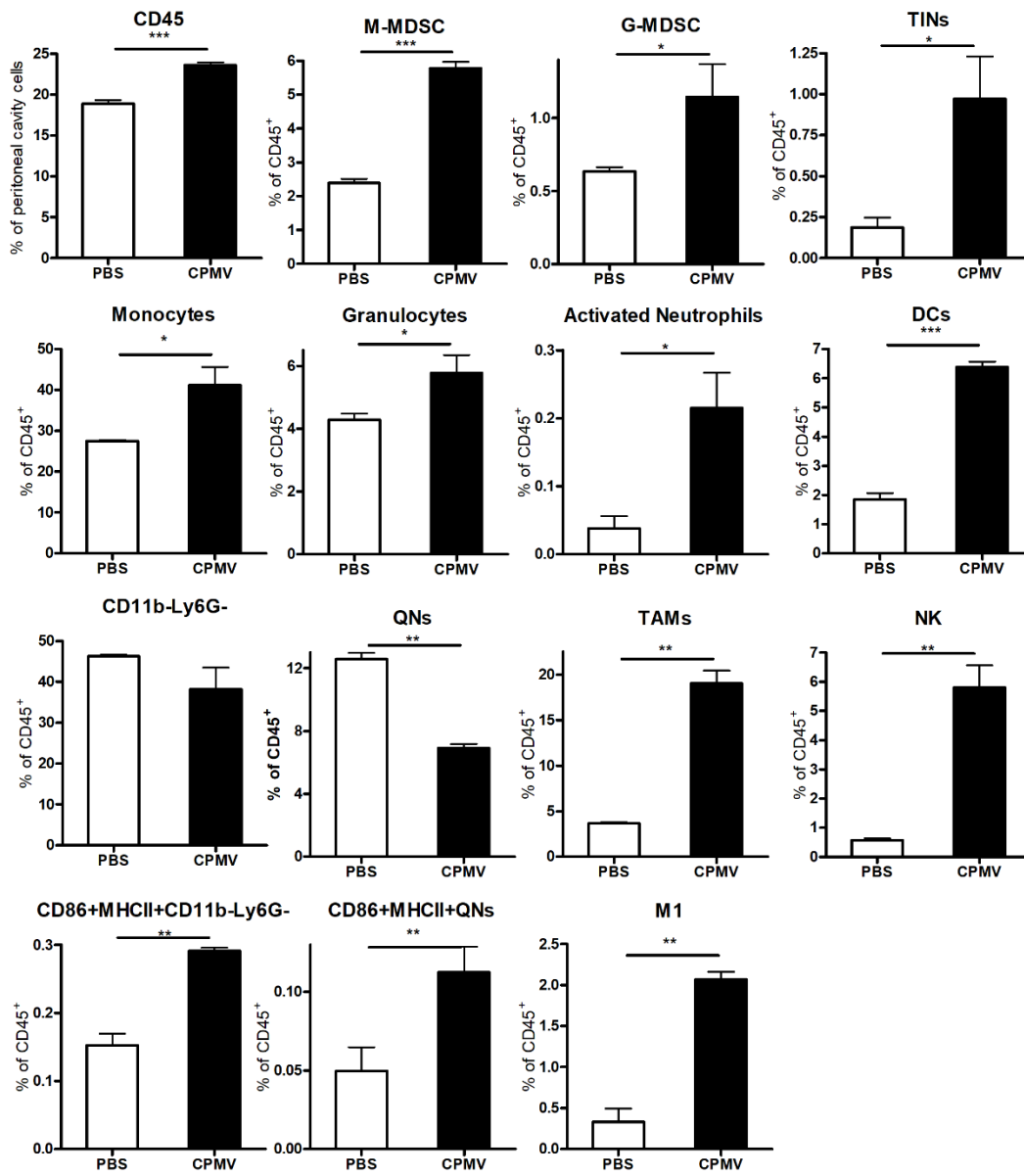


Figure S6. Innate immune cell profile in the peritoneal cavity wash collected 48 h after the final CPMV treatment. Statistical significance was calculated using an unpaired t-test (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.0005$).

