

Figure S1 Subgroup analyses of IRGS in Training set (TCGA, N=100).

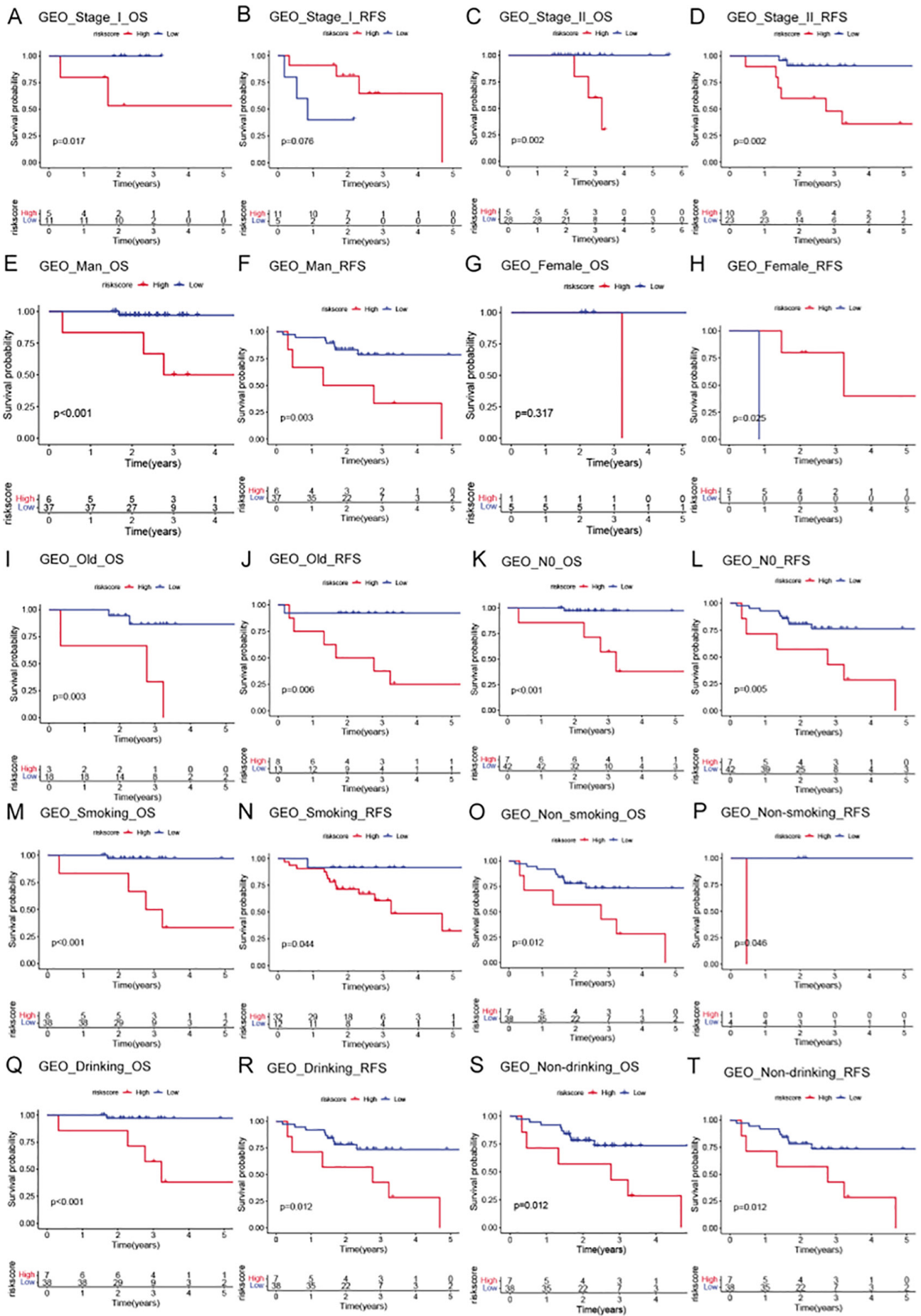


Figure S2 Subgroup analyses of IRGS in validation set (GSE65858, N=49).

