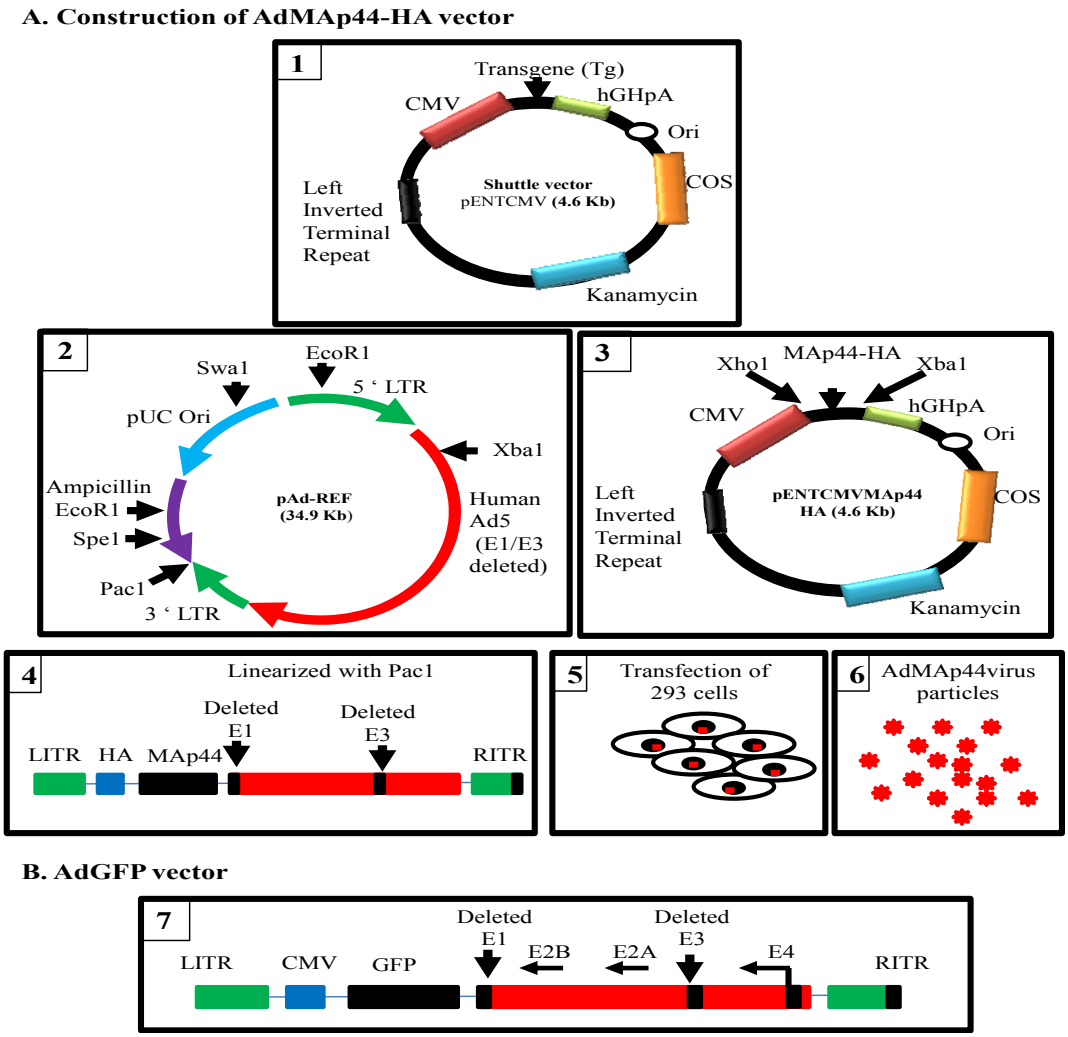

FIGURE S1. A. Diagrams in numeric sequence (#1-6) illustrating the construction of AdhMAp44 intermediate vectors and production of Ad particles. The human MAp44 cDNA was cloned into pENTCMVMAP44 HA vector by Welgen Inc. The HA sequence was used as a tag to follow expression of both human and mouse AdMAp44. The mouse MAp44 gene was cloned and AdmMAp44 constructed in the same manner. **B.** AdGFP vector was constructed in the same manner by one of our co-authors, Dr. Schaack. AdGFP (#7) was used as a negative control and to examine the efficiency of transduction in various organs.

