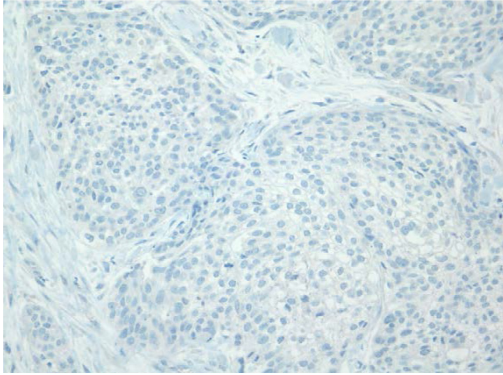
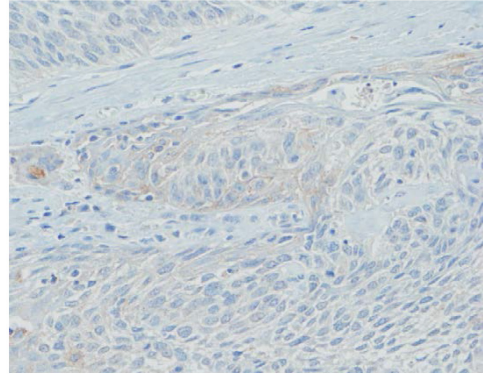


SUPPLEMENTARY FIGURES AND TABLES

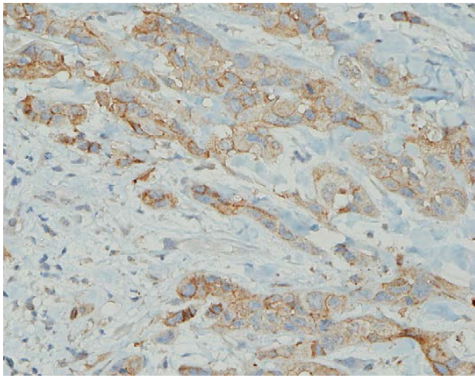
A PD-L1 negative



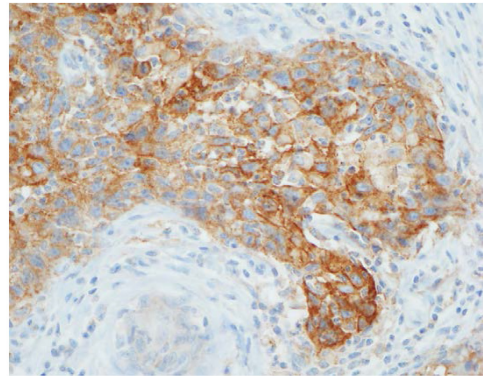
B PD-L1 1+