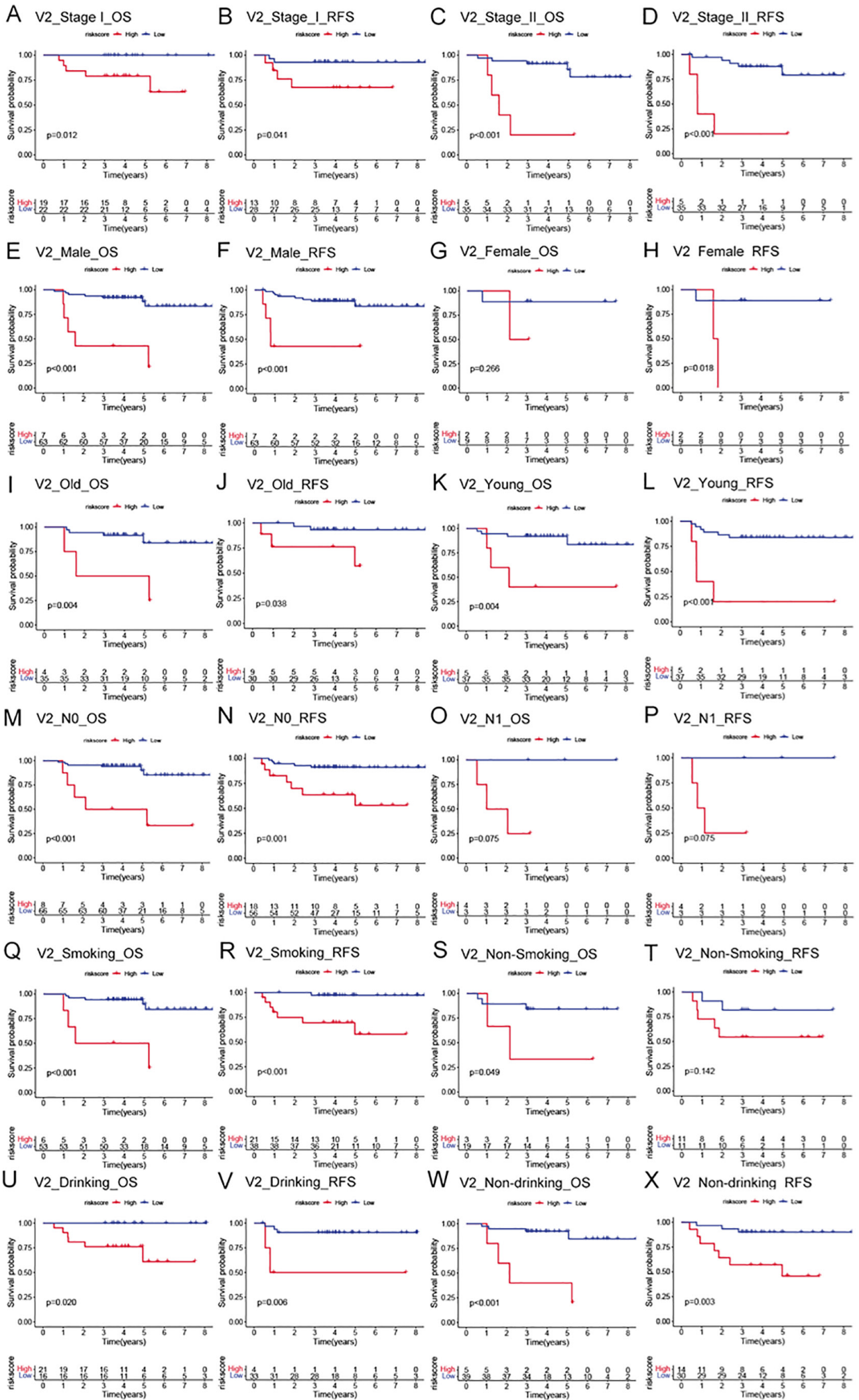


Figure S3 Subgroup analyses of IRGS in external validation cohort (N=81).

