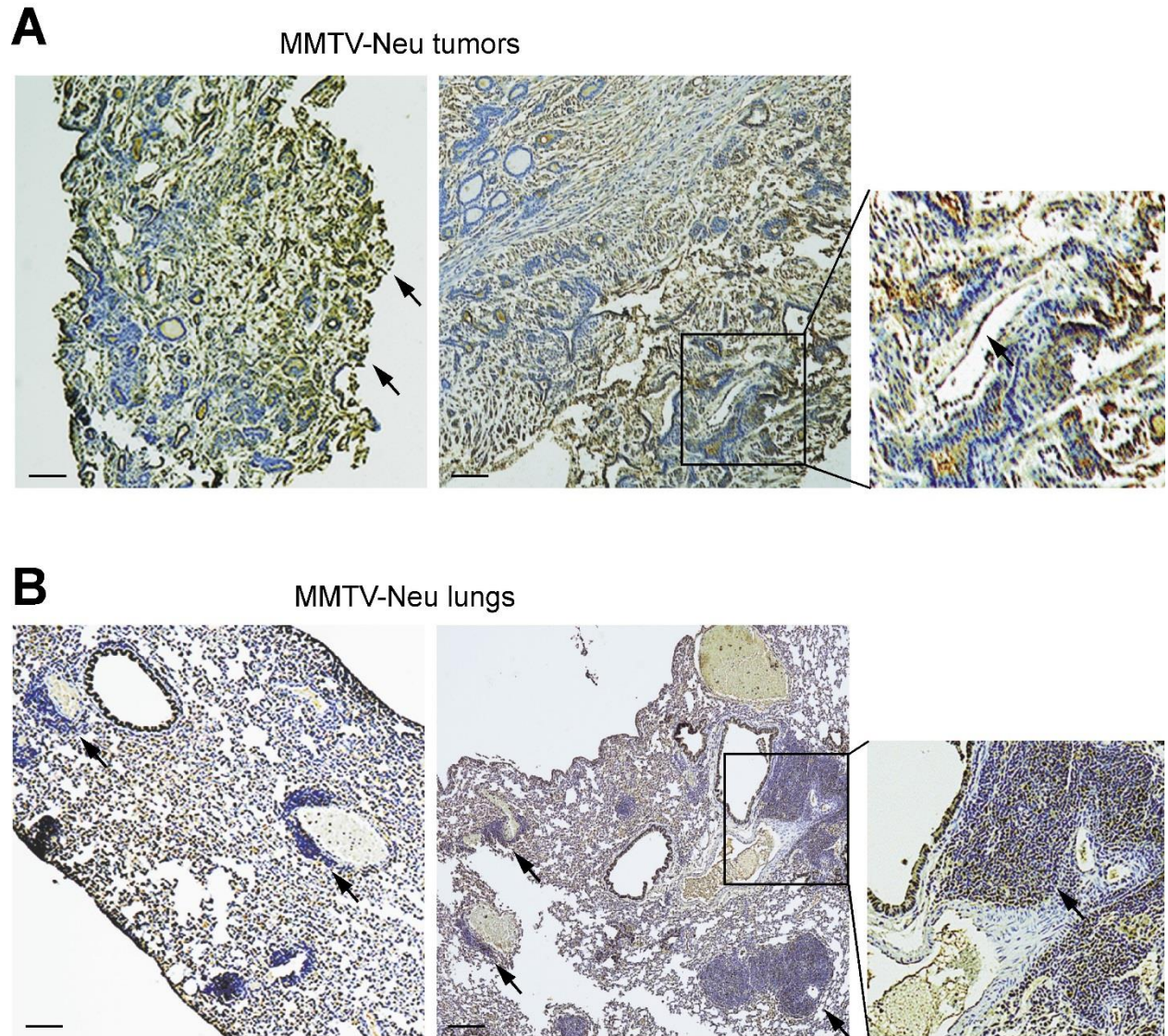