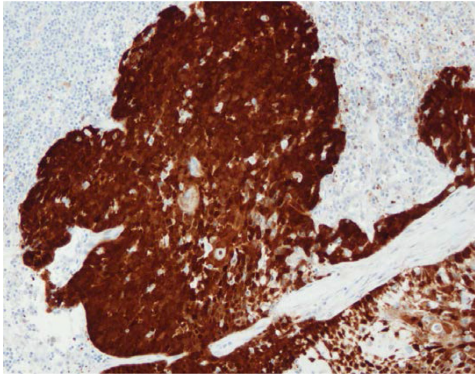
C PD-L1 2+



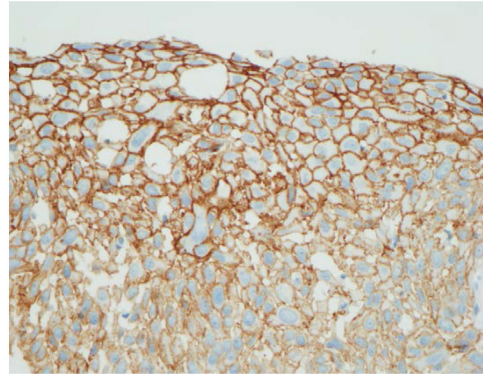
D PD-L1 3+



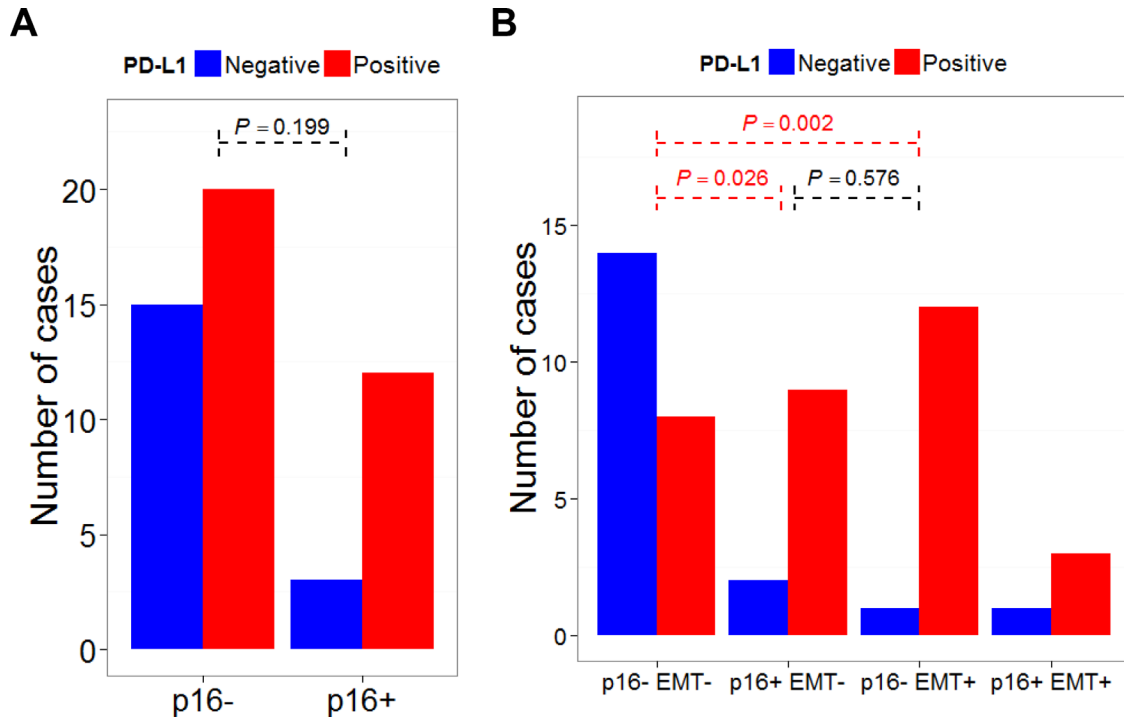
E p16 positive



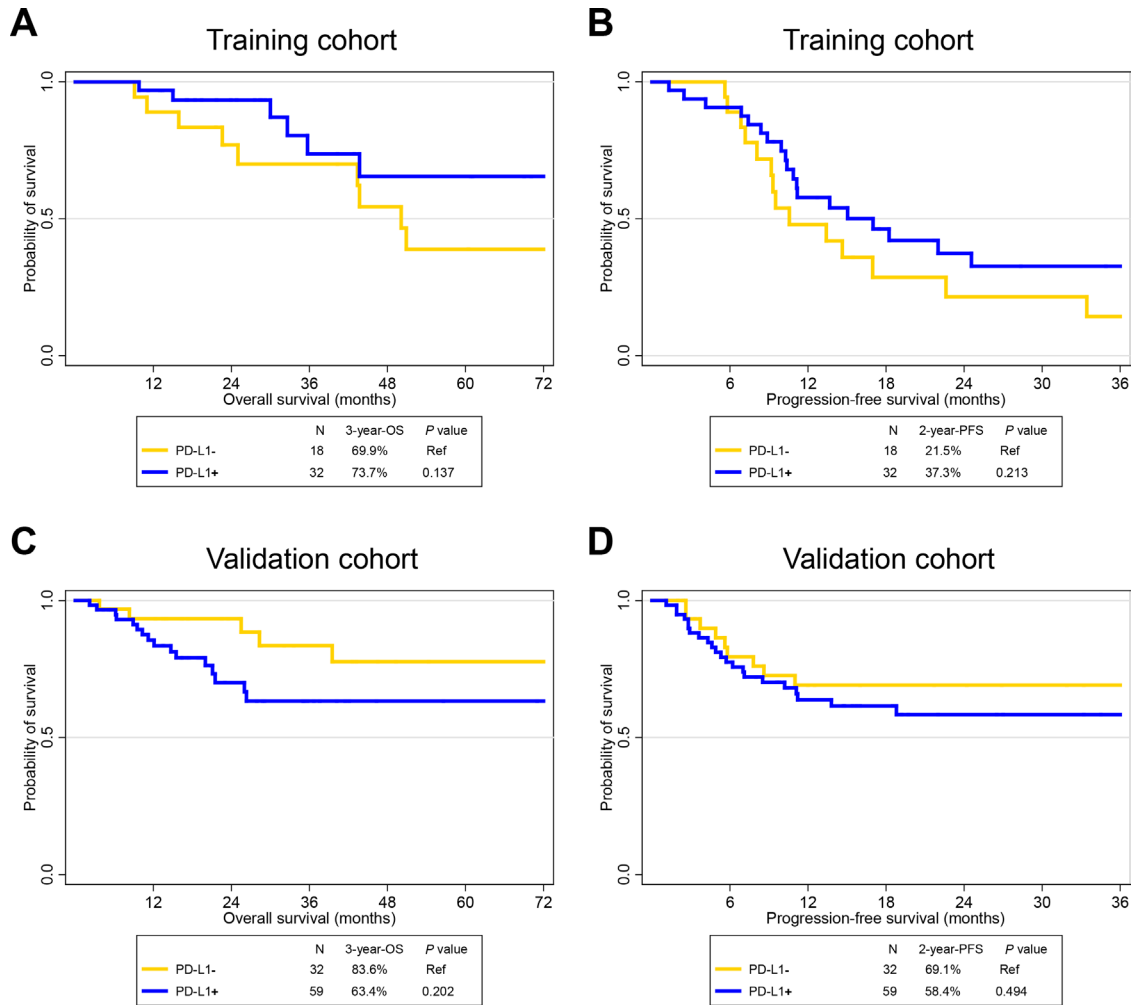
F E-cadherin high



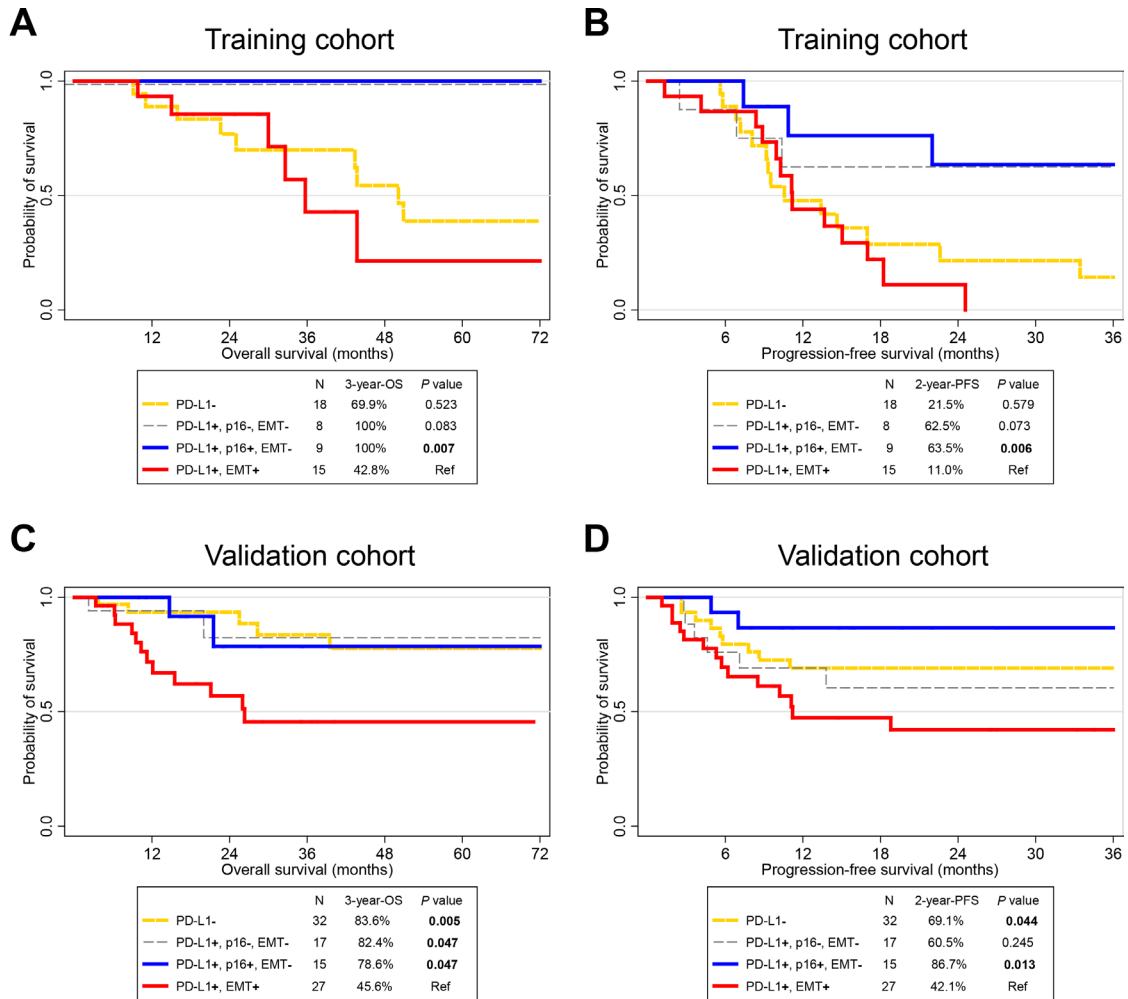
