

**Appendix 2.** PD-L1 expression in R/M HNSCC cases according to patients' characteristics (Without statistically significant differences).

<i>Variables</i>	<i>Overall (N=402)</i>	<i>PD-L1 with CPS<math>\geq</math>20 (n=168)</i>	<i>PD-L1 with CPS&lt;20 (n=234)</i>	<i>Odds ratio (95% CI)<sup>#</sup></i>	<i>P value<sup>#</sup></i>	
<b>Age at initial diagnosis</b>	≤60 years	256	103 (40.2%)	153 (59.8%)	1.17 (0.777, 1.772)	0.4463
	>60 years	145	64 (44.1%)	81 (55.9%)		
	≤70 years	361	146 (40.4%)	215 (59.6%)	1.63 (0.845, 3.134)	0.1451
	>70 years	40	21 (52.5%)	19 (47.5%)		
<b>Alcohol consumption</b>	Alcohol dependent	26	10 (38.5%)	16 (61.5%)	1	0.5730
	Heavy drinker	47	15 (31.9%)	32 (68.1%)		
	Occasional drinker	49	14 (28.6%)	35 (71.4%)		
	Abstinent	273	126 (46.2%)	147 (53.8%)		
<b>Clinical stage of HPV at initial diagnosis</b>	I	1	0 (0.0%)	1 (100.0%)	NA	NA
	II	1	0 (0.0%)	1 (100.0%)		
	IV	1	0 (0.0%)	1 (100.0%)		
<b>Clinical stage at initial diagnosis</b>	I	4	3 (75.0%)	1 (25.0%)	0.85 (0.590, 1.239)	0.4074
	II	10	4 (40.0%)	6 (60.0%)		
	III	132	61 (46.2%)	71 (53.8%)		
	IVA	58	24 (41.4%)	34 (58.6%)		
	IVB	10	5 (50.0%)	5 (50.0%)		
	IVC	1	0 (0.0%)	1 (100.0%)		
<b>Stage of HPV-mediated oropharyngeal cancer</b>	I	1	0 (0.0%)	1 (100.0%)	NA	NA
	II	1	0 (0.0%)	1 (100.0%)		
	IV	1	0 (0.0%)	1 (100.0%)		
<b>Stage of cancer at the oropharyngeal(p16-) and hypopharynx, nasal cavity and</b>	I	4	3 (75.0%)	1 (25.0%)	0.93 (0.646, 1.325)	0.6707
	II	7	3 (42.9%)	4 (57.1%)		
	III	128	59 (46.1%)	69 (53.9%)		
	IVA	70	27 (38.6%)	43 (61.4%)		

<b>paranasal sinuses, larynx</b>	IVB	15	9 (60.0%)	6 (40.0%)		
<b>Clinical and pathological stage of HNSCC (HPV-mediated oropharyngeal cancer)</b>						
<b>pT</b>	T1	1	0 (0.0%)	1 (100.0%)	NA	NA
	T2	1	0 (0.0%)	1 (100.0%)		
	T3	1	0 (0.0%)	1 (100.0%)		
<b>cN</b>	N1	1	0 (0.0%)	1 (100.0%)	NA	NA
	N2	1	0 (0.0%)	1 (100.0%)		
	N3	1	0 (0.0%)	1 (100.0%)		
<b>pN</b>	N0	1	0 (0.0%)	1 (100.0%)	NA	NA
	N1	1	0 (0.0%)	1 (100.0%)		
<b>Clinical and pathological stage of HNSCC(HPV-negative)</b>						
<b>pT</b>	T1	58	28 (48.3%)	30 (51.7%)	0.98 (0.823, 1.179)	0.8687
	T2	90	39 (43.3%)	51 (56.7%)		
	T3	49	18 (36.7%)	31 (63.3%)		
	T4	17	5 (29.4%)	12 (70.6%)		
	T4a	40	18 (45.0%)	22 (55.0%)		
	T4b	3	3 (100.0%)	0 (0.0%)		
<b>pN</b>	N0	31	10 (32.3%)	21 (67.7%)	1.17 (0.980, 1.392)	0.0831
	N1	128	58 (45.3%)	70 (54.7%)		
	N2a	7	1 (14.3%)	6 (85.7%)		
	N2b	27	11 (40.7%)	16 (59.3%)		

