**Supplemental Table 1**. The list of DE 31 pseudogenes, 17 miRNAs and 152 mRNAs in the ceRNA network (the name of survival-related genes are marked in red).

| **Gene symbol** | **logFC** | **PValue** | **FDR** |  | **Gene symbol** | **logFC** | **PValue** | | **FDR** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Up regulated pseudogenes** | | | |  | **Up regulated mRNAs** | | | |  | |
| PLEKHA8P1 | 1.669046 | 2.36E-28 | 2.99E-27 |  | OSBPL3 | 1.7997 | | 1.82E-52 | | 1.11E-50 | |
| RP9P | 1.066084 | 1.67E-24 | 1.59E-23 |  | CCND1 | 1.637838 | | 5.22E-50 | | 2.73E-48 | |
| C2orf27A | 1.87857 | 4.67E-20 | 3.23E-19 |  | SCD | 2.579664 | | 2.73E-49 | | 1.35E-47 | |
| RPLP0P2 | 1.707331 | 1.62E-14 | 7.27E-14 |  | MET | 1.783427 | | 2.98E-47 | | 1.32E-45 | |
| NSUN5P1 | 1.508603 | 2.12E-14 | 9.43E-14 |  | SLC6A6 | 2.703952 | | 5.49E-47 | | 2.4E-45 | |
| MIPEPP3 | 1.040167 | 4.6E-13 | 1.85E-12 |  | PPM1H | 2.192963 | | 7.49E-46 | | 3.05E-44 | |
| DDX12P | 1.079841 | 1.77E-11 | 6.26E-11 |  | OTX1 | 5.263449 | | 5.38E-43 | | 1.82E-41 | |
| ZNF37BP | 1.047852 | 2.98E-11 | 1.04E-10 |  | SOX4 | 1.608656 | | 9.2E-42 | | 2.9E-40 | |
| NSUN5P2 | 1.213042 | 3.74E-10 | 1.19E-09 |  | KIAA1549 | 2.255007 | | 7.85E-41 | | 2.33E-39 | |
| FER1L4 | 2.165097 | 2.65E-09 | 7.79E-09 |  | DUSP14 | 1.817861 | | 1.22E-40 | | 3.59E-39 | |
| TMEM191A | 1.095527 | 3.45E-08 | 9.12E-08 |  | SALL4 | 4.288856 | | 2.04E-37 | | 4.83E-36 | |
| OR2I1P | 1.573362 | 2.05E-05 | 4.17E-05 |  | RPGRIP1L | 1.353984 | | 2.33E-34 | | 4.56E-33 | |
| GAPDHP65 | 1.093321 | 0.000119 | 0.000222 |  | CBX4 | 1.439166 | | 4.6E-34 | | 8.77E-33 | |
| GAPDHP1 | 1.042733 | 0.00019 | 0.000345 |  | VEGFA | 1.417921 | | 5.24E-34 | | 9.97E-33 | |
| ZDHHC8P1 | 1.164729 | 0.000873 | 0.001465 |  | KIF23 | 1.412516 | | 1.33E-33 | | 2.48E-32 | |
| **Down regulated pseudogenes** | | | |  | CNN2 | 1.158564 | | 1.58E-33 | | 2.93E-32 | |
| GGTA1P | -2.74297 | 4.12E-63 | 4.55E-61 |  | SNTB1 | 2.081557 | | 2.48E-33 | | 4.51E-32 | |
| PIGCP1 | -1.53115 | 5.41E-48 | 2.45E-46 |  | TGIF2 | 1.795166 | | 4.12E-33 | | 7.4E-32 | |
| MEIS3P1 | -2.54972 | 1.49E-36 | 3.33E-35 |  | MACC1 | 2.250083 | | 4.25E-33 | | 7.61E-32 | |
| TP73-AS1 | -1.81728 | 3.55E-36 | 7.71E-35 |  | SCLY | 1.327166 | | 1.17E-26 | | 1.31E-25 | |
| CMAHP | -1.96278 | 3.59E-32 | 5.98E-31 |  | PMAIP1 | 1.917991 | | 1.44E-25 | | 1.48E-24 | |
| NAPSB | -1.87418 | 8.62E-30 | 1.2E-28 |  | C2orf15 | 1.204979 | | 6.7E-24 | | 6.1E-23 | |