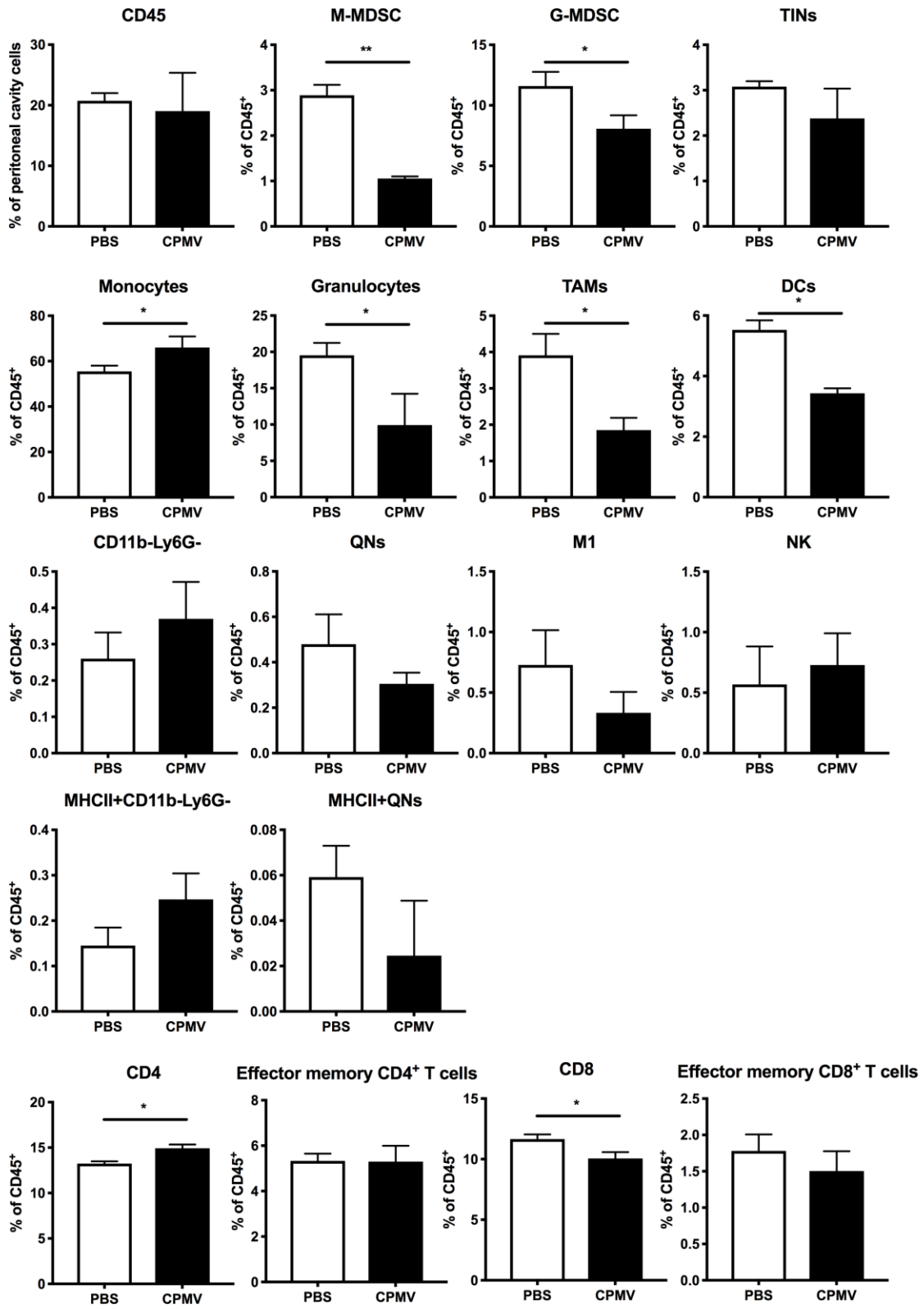


Figure S7. Innate and adaptive immune cell profiles of splenocytes collected 6 h after the final CPMV treatment. Statistical significance was calculated using an unpaired t-test (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.0005$).

