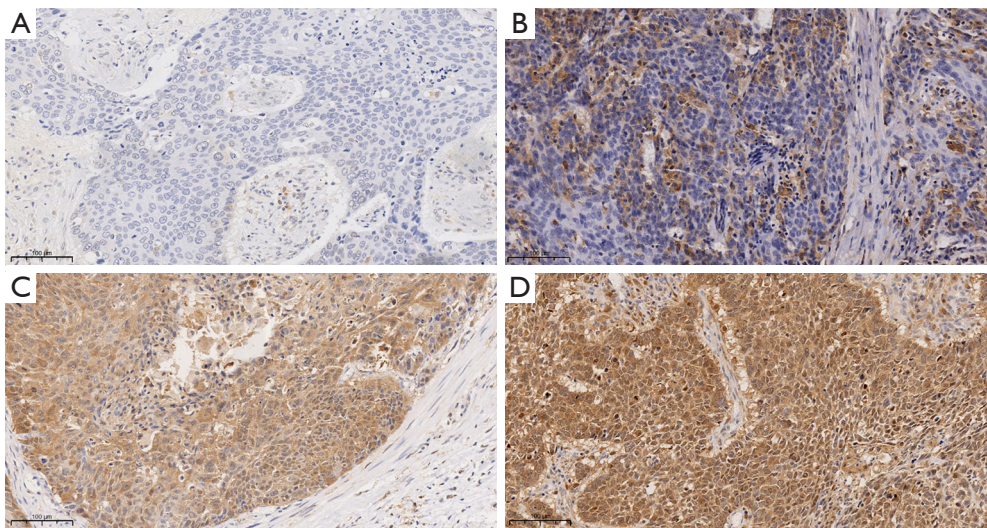**Figure S1** Representative immunohistochemistry picture of ACSL4 expression for 4 scoring points: (A) 0; (B) 1; (C) 2; (D) 3. Scale bars: 100 µm. ACSL4, acyl-CoA synthetase long-chain family member 4.

Figure S2 Representative immunohistochemistry picture of GPX4 expression for 4 scoring points: (A) 0; (B) 1; (C) 2; (D) 3. Scale bars: 100 µm. GPX4, glutathione peroxidase 4.

Table S1 Clinicopathologic risk factors for disease-free survival in ESCC

Variables	Univariate analysis		Multivariate analysis	
	HR (95% CI)	P value	HR (95% CI)	P value
Age (≥65 vs. <65 years)	1.419 (0.875, 2.302)	0.16	–	–
Sex (female vs. male)	1.111 (0.608, 2.031)	0.73	–	–
LDH (per 10 U/L increase)	1.055 (0.973, 1.143)	0.19	–	–
Tumor length (≥5 vs. <5 cm)	1.650 (1.030, 2.645)	0.03	1.897 (1.168, 3.082)	0.01
Tumor location (upper vs. middle and lower)	1.206 (0.646, 2.253)	0.56	–	–
Pathological grade (3 vs. 1–2)	0.955 (0.561, 1.628)	0.87	–	–
Pathological TNM stage (III/IVa vs. II)	1.771 (0.998, 3.142)	0.05	2.164 (1.196, 3.919)	0.01
ACSL4 (low vs. high)	3.467 (2.074, 5.796)	<0.001	3.860 (2.278, 6.540)	<0.001
GPX4 (low vs. high)	0.391 (0.173, 0.880)	0.02	0.432 (0.189, 0.989)	0.05

ESCC, esophageal squamous cell carcinoma; LDH, lactate dehydrogenase; TNM, tumor, node and metastasis; ACSL4, acyl-CoA synthetase long-chain family member 4; GPX4, glutathione peroxidase 4; HR, hazard ratio; CI, confidence interval.

Table S2 Clinicopathologic risk factors for overall survival in ESCC

Variables	Univariate analysis		Multivariate analysis	
	HR (95% CI)	P value	HR (95% CI)	P value
Age (≥65 vs. <65 years)	1.664 (1.010, 2.741)	0.05	–	–
Sex (female vs. male)	1.107 (0.591, 2.072)	0.75	–	–
LDH (per 10 U/L increase)	1.066 (0.982, 1.157)	0.13	–	–
Tumor length (≥5 vs. <5 cm)	1.720 (1.054, 2.809)	0.03	1.973 (1.196, 3.254)	0.008
Tumor location (upper vs. middle and lower)	1.074 (0.560, 2.060)	0.83	–	–
Pathological grade (3 vs. 1–2)	1.084 (0.631, 1.864)	0.77	–	–
Pathological TNM stage (III/IVa vs. II)	1.885 (1.024, 3.469)	0.04	2.213 (1.189, 4.119)	0.01
ACSL4 (low vs. high)	2.962 (1.727, 5.080)	<0.001	3.252 (1.877, 5.635)	<0.001
GPX4 (low vs. high)	0.458 (0.202, 1.037)	0.06	–	–

ESCC, esophageal squamous cell carcinoma; LDH, lactate dehydrogenase; TNM, tumor, node and metastasis; ACSL4, acyl-CoA synthetase long-chain family member 4; GPX4, glutathione peroxidase 4; HR, hazard ratio; CI, confidence interval.