| ABHD11-AS1 | -1.88231 | 9.92E-27 | 1.11E-25 |  | MMP11 | 3.606282 | | 1.45E-23 | | 1.29E-22 | |
| NCF1C | -2.08156 | 9.09E-26 | 9.47E-25 |  | ZDHHC9 | 1.06263 | | 3E-23 | | 2.61E-22 | |
| ANKRD36BP2 | -2.63676 | 4.11E-23 | 3.54E-22 |  | PLAU | 1.83364 | | 5.61E-23 | | 4.79E-22 | |
| GVINP1 | -1.76737 | 4.59E-23 | 3.94E-22 |  | SLC7A1 | 1.045333 | | 1.75E-22 | | 1.45E-21 | |
| HMGN2P46 | -1.20083 | 9.28E-16 | 4.61E-15 |  | SLC7A6 | 1.16013 | | 4.47E-22 | | 3.57E-21 | |
| AP000769.1 | -1.05134 | 2.17E-11 | 7.64E-11 |  | SLC7A11 | 2.586618 | | 1.67E-21 | | 1.29E-20 | |
| RPL41P1 | -2.4741 | 2.49E-09 | 7.35E-09 |  | SNAI1 | 1.649191 | | 3.02E-21 | | 2.3E-20 | |
| AC138123.1 | -1.32981 | 3.27E-08 | 8.67E-08 |  | FOSL1 | 3.314619 | | 5.67E-21 | | 4.23E-20 | |
| YWHAZP4 | -1.31044 | 8.92E-06 | 1.88E-05 |  | COL1A1 | 2.141861 | | 6.77E-20 | | 4.63E-19 | |
| YWHAZP5 | -1.03007 | 0.000318 | 0.000562 |  | SKP2 | 1.000632 | | 7.5E-19 | | 4.73E-18 | |
| **Up regulated miRNAs** | | | |  | DNMT3B | 1.433015 | | 5.38E-18 | | 3.17E-17 | |
| hsa-miR-140-5p | 3.956283 | 3.14E-39 | 6.15E-38 |  | ZNF367 | 1.06801 | | 6.87E-18 | | 4.02E-17 | |
| hsa-miR-142-3p | 6.644751 | 6.84E-32 | 7.02E-31 |  | PLS3 | 1.161045 | | 2.18E-17 | | 1.23E-16 | |
| hsa-miR-429 | 5.398584 | 9.54E-32 | 9.56E-31 |  | EIF4EBP1 | 1.309117 | | 3.28E-17 | | 1.83E-16 | |
| hsa-miR-590-5p | 4.91899 | 9.7E-23 | 5.61E-22 |  | OTUB2 | 1.611091 | | 3.93E-17 | | 2.17E-16 | |
| hsa-miR-455-5p | 3.942752 | 1.13E-20 | 5.53E-20 |  | MEX3D | 1.020138 | | 2.16E-15 | | 1.04E-14 | |
| hsa-miR-199b-5p | 3.949604 | 8.66E-19 | 3.91E-18 |  | DUSP10 | 1.190889 | | 3.15E-15 | | 1.5E-14 | |
| hsa-miR-146b-5p | 2.28562 | 2.71E-12 | 7.23E-12 |  | AXIN2 | 1.929588 | | 7.13E-15 | | 3.29E-14 | |
| hsa-miR-217 | 4.263241 | 8.92E-11 | 2.21E-10 |  | ARID3A | 1.70677 | | 1.49E-14 | | 6.73E-14 | |
| hsa-miR-193a-3p | 2.811072 | 1.22E-10 | 2.94E-10 |  | METTL26 | 1.109164 | | 3.07E-13 | | 1.26E-12 | |
| hsa-miR-338-3p | 2.582417 | 2.09E-07 | 4.11E-07 |  | OLR1 | 2.764851 | | 2.8E-12 | | 1.06E-11 | |
| hsa-miR-107 | 1.153045 | 3.75E-05 | 6.06E-05 |  | ONECUT2 | 2.138664 | | 2.36E-10 | | 7.66E-10 | |
| hsa-miR-34c-5p | 1.476441 | 0.001967 | 0.002712 |  | GPCPD1 | 1.008293 | | 5.29E-10 | | 1.66E-09 | |
| **down regulated miRNAs** | | |  |  | KLK10 | 3.666508 | | 3.01E-09 | | 8.8E-09 | |
| hsa-miR-139-5p | -4.90624 | 2.09E-44 | 9.41E-43 |  | FADS1 | 1.221632 | | 7.84E-08 | | 2.01E-07 | |
| hsa-miR-125a-5p | -3.92393 | 3.84E-40 | 8.66E-39 |  | DACH1 | 1.524078 | | 9.86E-07 | | 2.29E-06 | |