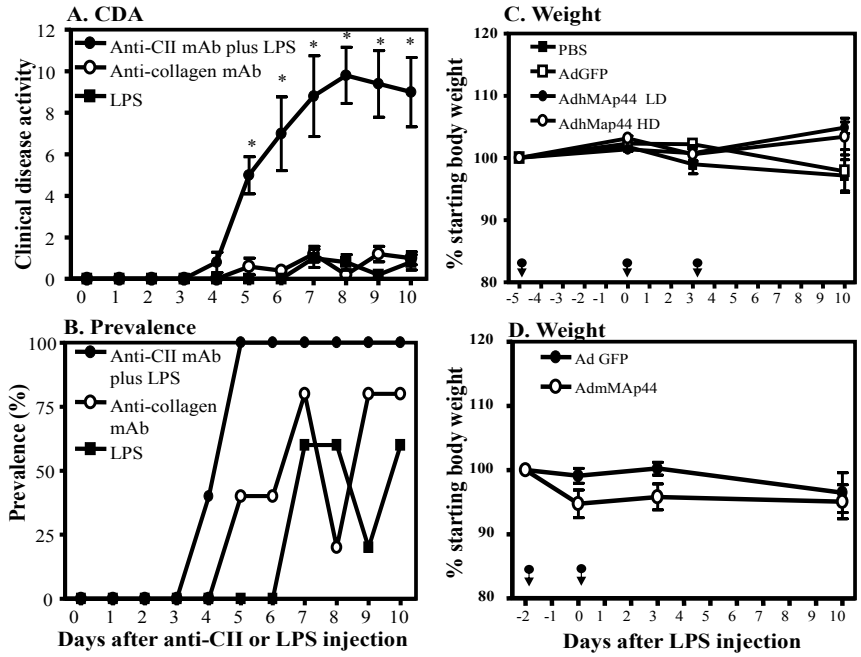

FIGURE S2. A & B show clinical disease activity and prevalence in WT with CAIA. **C-D** show percent change in weight over the course of a separate CAIA experiment. WT mice injected with anti-collagen mAb (arthritomab) alone or LPS alone developed none to low levels of disease in contrast mice injected with anti-collagen mAb followed by the LPS which developed severe disease. **A.** CDA in WT injected with anti-CII mAb/LPS, anti-CII mab or LPS **B.** Prevalence of disease (%) in WT mice injected with anti-CII mAb/LPS, anti-CII mab or LPS. The data represent the mean ± SEM based on n = 5 for each group. *$p < 0.05$ in comparison with anti-CII or LPS treatments. No major effect of AdhMAp44, AdmMAp44, or AdGFP as compared to PBS was found on the body weight of mice during the course of disease. **C.** Effect on body weight of a HD and LD of AdhMap44 as compared to AdGFP and PBS injected i.p. **D.** Effect on body weight of AdmMap44 as compared to AdGFP injected i.p. Data are shown as a percent (%) of starting body weight (Mean $\pm$ SEM). Black arrows in each graph show the injection time of AdhMAp44, AdmMap44, AdGFP or PBS.