**Table S1** Clinical characteristics of the enrolled cohorts [N (%)]

Characteristics	Training cohort, TCGA, N=100	Validation cohort, GSE65858, N=49	Independent cohort, N=81
Gender			
Male	62 (62.0)	43 (87.8)	70 (86.4)
Female	38 (38.0)	6 (12.2)	11 (13.6)
Age			
≤60 years	39 (39.0)	28 (57.1)	42 (51.9)
>60 years	61 (61.0)	21 (42.9)	39 (48.1)
Smoking			
No	30 (30.0)	5 (10.2)	22 (27.2)
Yes	66 (66.0)	44 (89.8)	59 (72.8)
NA	4		
Drinking			
No	39 (39.0)	4 (8.2)	44 (54.3)
Yes	59 (59.0)	45 (91.8)	37 (45.7)
NA	2		
TNM stage			
I	30 (30.0)	16 (32.7)	41 (50.6)
II	70 (70.0)	33 (67.3)	40 (49.4)
T			
0	30 (30.0)	16 (32.7)	41 (50.6)
1	70 (70.0)	33 (67.3)	40 (49.4)
OS state			
Alive	67 (67.0)	43 (87.8)	67 (82.7)
Dead	33 (33.0)	6 (12.2)	14 (17.3)

**Table S2** Primer sequences for qRT-PCR

Gene name	Forward primer	Reverse primer
<i>GAPDH</i>	5'-GGAGCCAAAAGGGTCATCATCTC-3'	5'-GAGGGGCCATCCACAGTCTTCT-3'
<i>METTL3</i>	5'-CTTCAGCAGTTCCTGAATTAGC-3'	5'-ATGTTAAGGCCAGATCAGAGAG
<i>PRKCH</i>	5'-CAGCCACCTACTGCTCTCA-3'	5'-GGCAGCGTTTATGGACGACA-3'
<i>NLRC5</i>	5'-AGGAGCCAGAGGAGCAGAAG-3'	5'-TCAGCCTCATCCTTCGGGAG-3'
<i>IRAK4</i>	5'-CGACCCATTCTGTTGGTGGT-3'	5'-TGCAAGCTTCTTCACTGCCA-3'-3'
<i>PLD1</i>	5'-TTTCCGGTGCCTTCCCAATG-3'	5'-TCCTCCTCAGCTCGAATGGG-3'
<i>IFNE</i>	5'-CAGCAGTGTCTACCACACAGG-3'	5'-AGAATGGCCAGAGTGTGCCT-3'
<i>TNFSF9</i>	5'-GACACGAAGGAGCTGGTGGT-3'	5'-CGCAAGTGAAACGGAGCCTG-3'

**Table S3** Univariate Cox regression analysis of characteristics with overall survival (OS) in training cohort (TCGA, N=100) and validation (GSE65858, N=49) and clinical cohort (N=71)

Variable	Classification	Univariable analysis		
		HR	95% CI	P value
Training cohort				
Gender	Male or Female	1.562	0.690, 3.536	0.285
Age	≥60 or <60	2.062	0.878, 4.839	0.097
Tobacco use	Yes or No	1.708	0.694, 4.206	0.244
Alcohol use	Yes or No	0.735	0.353, 1.528	0.409
TNM stage	I or II	2.030	0.704, 5.851	0.190
IRGS score	High or low	12.034	2.851, 50.789	0.001
GSE65858				
Gender	Male or Female	0.894	0.102, 7.866	0.920
Age	≥60 or <60	4.799	0.552, 41.704	0.155
Tobacco use	Yes or No	25.949	0.001, 1241149.429	0.554
Alcohol use	Yes or No	25.848	0.001, 2594321.167	0.580
TNM stage	I or II	0.343	0.068, 1.723	0.194
IRGS score	High or low	19.938	2.281, 174.299	0.007
Clinical cohort				
Gender	Male or Female	0.901	0.201, 4.025	0.891
Age	≥60 or <60	1.026	0.360, 2.927	0.961
Tobacco use	Yes or No	0.585	0.196, 1.750	0.338
Alcohol use	Yes or No	0.935	0.324, 2.696	0.901
TNM stage	I or II	1.778	0.595, 5.315	0.303
IRGS score	High or low	7.391	1.650, 33.099	0.009

**Table S4** Multivariable Cox regression analysis of characteristics with OS in enrolled cohorts using Forward: LR

Variable	Classification	Multivariable analysis		
		HR	95% CI	P value
Training cohort				
IRGS score	High or low	12.813	2.898, 56.648	0.001
GSE65858				
IRGS score	High or low	19.938	2.281, 174.299	0.007
Clinical cohort				
IRGS score	High or low	7.391	1.650, 33.099	0.009