| hsa-miR-129-5p | -5.31729 | 3.04E-29 | 2.64E-28 |  | VCAN | 1.008896 | | 6.45E-06 | | 1.38E-05 | |
| hsa-miR-375 | -3.20866 | 9.14E-11 | 2.25E-10 |  | MYCN | 1.137858 | | 9.12E-05 | | 0.000172 | |
| hsa-miR-133b | -2.48455 | 0.00042 | 0.000617 |  |  |  | |  | |  | |
| **Gene symbol** | **logFC** | **PValue** | **FDR** |  | **Gene symbol** | **logFC** | | **PValue** | | **FDR** | |
| **down regulated mRNAs** | | |  |  | **down regulated mRNAs** | | | | |  | |
| LIFR | -3.75936 | 6.25E-94 | 4.03E-91 |  | BMF | -1.25713 | | 2.36E-24 | | 2.22E-23 | |
| GFI1 | -2.99675 | 2.08E-89 | 9.97E-87 |  | MARCKS | -1.27157 | | 3.9E-24 | | 3.62E-23 | |
| CNNM2 | -1.69158 | 4.37E-80 | 1.32E-77 |  | SMAD7 | -1.04743 | | 2.31E-23 | | 2.03E-22 | |
| NEGR1 | -3.10577 | 1.89E-73 | 3.55E-71 |  | SOCS6 | -1.02842 | | 2.95E-23 | | 2.57E-22 | |
| NCAM1 | -3.14862 | 1.05E-71 | 1.71E-69 |  | ZEB2 | -1.73274 | | 4.4E-23 | | 3.79E-22 | |
| PCSK5 | -2.79471 | 7.74E-66 | 1.01E-63 |  | SUN2 | -1.11165 | | 5.34E-23 | | 4.56E-22 | |
| PDCD4 | -2.0661 | 1.41E-65 | 1.8E-63 |  | SECISBP2L | -1.05878 | | 1.79E-22 | | 1.48E-21 | |
| TEF | -1.8562 | 3.32E-63 | 3.7E-61 |  | PDE4D | -1.33879 | | 2.06E-22 | | 1.69E-21 | |
| NR5A2 | -2.60448 | 1.33E-62 | 1.41E-60 |  | RASSF2 | -1.47462 | | 3.2E-22 | | 2.59E-21 | |
| HAPLN1 | -2.81401 | 1.85E-60 | 1.83E-58 |  | TMEM25 | -1.52519 | | 6.22E-22 | | 4.94E-21 | |
| CPEB3 | -1.44355 | 2.14E-55 | 1.57E-53 |  | SHROOM3 | -1.03146 | | 1.15E-21 | | 9.03E-21 | |
| GPD1L | -1.52794 | 3.14E-51 | 1.74E-49 |  | DENND5B | -1.26018 | | 3.12E-21 | | 2.38E-20 | |
| KAT2B | -1.83737 | 3.29E-48 | 1.53E-46 |  | RAB30 | -1.12057 | | 3.9E-21 | | 2.94E-20 | |
| SLC35G1 | -1.42763 | 1.09E-47 | 4.91E-46 |  | IL6ST | -1.25213 | | 5.26E-21 | | 3.93E-20 | |
| IRF4 | -2.94795 | 9.36E-46 | 3.78E-44 |  | FGF2 | -1.71963 | | 1.83E-20 | | 1.31E-19 | |
| RGMA | -2.81351 | 6.74E-45 | 2.59E-43 |  | PLEKHO1 | -1.3139 | | 1.96E-20 | | 1.4E-19 | |
| KLF4 | -2.72514 | 8.33E-45 | 3.19E-43 |  | C11orf54 | -1.01027 | | 2.69E-20 | | 1.9E-19 | |
| THRB | -2.96107 | 8.4E-43 | 2.81E-41 |  | TP53INP1 | -1.16789 | | 3.59E-20 | | 2.51E-19 | |
| SGK1 | -2.40678 | 4.8E-42 | 1.56E-40 |  | CAMK2N1 | -1.34078 | | 5.44E-19 | | 3.47E-18 | |
| ANKRD33B | -2.23809 | 7.92E-42 | 2.52E-40 |  | HK2 | -1.22462 | | 7.58E-19 | | 4.78E-18 | |
| SNCG | -2.33812 | 9.86E-41 | 2.92E-39 |  | PCDH7 | -1.61879 | | 8.6E-19 | | 5.39E-18 | |