	N2c	18	10 (55.6%)	8 (44.4%)		
	N3b	12	8 (66.7%)	4 (33.3%)		
<b>pM</b>	M0	146	54 (37.0%)	92 (63.0%)	0.43 (0.046, 3.910)	0.4505
	M1	5	1 (20.0%)	4 (80.0%)		
<b>Age at diagnosis of recurrent and/or metastatic HNSCC</b>	≤60 years	220	89 (40.5%)	131 (59.5%)	1.22 (0.803, 1.856)	0.3514
	>60 years	150	68 (45.3%)	82 (54.7%)		
<b>Disease status</b>	≤70 years	324	132 (40.7%)	192 (59.3%)	1.73 (0.931, 3.222)	0.0831
	>70 years	46	25 (54.3%)	21 (45.7%)		
	Recurrent disease with no distant metastases	126	53 (42.1%)	73 (57.9%)	1	
	Recurrent disease with distant metastases	12	7 (58.3%)	5 (41.7%)	1.93 (0.580, 6.408)	0.2839
	Newly diagnosed metastatic disease	241	102 (42.3%)	139 (57.7%)	1.01 (0.653, 1.564)	0.9618
<b>Metastatic sites</b>	Lung	11	6 (54.5%)	5 (45.5%)		
	Liver	1	0 (0.0%)	1 (100.0%)		
	Others	282	119 (42.2%)	163 (57.8%)		
<b>ECOG PS</b>	0-1	140	71 (50.7%)	69 (49.3%)	0.32 (0.033, 3.190)	0.3341
	2	4	1 (25.0%)	3 (75.0%)		
<b>Bio-specimen site</b>	Primary tumor	380	162 (42.6%)	218 (57.4%)	1	
	Lymph node	8	2 (25.0%)	6 (75.0%)	0.45 (0.089, 2.251)	0.3300
	Metastatic lesion	14	4 (28.6%)	10 (71.4%)	0.54 (0.166, 1.747)	0.3024
<b>Bio-specimen type</b>	Biopsy	22	8 (36.4%)	14 (63.6%)	1.27 (0.521, 3.106)	0.5963
	Surgical resection	380	160 (42.1%)	220 (57.9%)		
<b>Treatment history</b>	Surgery					
	No	83	28 (33.7%)	55 (66.3%)	1.54 (0.926, 2.548)	0.0962
	Yes	319	140 (43.9%)	179 (56.1%)		

Radiation	No	351	147 (41.9%)	204 (58.1%)	0.97 (0.535, 1.764)	0.9243
	Yes	51	21 (41.2%)	30 (58.8%)		
Systemic therapy	No	338	140 (41.4%)	198 (58.6%)	1.10 (0.642, 1.886)	0.7290
	Yes	64	28 (43.8%)	36 (56.3%)		
Immunotherapy	No	391	163 (41.7%)	228 (58.3%)	1.17 (0.350, 3.885)	0.8029
	Yes	11	5 (45.5%)	6 (54.5%)		
Chemotherapy	No	343	144 (42.0%)	199 (58.0%)	0.95 (0.540, 1.663)	0.8516
	Yes	59	24 (40.7%)	35 (59.3%)		
Targeted therapy	No	389	161 (41.4%)	228 (58.6%)	1.65 (0.545, 5.008)	0.3749
	Yes	13	7 (53.8%)	6 (46.2%)		
<b>HPV status</b>	Positive	15	5 (33.3%)	10 (66.7%)	1.28 (0.369, 4.438)	0.6972
	Negative	41	16 (39.0%)	25 (61.0%)		
	P16 positive	13	5 (38.5%)	8 (61.5%)		
	Non- P16 positive	2	0 (0.0%)	2 (100.0%)		

Footnote: The row percentage is calculated.

#-OR, 95% CI or OR P value are calculated by univariate logistic regression.

P values are rounded to 4 decimal places. OR values are rounded to 2 decimal places. The lower and upper bounds of CI are rounded to 3 decimal places.

Systemic therapy includes immunotherapy, chemotherapy and targeted therapy.