

Fig. S1 Integrin  $\beta$ 7 deficiency led to lack of T cells in the small intestine and did not impair the morphology of the small intestine.

**a** Representative immunofluorescent images of CD3<sup>+</sup> T cells in the small intestine of WT and  $\beta7^{-/-}$  mice. E-cadherin (green), CD3 (red), DAPI (blue). Scale bars, 50 µm. **b** Representative H&E staining images (left) and quantification of villus and crypt length (right) in the proximal, middle and distal small intestine for WT and  $\beta7^{-/-}$  mice. Scale bars, 50 µm. Data are collected from more than 100 well-oriented villi or crypts from WT (n=6) and  $\beta7^{-/-}$  (n = 6) mice, and represented as mean  $\pm$  SEM, ns, no significant difference, *t*-test.