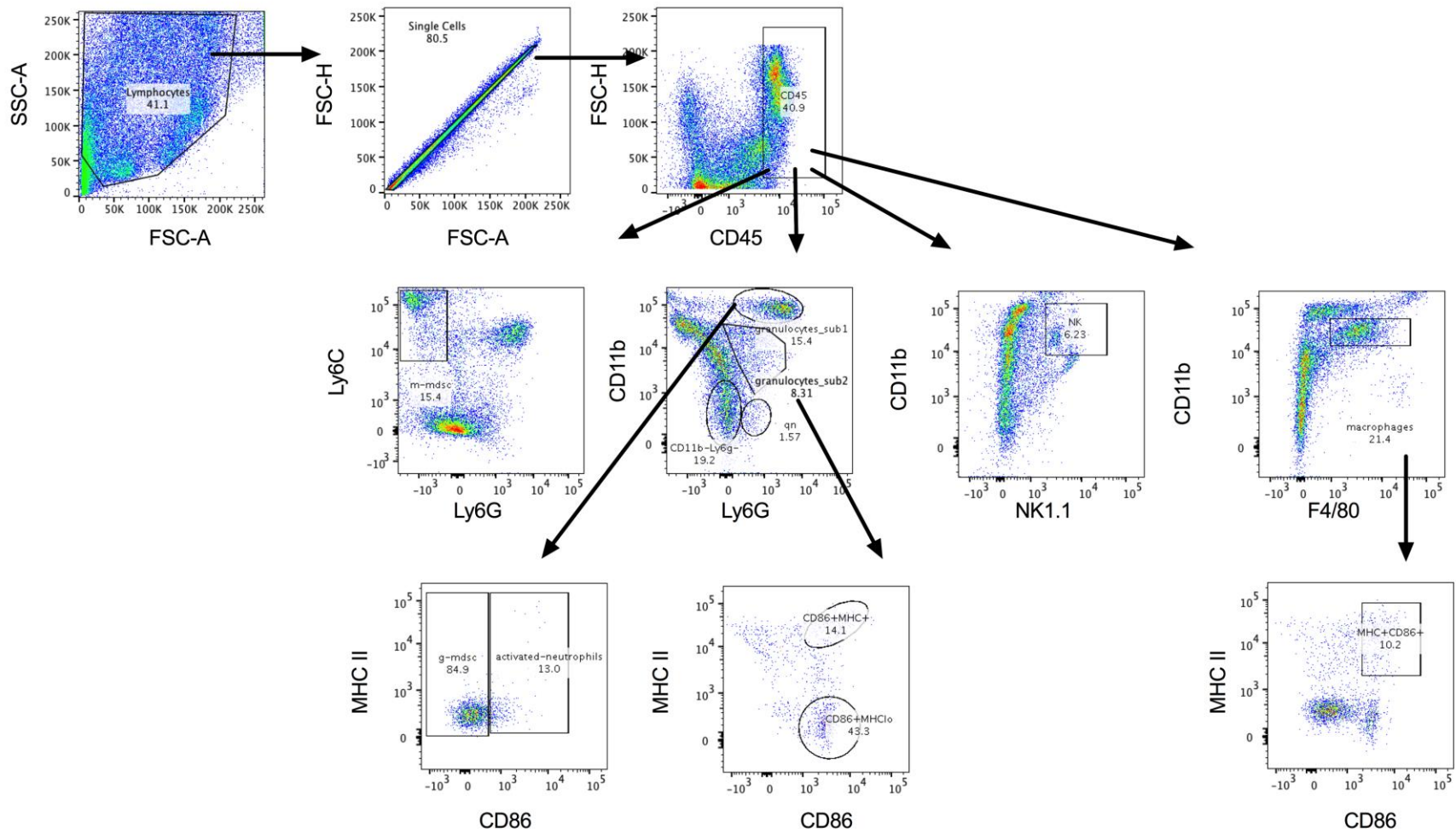


Figure S8. Gating strategy of innate immune cells profiles in tumor-bearing mice peritoneal cavity.

Table S1. Surface markers of each particular cell type

cell types	full name	Phenotype
G-MDSCs	Granulocytic myeloid-derived suppressive cells	CD45 ⁺ CD11b ⁺ Ly6G ⁺ Ly6C ⁻ MHCII ⁻ CD86 ⁻
M-MDSCs	Monocytic myeloid-derived suppressive cells	CD45 ⁺ CD11b ⁺ Ly6G ⁻ Ly6C ⁺ MHCII ⁻ SSC ^{low}
TINs	Tumor-infiltrating neutrophils	CD45 ⁺ CD11b ⁺ Ly6G ⁺ MHCII ⁺ CD86 ⁺
Activated Neutrophils	Activated Neutrophils	CD45 ⁺ CD11b ⁺ Ly6G ⁺ MHCII ⁺ CD86 ^{mid}
DCs	Dendritic cells	CD45 ⁺ CD11b ⁺ CD11c ⁺
NK	Natural killer cells	CD45 ⁺ CD11b ⁺ NK1.1 ⁺ Ly6G ⁻ Ly6C ⁻ F4/80 ⁻
M1	Type 1 tumor associated macrophages	CD45 ⁺ CD11b ⁺ F4/80 ⁺ Ly6G ⁻ Ly6C ⁻ MHCII ⁺ CD86 ⁺
TAMs	tumor associated macrophages	CD45 ⁺ CD11b ⁺ F/80 ⁺ Ly6G ⁻ Ly6C ⁻
CD86 ⁺ MHCII ⁺ QNs	CD86 ⁺ MHCII ⁺ Quiescent neutrophils	CD45 ⁺ MHCII ⁺ CD86 ⁺ CD11b ⁻ Ly6G ⁺
QNs	Quiescent neutrophils	CD45 ⁺ CD11b ⁻ Ly6G ⁺
CD86 ⁺ MHCII ⁺ CD11b ⁻ Ly6G ⁻	CD86 ⁺ MHCII ⁺ CD11b ⁻ Ly6G ⁻	CD45 ⁺ CD86 ⁺ MHCII ⁺ CD11b ⁻ Ly6G ⁻
CD11b ⁻ Ly6G ⁻	CD11b ⁻ Ly6G ⁻	CD45 ⁺ CD11b ⁻ Ly6G ⁻
Granulocytes	Granulocytes	CD45 ⁺ CD11b ⁺ Ly6G ⁺
Monocytes	Monocytes	CD45 ⁺ CD11b ⁺ Ly6G ⁻
CD45	Leukocytes	CD45 ⁺

