

**Supplementary Figure 1. Raw data from flow cytometry**

A) The processes of choosing the cells. Firstly, the lymphocytes were chosen; secondly, non-adherent cells were chosen; thirdly, living cells (APC-Cy7 negative cells) were chosen; fourthly, CD4<sup>+</sup>CD8<sup>-</sup> cells were chosen; lastly, CD4<sup>+</sup>FOXP3<sup>+</sup> cell were chosen. B) Fluorescence minus one (FMO) control. Samples from the same patient are divided into two equal parts, sample A and sample B. In sample A, all fluorescent dyes were added except FOXP3 (FMO). In Sample B, all fluorescent dyes were added.

**Supplementary Figure 2. Raw data from mouse experiments**

A) HE staining, CD44 and Snail immunohistochemical sections of liver and lung tissues of mice (×400). B) HE staining sections of liver and lung tissues of mice (×100); i-vi: liver; vii-viii: lung. Green arrows indicate metastasis lesions. HE: hematoxylin eosin; C) Preliminary experimental results. All the mice (balb/c wild type, female, 6-week, n=16) were purchased from Jackson lab and all animal studies are approved by the Research Ethics Committee.  $2 \times 10^5$  4T1 suspension was injected into the fourth pair of mammary fat pads on the left under the skin of each mouse. After the average tumor size exceeded  $150\text{mm}^3$ , mice in group A were given solvent DMSO, mice in group B were given no treatment and mice in group C were given Boc1. Boc1 was intraperitoneally injected into mice in group C (n=3) at a dose of 10mg/Kg. The same dose of DMSO was intraperitoneally injected into mice in group A (n=3). Data are presented as mean  $\pm$  SD (n=3); ns, not significant, \*\*\*P<0.001 as determined by as determined by Student's t-test.