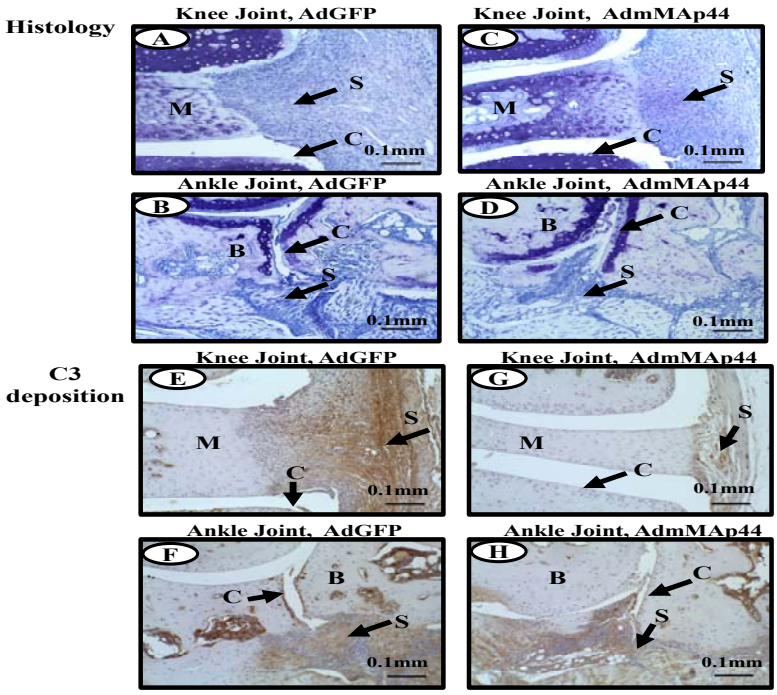

FIGURE S3. Representative histopathology and C3 deposition images from the knee joints of mice injected i.p. with AdmMAp44 or AdGFP followed by injection of anti-CII mAb and LPS. The top two panels from left to right **(A & C)** show staining with toluidine-blue (blue color) from the knee joints of WT mice treated with AdGFP (left panel) and AdmMAp44 (right panel). The second two panels from left to right **(B & D)** show staining with Toluidine-blue (blue color) from the ankle joints of WT mice treated with AdGFP (left panel) and AdmMAp44 (right panel). The third set of two panels from left to right **(E & G)** show staining with anti-C3 Ab (brown color) from the knee joints of WT mice treated with AdGFP (left panel) and AdmMAp44 (left panel). The fourth set of two panels from left to right **(F & H)** show staining with anti-C3 Ab (brown color) from the ankle joints of WT mice treated with AdGFP (left panel) and AdmMAp44 (left panel). Areas of synovium (S-black arrow), cartilage (C-black arrow), bone (B) and meniscus (M) are identified. Areas of synovium (S), cartilage (C), and meniscus (M) are identified with black arrows. Magnification for all knee joint and ankle joint images shown in Fig. S3 is 20X. Scale bar is 0.1mm (100μm).

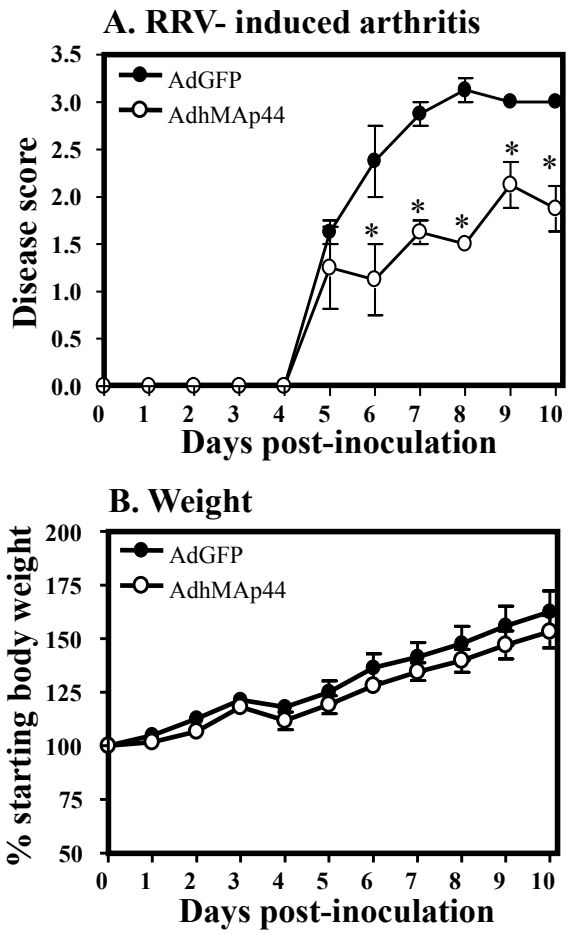

FIGURE S4. Effect of AdhMAp44 on RRV-induced arthritis. WT mice injected in the left rear footpad with AdGFP or AdhMAp44 at days -3, 0, and 0. The data shown are derived from the indicated days after the RRV injection in the right footpad. **A**. CDA over the duration of the experiment. **B**. Change in weight (%) over the duration of the experiment. The data represent the mean ± SEM based on n = 4 for each group.