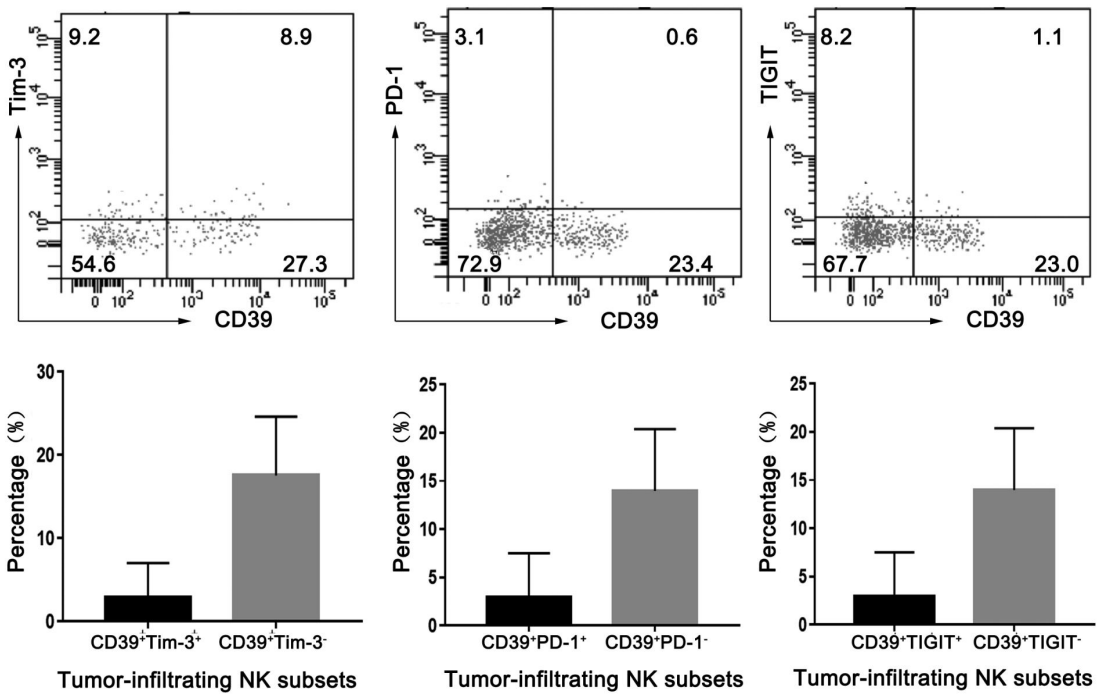
Supplementary Table 1 Clinicopathological features of 36 patients with esophageal squamous cell carcinoma

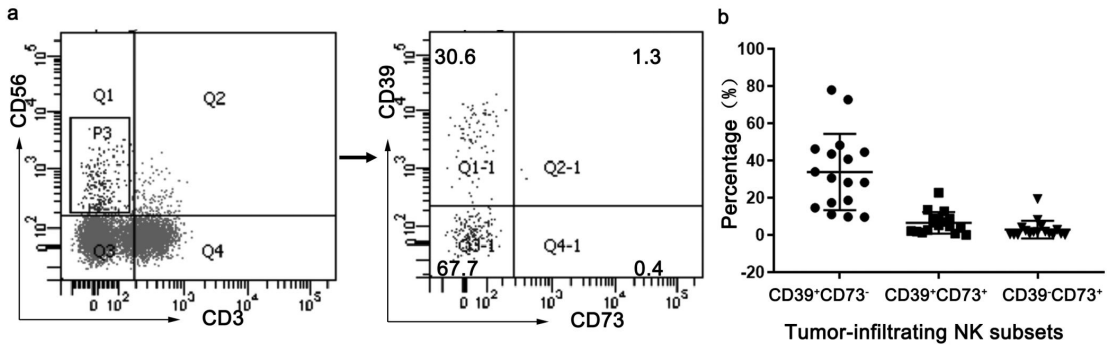
Clinical feature	N=36
Gender	
Male	13
Female	23
Age（years）	
<60	9
≥60	27
Tumor infiltration	
Lamina propria or submucosa	3
Muscularis propria	12
Adventitia	19
Adjacent structures	2
Lymph node metastasis	
Present	14
Absent	22
Pathological stage	
I, II	23
III, IV	13

Supplementary Table 2 Fluorophore-conjugated antibodies

Antibody	Fluorophore	Manufacturer
Human anti-CD3	APC-CY7, FITC, PE-CY7	BioLegend
Human anti-CD56	PE, PE-CY7, APC-CY7	BioLegend
Human anti-CD39	PE, APC	BioLegend
Human anti-GzmB	FITC	BioLegend
Human anti-IFN-γ	APC	BioLegend
Human anti-Ki67	APC, FITC	BioLegend
Human anti-CD73	FITC	BioLegend
Human anti-Tim-3	PE	BioLegend
Human anti-PD-1	FITC	BioLegend
Human anti-TIGIT	PE	BioLegend



Supplementary Fig. 1 Characterization of other inhibitory receptors along with CD39 on tumor-infiltrating $CD39^+$ NK cells from ESCC patients (n=4). (Top panel) Representative FACS plots of other inhibitory receptors (Tim-3, PD-1and TIGIT) along with CD39 on tumor-infiltrating NK cells from a ESCC patient. (Bottom panel) Statistical analysis of other inhibitory receptors (Tim-3, PD-1and TIGIT) on $CD39^+$ NK cell subset and $CD39^-$ NK cell subset.



Supplementary Fig. 2 Co-expression of CD39 and CD73 on tumor-infiltrating NK cells from ESCC patients (n=17). (a) Gating strategy shown by representative FACS plots. (b) Statistical analysis of tumor-infiltrating NK cell subsets.