Supplementary Figure S1: Representative immunohistochemistry stain of PD-L1-negative. A. 1+ B. 2+ C. and 3+ D. (x400), as well as p16-positive E. (x200) and high E-cadherin expression F. (x400)



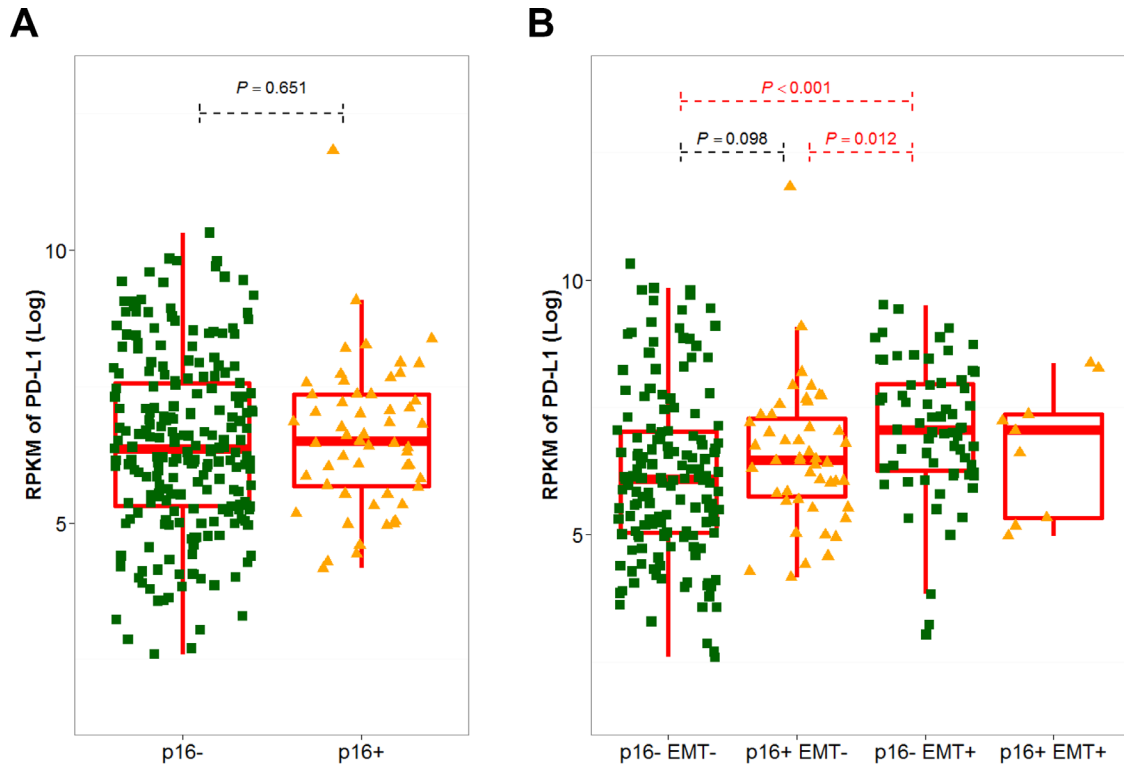
Supplementary Figure S2: PD-L1 positivity according to p16 and epithelial-mesenchymal transition (EMT) status. Number of cases with PD-L1 negative (blue bar) and positive (red bar) according to p16 **A.** and p16/EMT status **B.**