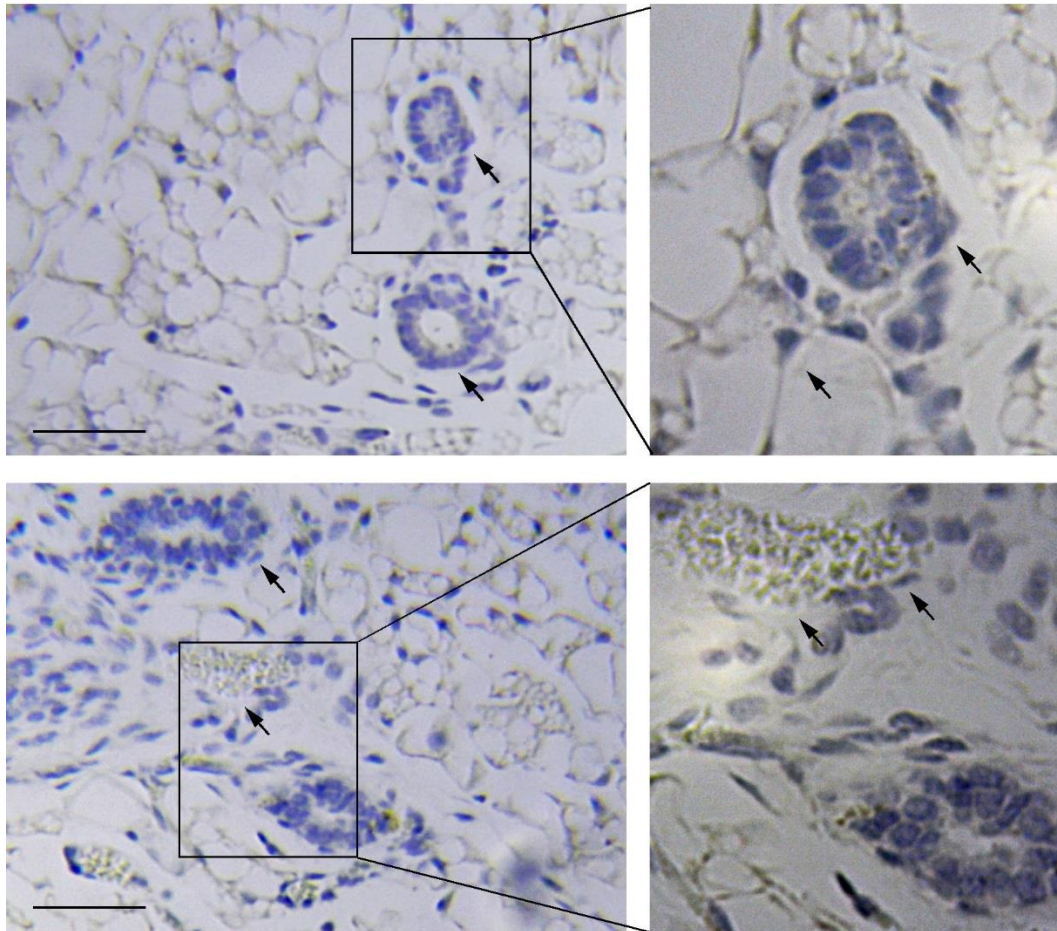


