

Summary of patient characteristics with newly diagnosed HNSCC

	All patients	SMAD-positive	SMAD-negative	P value
<b>Marker</b>				
SMAD4	130	113 (86.9%)	6 (4.6%)	
N/A	11 (8.5%)			
<b>Age at diagnosis</b>				0.21
Mean(SD)	59.3 (13.1)	59.5 (13.1)	67.5 (15)	
Median, range	58, 58–94	58, 58–94	64, 64–93	
<b>Gender</b>				0.35
Female	34( 26.2%)	30 (26.5%)	3 (50%)	
Male	96 (73.8%)	83 (73.5%)	3 (50%)	
<b>Primary tumor site</b>				0.21
Oropharynx	63 (48.5%)	56 (49.6%)	1 (16.7%)	
Other	67 (51.5%)	57 (50.4%)	5 (83.3%)	
<b>T stage at diagnosis</b>				0.21(T0/T1/T2 vs. T3/T4)
T0	3 (2.3%)	2 (1.8%)	1 (16.7%)	
T1	17 (13.1%)	13 (11.5%)	3 (50%)	
T2	50 (38.5%)	44 (38.9%)	1 (16.7%)	
T3	17 (13.1%)	14 (12.4%)	0 (0%)	
T4	43 (33.1%)	40 (35.4%)	1 (16.7%)	
<b>N stage at diagnosis</b>				0.4(N0/N1 vs. N2/N3)
N0	27 (20.8%)	25 (22.1%)	2 (33.3%)	
N1	14 (10.8%)	12 (10.6%)	1 (16.7%)	
N2	69 (53.1%)	61 (54%)	2 (33.3%)	
N3	20 (15.4%)	15 (13.3%)	1 (16.7%)	
<b>Recurrence</b>				
Local	39 (30%)	34 (30.1%)	4 (66.7%)	
Distant	10 (7.7%)	8 (7.1%)	1 (16.7%)	
Local and distant	9 (6.9%)	8 (7.1%)	0 (0%)	
No recurrence	72 (55.4%)	63 (55.8%)	1 (16.7%)	
<b>p16 among oropharynx cancer</b>				0.47
Positive	32 (50.8%)	30 (53.6%)	0 (0)	
Negative	31 (49.2%)	26 (46.4%)	1 (100)	

Supplemental Table 1

## Summary of patient characteristics with recurrent HNSCC

	All patients	SMAD-positive	SMAD-negative	P value
<b>Marker</b>				
SMAD4	43	32 (74.4%)	11 (25.6%)	
<b>Age at diagnosis</b>				
Mean (SD)	55.1 (11.9)	55.0 (11.1)	55.4 (14.6)	0.6
Median, range	54, 28-92	56, 28-77	52, 36-92	
<b>Gender</b>				
Female	12 (27.9%)	10 (31.2%)	2 (18.2%)	0.7
Male	31 (72.1%)	22 (68.8%)	9 (81.8%)	
<b>Race</b>				
White	37 (86.0%)	28 (87.5%)	9 (81.8%)	0.64
Black	6 (14.0%)	4 (12.5%)	2 (18.2%)	
<b>Primary tumor site</b>				
Oropharynx	11 (25.6%)	10 (31.2%)	1 (9.1%)	0.24
Other	32 (74.4%)	22 (68.8%)	10 (90.9%)	
<b>T stage at diagnosis</b>				
T1	12 (28.6%)	8 (25.8%)	4 (36.4%)	0.73 (T1/T2 vs. T3/T4)
T2	16 (38.1%)	12 (38.7%)	4 (36.4%)	
T3	9 (21.4%)	8 (25.8%)	1 (9.1%)	
T4	5 (11.9%)	3 (9.7%)	2 (18.2%)	
<b>N stage at diagnosis</b>				
N0	15 (35.7%)	12 (38.7%)	3 (27.3%)	0.18 (N0/N1 vs. N2/N3)
N1	8 (19.0%)	7 (22.6%)	1 (9.1%)	
N2	17 (40.5%)	12 (38.7%)	5 (45.4%)	
N3	2 (4.8%)	0 (0)	2 (18.2%)	
<b>M stage at diagnosis</b>				
M0	37 (88.1%)	28 (90.3%)	9 (81.8%)	0.59
M1	5 (11.9%)	3 (9.7%)	2 (18.2%)	
<b>Pathology differentiation</b>				
Poor	9 (20.9%)	5 (15.6%)	4 (36.4%)	0.06
Modest	25 (58.1%)	20 (62.5%)	5 (45.4%)	
Well	3 (7.0%)	1 (3.1%)	2 (18.2%)	
NOS	6 (14.0%)	6 (18.8%)	0 (0)	
<b>Recurrence*</b>				
Local	28 (66.7%)	22 (68.7%)	6 (60.0%)	0.49
Distant	11 (26.2%)	7 (21.9%)	4 (40.0%)	
Distant and local	3 (7.1%)	3 (9.4%)	0 (0)	
<b>p16 among oropharynx cancer</b>				
Positive	5 (45.4%)	5 (50%)	0 (0)	0.99
Negative	6 (54.6%)	5 (50%)	1 (100%)	

\*Among the 11 SMAD4 negative patients, 4 (40%) developed distant mets (including distant, distant and local), while for the 32 SMAD4 positive patients, 10 (31.3%) had distant mets (p value =0.71).

	# of injected cells	# of mice	# of mice with implanted tumor	# of mice with L/N metastasis
FaDu-mock	$5 \times 10^5$	5	5	2
FaDu-SMAD4	$5 \times 10^5$	5	2	0

L/N - lymph node

### Supplemental Table 3.