Supplementary S3: Immunohistochemistry (IHC) and Hematoxylin-eosin (HE) staining

**Hematoxylin-eosin (HE) staining**
Cut the paraffin-embedded esophagus tissue into thin slices. Then, they were dewaxed by xylene (3 times, 3 min respectively) and hydrated by graded alcohol (100%, 85%, 75%, 3 min respectively). After rinses with running water, hematoxylin solution was used to stain (5 min). Then, the slides were dehydrated again with ethanol and followed by wash with running water (5 min). Finally, the slides were stained again with eosin. Sealed the slides after dehydration.

**Immunohistochemistry (IHC)**
Paraffin-embedded esophagus tissue sections were placed in a 70°C oven for 60 min. The slides were deparaffinized in xylene and then hydrated by graded alcohol (100%, 85%, 75%, 5 min respectively). Put the slides in 100°C citrate solution for 4 min to repair antigen (high pressure) and next rinsed them with running water until cool down to room temperature. Then, the slides were washed 3 times with PBS for 3 min each time. After an incubation with endogenous peroxidase blocker for 15 min at room temperature (Maixin, China) and washed with PBS, the sections were incubated with normal nonimmune serum to block nonspecific staining (15 min, room temperature). Then, all slides were incubated with anti-CD86 (91882S, 1:200, CST, America) overnight at 4°C. Thawed the slides for 1 h at room temperature and followed wash with PBS (3 times, 3 min respectively). The samples were incubated with anti-CD86 (91882S, 1:200, CST, America) overnight at 4°C. Finally, brief hematoxylin staining (1 min and 30 s) was performed after washing with running water (5 min). Sealed the slides with resin after dehydration.