| SEMA6A | -2.86826 | 1.13E-40 | 3.32E-39 |  | GNAQ | -1.0252 | | 1.49E-18 | | 9.16E-18 | |
| BCL2L15 | -1.90771 | 1.19E-40 | 3.48E-39 |  | GLI3 | -1.73725 | | 1.58E-18 | | 9.71E-18 | |
| CFL2 | -1.93398 | 1.62E-40 | 4.75E-39 |  | RPS6KA6 | -2.33451 | | 2.45E-18 | | 1.48E-17 | |
| RBM47 | -1.25806 | 8.22E-40 | 2.3E-38 |  | RAB3B | -1.78797 | | 3.39E-18 | | 2.03E-17 | |
| PPP1R16B | -2.04992 | 1.03E-39 | 2.86E-38 |  | VLDLR | -1.42337 | | 1.58E-17 | | 9.01E-17 | |
| KIT | -2.29449 | 3.67E-39 | 9.73E-38 |  | ZFPM2 | -1.66444 | | 1.77E-17 | | 1E-16 | |
| MPP2 | -1.96711 | 2.54E-37 | 6E-36 |  | DAB2IP | -1.01374 | | 2.16E-17 | | 1.22E-16 | |
| ZSWIM6 | -1.07424 | 5.89E-37 | 1.35E-35 |  | BNC2 | -1.68076 | | 2.58E-17 | | 1.45E-16 | |
| FOXP2 | -2.83541 | 5.91E-35 | 1.2E-33 |  | RUNX1T1 | -1.53701 | | 5.12E-17 | | 2.8E-16 | |
| CPT1A | -1.31993 | 9.76E-35 | 1.96E-33 |  | LPP | -1.29441 | | 5.66E-17 | | 3.09E-16 | |
| IGSF3 | -1.31611 | 2.11E-34 | 4.13E-33 |  | PEG10 | -2.30817 | | 6.85E-17 | | 3.72E-16 | |
| PAG1 | -1.79445 | 6.15E-34 | 1.16E-32 |  | RET | -1.92298 | | 9.63E-17 | | 5.17E-16 | |
| WASL | -1.0876 | 1.42E-32 | 2.45E-31 |  | GRAP2 | -1.30437 | | 1.62E-16 | | 8.57E-16 | |
| PDE3A | -2.55988 | 3.2E-32 | 5.36E-31 |  | ANKRD44 | -1.00907 | | 1.88E-16 | | 9.95E-16 | |
| HCFC2 | -1.13598 | 4.08E-31 | 6.25E-30 |  | ZEB1 | -1.33434 | | 5.06E-16 | | 2.58E-15 | |
| RECK | -1.39397 | 8.79E-31 | 1.31E-29 |  | AXL | -1.27867 | | 9.28E-16 | | 4.61E-15 | |
| FOXN3 | -1.32549 | 4.71E-30 | 6.63E-29 |  | MTUS1 | -1.0565 | | 1.03E-15 | | 5.1E-15 | |
| RNF125 | -1.68926 | 6.74E-30 | 9.43E-29 |  | CBX6 | -1.31841 | | 2.42E-15 | | 1.16E-14 | |
| FAM49A | -1.72629 | 2.2E-29 | 2.97E-28 |  | PDGFRA | -1.39318 | | 1.31E-14 | | 5.94E-14 | |
| FKBP1B | -2.04111 | 7.69E-29 | 1.01E-27 |  | GFI1 | -1.4739 | | 1.36E-14 | | 6.18E-14 | |
| TMEM59 | -1.07076 | 1.91E-28 | 2.44E-27 |  | PCDH19 | -2.03705 | | 1.96E-14 | | 8.77E-14 | |
| RIMS3 | -1.79968 | 1.05E-27 | 1.27E-26 |  | FGFR1 | -1.23166 | | 1.71E-13 | | 7.13E-13 | |
| RPS6KA5 | -1.22881 | 1.47E-27 | 1.77E-26 |  | SALL1 | -1.4489 | | 2.22E-13 | | 9.17E-13 | |
| TTC28 | -1.51055 | 2.03E-27 | 2.41E-26 |  | DUSP1 | -1.30977 | | 2.66E-12 | | 1.01E-11 | |
| CAV1 | -1.79746 | 3.74E-27 | 4.31E-26 |  | SOX6 | -1.24829 | | 2.91E-10 | | 9.34E-10 | |
| ENPP2 | -1.94 | 5.41E-27 | 6.17E-26 |  | REEP1 | -1.47992 | | 1.35E-08 | | 3.72E-08 | |
| EBF1 | -1.54622 | 1.52E-25 | 1.56E-24 |  | SATB2 | -1.23214 | | 1.49E-08 | | 4.1E-08 | |