Supplementary Figure S3: Survival analysis according to PD-L1 in HNSCC patients of training (A, B) and validation cohorts (C, D). A Kaplan-Meier plot of overall survival (OS; A, C) and progression-free survival (PFS; B, D) according to PD-L1 statuses. Abbreviation: HNSCC, head and neck squamous cell carcinoma; Ref, reference.



Supplementary Figure S4: Survival analysis according to PD-L1, p16, and epithelial-mesenchymal transition status in HNSCC patients of training (A, B) and validation cohorts (C, D). A Kaplan-Meier plot of overall survival (OS; A, C) and progression-free survival (PFS; B, D) according to PD-L1, p16, and epithelial-mesenchymal transition (EMT) status. Abbreviation: HNSCC, head and neck squamous cell carcinoma; Ref, reference.



Supplementary Figure S5: PD-L1 expression according to p16 and EMT status in The Cancer Genome Atlas (TCGA). PD-L1 expression calculated by Log₂ value of its RPKM is compared according to p16 status **A.** and p16/EMT status **B.**

Supplementary Table S1: Epithelial-mesenchymal transition (EMT)-associated gene lists

See Supplementary File 1

Supplementary Table S2: Univariate analysis of factors affecting progression-free survival

		Training cohort				Validation cohort			
		Univariate		Multivariate		Univariate		Multivariate	
		HR (95% CI)	P value	HR (95% CI)	P value	HR (95% CI)	P value	HR (95% CI)	P value
Age	Continuous	1.02 (0.99-1.05)	0.092			1.00 (0.97-1.02)	0.830		
Sex	Female (vs. Male)	0.66 (0.28-1.60)	0.359			1.14 (0.57-2.27)	0.718		
Smoking	Yes (vs. No)	1.15 (0.58-2.27)	0.693			0.86 (0.40-1.84)	0.698		
ECOG	1 (vs. 0)	0.64 (0.30-1.33)	0.231			2.73 (1.41-5.29)	0.003	2.90 (1.49-5.62)	0.002
Stage	Continuous	1.19 (0.83-1.71)	0.336			0.94 (0.70-1.28)	0.707		
Location	Oropharynx (vs. Non-oropharynx)	0.53 (0.25-1.10)	0.089			0.60 (0.30-1.21)	0.153		
PD-L1	Positive (vs. Negative)	0.66 (0.34-1.28)	0.217			1.27 (0.64-2.54)	0.496		
p16	Positive (vs. Negative)	0.48 (0.22-1.04)	0.062			0.51 (0.24-1.09)	0.084		
EMT	Positive (vs. Negative)	1.99 (0.99-3.99)	0.051			2.06 (1.06-4.00)	0.033	2.24 (1.15-4.35)	0.018

Abbreviation: ECOG, Eastern Cooperative Oncology Group performance status; HR, hazard ratio; CI, confidence interval; EMT, epithelial-mesenchymal transition.