Table S1. Characteristics of the cohort. data not available (d.n.a.), Primary Tumor (PT), Lymph node metastasis (LN), Distant metastasis (DM), Local recurrence (LR), Cancer of unknown primary (CUP), positive (pos.), negative (neg.), without (w/o), progression (prog), overall survival (OS), Progrssion-free survival (PFS)

				LSD1 staining n=		SNAIL staining n=
Patients analyzed				339		339
		d.n.a.		5		7
Tissue Type		PT		334		332
		LN		163		165
		DM		22		21
		LR		59		57
Sub-Site		Hypopharynx		46		46
		Larynx		98		95
		Oral Cavity		76		76
		Oropharynx		103		104
		CUP / d.n.a.		11		11
Sex		male		259		258
		female		74		73
		d.n.a.		1		1
Age		≤ 61		54		52
		> 61		178		178
		d.n.a.		2		2
T-Stage		T1		68		69
		T2		98		98
		T3		96		96
		T4		70		67
		d.n.a.		2		2
N-Stage		N0		147		146
		N1		51		51
		N2		83		83
		N3		50		50
		d.n.a.		3		3
M-Stage		M0		317		315
		M1		14		14
		d.n.a		3		3
UICC		I		66		69
		II		59		57
		II		59		59
		IV		149		146
		d.n.a.		1		1
p16		pos.		85		88
		neg.		249		244
		d.n.a.		0		0
Alcohol cons.		Yes		139		139
		No		183		180
		d.n.a.		2		3
Nicotine cons.		Yes		281		279
		No		36		35
		d.n.a.		17		18
5 y. PFS		dead or prog.		148		147
		alive w/o prog		178		177
		d.n.a.		8		8
5 y. OS		dead		119		117
		alive		207		107
		d.n.a.		8		8

Table S2. Univariate and multivariate Cox regression for PFS in primary hypopharyngeal HNSCC. Survival analysis of 5-year PFS in primary hypopharyngeal head and neck squamous cell carcinoma (HNSCC) using the Cox proportional hazards regression model. Only tumor and patient characteristics showing a significant correlation with 5-year PFS in the univariate analysis were included in the multivariate analysis. Characteristics and corresponding p-values showing a significant correlation in the multivariate analysis are bold.

Variable	Category	Univariate HR (95% -Konf. Int., p=)	Multivariate HR (95%- conf. int., p=)
LSD1-Expression	LSD1 low	2.53 (1.05-6.09, p=0.038)	3.72 (1.24-10.94, **p=0.028**)
	LSD high		
T- Stage	T1,2,3	3.25 (1.29-8.21, p=0.013)	1.03 (0.35-3.01, p=0.924)
	T4		
N-Stage	N0,1	4.18 (1.53-11.43, p=0.005)	0.15 (0.02-1.02, p=0.052)
	N2,3		
M-Stage	M0	4.21 (0.53-33.28, p=0.173)	
	M1		
UICC-Stage	UICC I,II,III	7.37 (2.16-25.15, p=0.001)	44.56 (4.18-475.45, **p=0.002**)
	UICC IV		
Sex	Male	0.39 (0.09-1.66, p=0.202)	
	Female		
Age	≤ 61 y.	0.97 (0.42-2.22, p=0.943)	
	> 61 y.		
p16	Positive	2.76 (0.37-20.51, p=0.321)	
	Negative		
Alcohol	Yes	0.71 (0.28-1.75, p=0.453)	
	No		
Nicotine	Yes	2.63 (0.61-11.41, p=0.197)	
	No		

Table S3. Univariate and multivariate Cox regression for in primary HNSCC. 5-year OS analysis using the Cox proportional hazards regression model. Multivariate analysis was performed with all tumor and patient characteristics showing a significant correlation with patient survival in the univariate analysis. Characteristics and corresponding p-values showing a significant correlation in the multivariate analysis are bold.

Variable	Category	Univariate HR (95% -Konf. Int., p=)	Multivariate HR (95%- conf. int., p=)
SNAIL-Expression	SNAIL low / SNAIL high	1.45 (1.01-2.10, p=0.046)	1.57 (1.07-2.31, **p=0.021**)
T- Stage	T1,2 / T3,4	2.14 (1.47-3.11, p<0,001)	1.79 (1.08-2.99, **p=0.025**)
N-Stage	N0 / N1,2,3	1.67 (1.14-2.44, p=0.009)	1.49 (0.98-2.36, p=0.088)
M-Stage	M0 / M1	5.15 (2.74-9.67, p<0.001)	5.15 (2.64-10.03, **p<0.001**)
UICC-Stage	UICC I,II / UICC III,IV	2.32 (1.52-3.53, p<0,001)	1.19 (0.61-2.34, p=0.606)
Sex	Male / Female	0.80 (0.51-1.27, p=0.345)	
Age	≤ 61 y. / > 61 y.	1.25 (0.86-1.81, p=0.236)	
p16	Positive / Negative	1.93 (1.20-3.13, p=0.007)	1.70 (0.96-3.01, p=0.071)
Alcohol	Yes / No	0.57 (0.40-0.84, p=0.004)	0.74 (0.50-1.09, p=0.125)
Nicotine	Yes / No	0.60 (0.29-1.22, p=0.158)	

Table S4. Univariate and multivariate cox regression of PFS in primary HNSCC. Survival analysis of 5-year PFS in primary HNSCC using the Cox proportional hazards regression model. All tumor and patient characteristics showing a significant correlation with 5-year survival in the univariate analysis were included in the multivariate analysis. Characteristics and corresponding p-values showing a significant correlation in the multivariate analysis are bold.

Variable	Category	Univariate HR (95% -Konf. Int., p=)	Multivariate HR (95%- conf. int., p=)
SNAIL-Expression	SNAIL low SNAIL high	1.63 (1.17-2.26, p=0.004)	1.82 (1.29-2.57, **p=0.001**)
T- Stage	T1,2 T3,4	2.10 (1.51-2.94, p<0.001)	1.79 (1.12-2.85, **p=0.014**)
N-Stage	N0 N1,2,3	1.40 (1.00-1.95, p=0.051)	
M-Stage	M0 M1	3.41 (1.83-6.32, p<0.001)	3.45 (1.80-6.63, **p<0.001**)
UICC-Stage	UICC I,II UICC III,IV	2.19 (1.52-3.16, p<0.001)	1.38 (0.81-2.34, p=0.238)
Sex	Male Female	0.84 (0.56-1.26, p=0.398)	
Age	≤ 61 y. > 61 y.	1.22 (0.88-1.69, p=0.241)	
p16	Positive Negative	2.20 (1.42-3.41, p<0.001)	1.79 (1.10-2.90, **p=0.018**)
Alcohol	Yes No	0.63 (0.45-0.87, p=0.006)	0.81 (0.57-1.14, p=0.224)
Nicotine	Yes No	0.76 (0.43-1.35, p=0.354)	

Figure S1. Examplary HE stained TMA Cores. Examplary Tissue Micro Array (TMA) cores of the cohort stained with standard hematoxylin and eosin (HE) staining.