

Supplementary Table S1. Selection of lncRNA-related SNPs for genotyping in case-control analysis

SNPs	Position(hg19)	Ref/Var(MAF)	H3k27ac	DNaseI	Conservation	TF binding	LncRNAs
rs10134980	Chr14:101293528-101293528	A/C(0.21)	540		272	786	MEG3
rs1059292	Chr11:62623051-62623051	T/C(0.16)	1000	187		900	lnc-WDR74-1
rs11655237	Chr17:70400166-70400166	C/T(0.23)		107	278	852	LINC00511
rs1549334	Chr2:177039197-177039197	G/A(0.23)			611	852	lnc-AC009336.1-2
rs2239895	Chr11:65191447-65191447	G/C(0.17)	882	152	524	892	NEAT1
rs2275159	Chr9:139621326-139621326	G/A(0.19)	1000	108	443		lnc-LCN6-1
rs2295441	Chr22:47158444-47158444	T/C(0.39)	864	144	243		CTA-29F11.1
rs2302177	Chr16:2014979-2014979	G/T(0.46)	1000	180	265		SNHG9
rs2720660	Chr8:129061242-129061242	A/G(0.12)	648	101		871	PVT1
rs28631713	Chr8:128857986-128857986	G/A(0.15)	648	101	259		PVT1
rs3093873	Chr14:20811442-20811442	C/T(0.2)	862	250	573		RPPH1
rs3200401	Chr11:65271832-65271832	C/T(0.18)	1000	107	580		lnc-SCYL1-1
rs3783358	Chr14:101321907-101321907	C/G(0.34)		102	289	776	RP11-123M6.2
rs3788632	Chr22:45559609-45559609	C/T(0.12)	778	147		854	NUP50-AS1
rs3806357	Chr1:201979455-201979455	G/A(0.23)	1000	204		982	RP11-465N4.4
rs4142441	Chr20:42839620-42839620	A/G(0.12)	686	183		885	OSER1-AS1

Supplementary Table S2. Primer and siRNA sequences.

Primers		Sequence (5'-3')
OSER1-AS1	Forward:	TTGTGTTCCCCAGTGTCTGC
	Reverse:	CACTTTGTTAGCCAAGATGGTCTCG
	RT:	GTCGTATCCAGTGCAGGGTCCGAGGTATTGCGACTGGATACGACCTACCT
miRNA-17-5p	primer:	
	Forward:	GCGCAAAGTGCTTACAGTGC
	Reverse:	GTGCAGGGTCCGAGGTATTC
U6	Forward:	GCTTCGGCAGCACATATACTAAAAT
	Reverse:	CGCTTCACGAATTTGCGTGTCTCAT
CHIP Primer 1	Forward:	AACCTTATCGGTGAATCTCGT
	Reverse:	CCGCCTACCATCTGAGCAAC
CHIP Primer 2	Forward:	ATTCCTGTTATTCTTCGGTTTGC
	Reverse:	AAGAATGACGCCTACTCACT
SiRNAs		Sequence (5'-3')
si-323		GAUGUCAAGCCCUGCUCUUTT
si-373		CCAGAAGGAUGGAAUUAUACTT
si-NC		UUCUCCGAACGUGUCACGUTT
miR-17-5p inhibitors		CUACCUGCACUGUAAGCACUUUG
miR-17-5p mimics		CAAAGUGCUUACAGUGCAGGUAG
NC inhibitor		CAGUACUUUUUGUGUAGUACAA
NC mimic		UUGUACUACACAAAAGUACUG

Supplementary Table S3. Baseline characteristics of cases and controls

	Cases (N=626)	Controls (N=736)	<i>P-value</i>
Mean age $\pm$SD	58.4 $\pm$ 9.5yr	58.6 $\pm$ 12.6yr	0.68
Sex (male %)	71.1%	69.2%	0.44
Smoking %	69.7%	42.1%	0.000*
Secondhand smoking	30.0%	59.2%	0.000*
COPD	19.3%	9.4%	0.000*
Family lung cancer history	7.6%	1.3%	0.000*

Supplementary Table S4. The clinical characteristics of 129 NSCLC patients

Variables	Paired tissue samples
Age (mean (SD))	57.63 (11.22)
Sex (n (%))	
Male	80 (62%)
Female	49 (38%)
TNM stage (n (%))	
I	52 (40.9%)
II	39 (30.7%)
III	15 (11.8%)
IV	13 (10.2%)
V	8 (6.3%)
Lymph nodes metastasis (n (%))	
Yes	34 (27.9%)
No	88 (72.1%)
NSCLC type (%)	
Adenocarcinoma	93 (72.1%)
Squamous cell carcinoma	34 (26.4%)
Large cell carcinoma	2 (1.6%)

Supplementary Table S5. Correlation between OSER1-AS1 expression levels and clinical characteristics of NSCLC patients

Variables	Count (%)	OSER1-AS1 (mean ± SD)	<i>t</i>	<i>P</i>
Age (year)				
≥60	68 (52.71)	3.46 ± 3.82	-1.10	0.274
<60	61 (47.29)	3.96 ± 5.01		
Sex				
Male	80 (62.02)	4.32 ± 4.74	-1.884	0.062
Female	49 (37.98)	2.72 ± 3.94		
Smoking				
Non-smoker	39 (30.23)	5.99 ± 5.10	-3.38	0.001
Smoker	90 (69.77)	3.12 ± 4.14		
TNM stage				
I	71 (55.04)	4.42 ± 4.49	-1.03	0.303
II /III/IV	58 (44.96)	3.43 ± 4.76		
Lymph nodes metastasis				
Yes	39 (30.23)	3.43 ± 3.99	-0.89	0.377
No	90 (69.77)	4.22 ± 4.87		

Supplementary Table S6. Multivariate cox regression analysis of OSER1-AS1 expression and overall survival in TCGA-LUAD patients.

	Overall		Smoker		Non-smoker	
Covariates	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Age	1.015 (0.998,1.032)	0.090	1.015 (0.995,1.035)	0.000*	1.012 (0.981,1.045)	0.444
Sex						
Male	Reference		Reference		Reference	
Female	0.786 (0.567,1.088)	0.147	0.652 (0.438,0.970)	0.035	1.223 (0.672,2.224)	0.510
Smoking						
Non-smoker	Reference		Reference		Reference	
Smoker	0.83 (0.582,1.182)	0.300				
Tumor stage						
1	Reference		Reference		Reference	
2-4	1.572 (1.344,1.838)	1.47×10 ⁻⁸	1.488 (1.229,1.801)	4.63×10 ⁻⁵	1.674 (1.254,2.235)	4.76×10 ⁻⁴
OSER1-AS1						
Low	Reference		Reference		Reference	
High	0.73 (0.348,1.529)	0.403	1.093 (0.735,1.625)	0.661	0.560 (0.302,1.04)	0.066