| PLXNA2 | -1.21811 | 4.04E-25 | 4.01E-24 |  | WASF3 | -1.31779 | | 3.11E-08 | | 8.26E-08 | |
| DNAJB4 | -1.1257 | 6.19E-25 | 6.06E-24 |  | GAS1 | -1.2225 | | 9.7E-06 | | 2.03E-05 | |
| ITPR1 | -1.40291 | 1.63E-24 | 1.56E-23 |  | VAV3 | -1.03818 | | 0.000159 | | 0.00029 | |

**Supplemental Table 2**. Correlations between expression level of 7 pseudogenes and clinicopathological factors of patients in TCGA-COAD.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **DDX12P** | |  | **FER1L4** | |  | **GVINP1** | |  | **PLEKHA8P1** | | |
| **Characteristic** | **Number** | **Low** | **High** | **Pvalue** | **Low** | **High** | **Pvalue** | **Low** | **High** | **Pvalue** | **Low** | **High** | **Pvalue** |
| **Age** |  |  |  | 0.359 |  |  | 0.108 |  |  | 0.236 |  |  | 0.163 |
| <60 | 125 | 67 | 58 |  | 55 | 70 |  | 57 | 68 |  | 56 | 69 |  |
| ≥60 | 328 | 160 | 168 |  | 172 | 156 |  | 170 | 158 |  | 171 | 157 |  |
| **Gender** |  |  |  | 0.965 |  |  | 0.479 |  |  | 0.121 |  |  | 0.886 |
| Male | 239 | 120 | 119 |  | 116 | 123 |  | 128 | 111 |  | 119 | 120 |  |
| Female | 214 | 107 | 107 |  | 111 | 103 |  | 99 | 115 |  | 108 | 106 |  |
| **T stage** |  |  |  | **0.049** |  |  | 0.789 |  |  | 0.722 |  |  | **0.023** |
| T1 | 12 | 9 | 3 |  | 5 | 7 |  | 6 | 6 |  | 9 | 3 |  |
| T2 | 77 | 45 | 32 |  | 36 | 41 |  | 34 | 43 |  | 35 | 42 |  |
| T3 | 308 | 151 | 157 |  | 159 | 149 |  | 158 | 150 |  | 164 | 144 |  |
| T4 | 56 | 22 | 34 |  | 27 | 29 |  | 29 | 27 |  | 20 | 36 |  |
| **N stage** |  |  |  | 0.745 |  |  | **0.025** |  |  | **0.019** |  |  | 0.955 |
| N0 | 266 | 135 | 131 |  | 145 | 121 |  | 121 | 145 |  | 133 | 133 |  |
| N1+N2 | 187 | 92 | 95 |  | 82 | 105 |  | 106 | 81 |  | 94 | 93 |  |
| **M stage** |  |  |  | 0.788 |  |  | **0.018** |  |  | **0.006** |  |  | 0.077 |
| M0 | 332 | 175 | 157 |  | 178 | 154 |  | 166 | 166 |  | 175 | 157 |  |
| M1 | 64 | 35 | 29 |  | 24 | 40 |  | 44 | 20 |  | 26 | 38 |  |
| **Pathologic stage** |  |  |  | 0.473 |  |  | **0.009** |  |  | **0.013** |  |  | 0.835 |
| Stage I+II | 251 | 132 | 119 |  | 140 | 111 |  | 114 | 137 |  | 128 | 123 |  |
| Stage III+IV | 192 | 94 | 98 |  | 83 | 109 |  | 110 | 82 |  | 96 | 96 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **NCF1C** | |  | **NSUN5P2** | |  | **RP9P** |  |  |
| **Characteristic** | **Number** | **Low** | **High** | **P-value** | **Low** | **High** | **P-value** | **Low** | **High** | **P-value** |
| **Age** |  |  |  | 0.619 |  |  | 0.330 |  |  | 0.848 |
