SUPPLEMENTARY FIGURE LEGEND

Supplementary Figure S1: mRNA and protein expression of *Api5* in TC-1/P0 and TC-1/P3 (A17) cells. Left, Relative mRNA ratio was calculated by dividing the mRNA amount of *Api5* in TC-1/P3 (A17) by that in TC-1/P0, which was set as an internal control in each experiment. **Right**, Protein expression of Api5 was analyzed and compared between TC-1/P0 and TC-1/P3 (A17) cells. Numbers below each box represent fold induction compared with their controls.

Supplementary Figure S2: Api5 expression in murine tumors and their immune resistance. (a) Western blot analysis to characterize the expression of Api5 protein in various mouse tumor cells. **(b) Left**: expression of Api5, total Erk, pErk, and Bim in EL4/no insert and EL4/Api5 cells. **Right**: Flow cytometry analysis of apoptotic cell death among Api5-transfected EL-4 cells following exposure to antigen-specific CTL. Bar graph represents percentage of caspase-3^+ cells (Means$\pm$ S.D). **(c) Left Left**: Western blot analysis to characterize expression of total Erk, pErk, and Bim in the *siApi5* transfected B16 tumor cells. **Left Right**: Flowcytometry analysis of apoptotic cell death among *siApi5*-transfected B16 cells following exposure to antigen-specific CTL. Bar graph represents percentage of caspase-3^+ cells. **Right Left**: Western blot analysis to characterize the expression of total Erk, pErk, and Bim in the *siApi5* transfected LLC tumor cells. **Right Left** Flow cytometry analysis of apoptotic cell death among *siApi5* transfected LLC cells exposed to antigen-specific CTL. Bar graph represents the percentage of caspase-3^+ cells (n=5).

Supplementary Figure S3: *In vitro* Generation and Characterization of KKM MART1-specific CTL clone (a) Schematic of method used to generate MART1-specific CTL clone (KKM).Leukapheresis PBMC collected from HLA-$A2^+$ donor was used as a source of both

stimulator cells (dendritic cells) and responder T cells (T cells). Dendritic cells pulsed with the HLA-A2-restricted epitope peptide of MART-1 (M27) are co-cultivated with autologous T cells (Stim 1). Seven days later, cultures are restimulated with dendritic cells + M27 peptide to which IL-2 and IL-7 were added to expand MART-1-specific precursor CTL. On Day +14, CTL were cloned by limiting dilution and analyzed for MART-1-specificity. MART-1-specific CTL clones were expanded and re-tested for antigen specificity and phenotype ($CD3^+$, $CD8^+$). **(b)**From 30 clones that were selected, the KKM CTL clone was chosen for high affinity response to MART-1^+ targets and proliferative capacity (> 500-fold expansion, data not shown). Chromium release assay demonstrates the specific lysis of MART-1^+, $A2^+$ 526mel, but not MART-1-negative, $A2^+$ A375 melanoma line by KKM clones. [effector to target (E:T) ratios of 1:1, 3:1 and 10:1]. KKM specifically lysis an $A2^+$ LCL line pulsed with the A2-restricted MART-1 epitope peptide, M27, but not an irrelevant A2-restricted NY157 peptide.

Supplementary Figure S4: Characterization of antigen presenting capacity of A375/no insert and A375/API5 cells *in vitro* (a) Flow cytometry analysis to characterize MHC class I expression on A375/no insert and A375/API5 cells. PE-conjugated anti-human HLA-A2 monoclonal antibody was used to detect surface MHC class I expression. The isotype antibody was used as the negative control (gray profile). **(b)** Intracellular cytokine staining and flow cytometry analysis to determine the percentage of IFN-γ^+ MART-1-specific $CD8^+$ T cells against A375/no insert or A375/API5 cells in CTL assays (16h) **(c)** Flow cytometry analysis to show the T cell death in CTL assays in response to A375/API5 tumor cells (4 h). Bar graph represents the percentage of active caspase-3^+ T cells.

Supplementary Figure S5: API5 activates FGFR1 signaling pathway (a) Total cell lysates from HEK293/no insert and HEK293/API5 were subjected to phospho-RTK array. **(b)**

Expression of API5 and FGF2 by Western blot analysis in various human tumor cells: HeLa and CaSki for cervical carcinoma, MCF-7 and MDA-231 for breast adenocarcinoma, DU145, PC-3 and LNCaP for prostate cancer, SNU-C4, SNU-368 and HCT116 for colon cancer, HepG2 for liver carcinoma, A549 and H1299 for lung carcinoma, A375 and 526mel for melanoma.