**Supplementary Figure S1. GT198 vaccine and adjuvants.** **A.** Coomassie blue staining of a protein gel showing GST-tagged GT198 fusion protein from bacteria inclusion body as antigen in vaccination. **B.** To identify the optimized dilution in mouse sera for measuring GT198 antibody titer, GT198-vaccinated B6 mouse serum was serially diluted and tested on His-GT198 coated 96-well plates (n=2). EC<sub>50</sub> was found as 1:5285, and thus 1:1000 and 1:3000 dilutions were chosen for the tests. Figure 2B represents the data using 1:1000 serum dilution. **C.** To compare the adjuvants in GT198 vaccination, subcutaneous injections of Incomplete Freund's adjuvant (IFA) or TiterMax, or intramuscular injection of Anti-CD40 and Poly IC were tested with GT198 vaccination in three groups of B6 mice (n=4). IFA yielded higher efficacy and was chosen for GT198 vaccination in MMTV-PyMT mice.

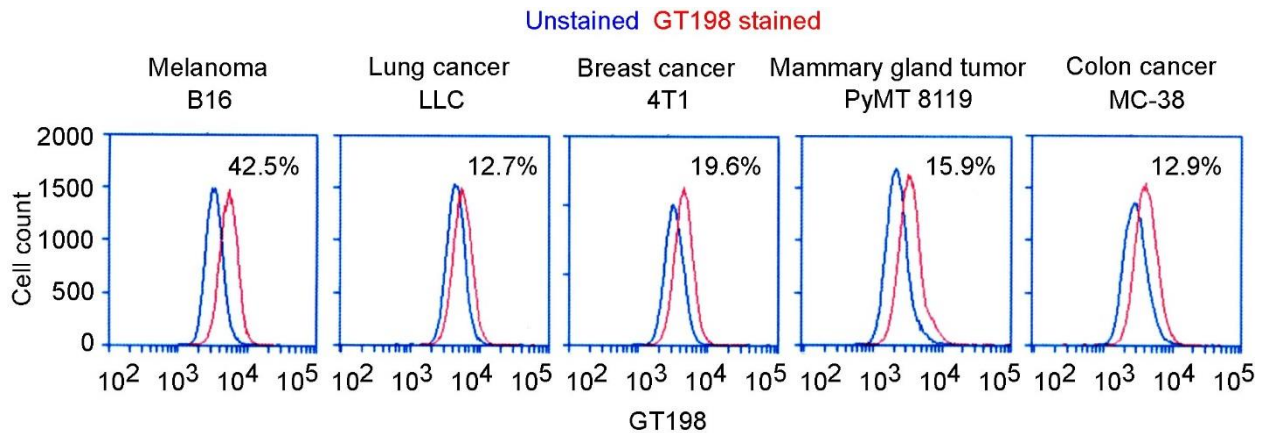


**Supplementary Figure S2. GT198 expression in MMTV-Neu mice. A.** Immunohistochemical staining of GT198 in mammary gland tumors of MMTV-Neu mice. Tumor stromal cells strongly express GT198 as indicated by arrows. The GT198 positive cells include blood vessel pericytes (insert). **B.** GT198 expression in lung metastasis of MMTV-Neu mice. Lung tumor foci with GT198 expression were developed surrounding the blood vessels as indicated by arrows. Normal mouse bronchiole epithelia are known to express nuclear GT198 [24]. More cytoplasmic GT198 expression is present in the mammary gland tumors than in the lung foci due to abundant GT198<sup>+</sup> stromal cell populations. Two representative images are shown. Boxed areas are enlarged at the right. Sections were counter-stained with hematoxylin. Scale bars = 100  $\mu$ m.

FVB/N wild-type mouse mammary glands



**Supplementary Figure S3. GT198 expression in mammary glands of wildtype FVB/N mice.** Immunohistochemical staining of GT198 in mammary glands of FVB/N mice at 12 weeks. Mammary gland stromal cells including adipocytes, blood vessel pericytes, and myoepithelial cells are negative in GT198 expression. Arrows indicate the negative cells. Two representative images are shown. Boxed areas are enlarged at the right. Sections were counter-stained with hematoxylin. Scale bars = 100 μm.



**Supplementary Figure S4. GT198 is detected on cell surfaces of viable mouse tumor cell lines.** FACS analysis was carried out using cultured mouse tumor cell lines as indicated. Viable cells were stained in PBS with 1% BSA on ice using polyclonal rabbit anti-GT198 (1:200) and anti-rabbit Alexa 448 (red lines). Alexa alone was served as unstained controls (blue lines). GT198 antibody binding to each cell line was compared with percent of positive cells as indicated. All cell lines have GT198 protein expression on living cell surfaces.