| <60 | 125 | 65 | 60 |  | 58 | 67 |  | 62 | 63 |  |
| ≥60 | 328 | 162 | 166 |  | 169 | 159 |  | 166 | 162 |  |
| **Gender** |  |  |  | 0.886 |  |  | 0.965 |  |  | 0.370 |
| Male | 239 | 119 | 120 |  | 120 | 119 |  | 115 | 124 |  |
| Female | 214 | 108 | 106 |  | 107 | 107 |  | 112 | 102 |  |
| **T stage** |  |  |  | 0.862 |  |  | 0.868 |  |  | **0.004** |
| T1 | 12 | 5 | 7 |  | 5 | 7 |  | 5 | 7 |  |
| T2 | 77 | 37 | 40 |  | 41 | 36 |  | 42 | 35 |  |
| T3 | 308 | 155 | 153 |  | 153 | 155 |  | 166 | 142 |  |
| T4 | 56 | 30 | 26 |  | 29 | 27 |  | 16 | 40 |  |
| **N stage** |  |  |  | 0.893 |  |  | 0.276 |  |  | **0.003** |
| N0 | 266 | 134 | 132 |  | 139 | 127 |  | 149 | 117 |  |
| N1+N2 | 187 | 93 | 94 |  | 88 | 99 |  | 78 | 109 |  |
| **M stage** |  |  |  | 0.083 |  |  | 0.103 |  |  | **0.046** |
| M0 | 332 | 163 | 169 |  | 177 | 155 |  | 175 | 157 |  |
| M1 | 64 | 39 | 25 |  | 27 | 37 |  | 25 | 39 |  |
| **Pathologic stage** |  |  |  | 0.652 |  |  | 0.149 |  |  | **0.005** |
| Stage I+II | 251 | 124 | 127 |  | 135 | 116 |  | 141 | 110 |  |
| Stage III+IV | 192 | 99 | 93 |  | 90 | 102 |  | 82 | 110 |  |

**Supplemental Table 3**. Clinical characteristics of the training and validation cohorts

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Characteristics** | **Total** | **Training cohort** | **Validation cohort** | **P-value** |
|  | **n=453** | **n=227** | **n=226** |  |
| **Age** |  |  |  | 0.236 |
| <60 | 125 | 57 | 68 |  |
| ≥60 | 328 | 170 | 158 |  |
| **Gender** |  |  |  | 0.278 |
| Male | 239 | 114 | 125 |  |
| Female | 214 | 113 | 101 |  |
| **T stage** |  |  |  | 0.393 |
| T1 | 12 | 8 | 4 |  |
| T2 | 77 | 34 | 43 |  |
| T3 | 308 | 159 | 149 |  |
| T4 | 56 | 26 | 30 |  |
| **N stage** |  |  |  | 0.230 |
| N0 | 266 | 127 | 139 |  |
| N1+N2 | 187 | 100 | 87 |  |
| **M stage** |  |  |  | 1.000 |
| M0 | 332 | 166 | 166 |  |
| M1 | 64 | 32 | 32 |  |
| **Pathologic stage** |  |  |  | 0.330 |
| Stage I+II | 251 | 119 | 132 |  |
| Stage III+IV | 192 | 100 | 92 |  |

**Supplemental Table 4**. The 5-pseudogene risk score model

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Pseudogene** | **Coef** | **Exp(coef)** | **Se(coef)** | **z** | **P-value** |
| DDX12P | 0.002045 | 1.002047 | 0.001149 | 1.780 | 0.0751 |
| NCF1C | 0.003879 | 1.003887 | 0.001597 | 2.429 | 0.0151 |
| PLEKHA8P1 | 0.003856 | 1.003863 | 0.001908 | 2.020 | 0.0433 |
| RP9P | 0.001913 | 1.001915 | 0.001161 | 1.647 | 0.0995 |
| YWHAZP4 | -0.006358 | 0.993662 | 0.003542 | -1.795 | 0.0726 |