Review

Chondroitin sulfate proteoglycan 4 as a marker for aggressive squamous cell carcinoma

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**Supplementary Data**

**Supplementary Table S1. Top 100 genes correlated with CSPG4 in HNSCC.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Ensembl** | **R1** | **R2** | **OMIM** |
| PDPN | ENSG00000162493.16 | 0.61 | 0.32 | IMM, GPS, ADH |
| PLEC | ENSG00000178209.14 | 0.61 | -0.48 | ADH |
| FLRT2 | ENSG00000185070.10 | 0.6 | -0.07 | ADH |
| CYP26B1 | ENSG00000003137.8 | 0.59 | -0.52 | IMU |
| **MN1** | **ENSG00000169184.5** | **0.58** | **0.73#** | **TRN** |
| PIK3CD | ENSG00000171608.15 | 0.58 | -0.67 | GPS, SIG, EMT |
| PTRF | ENSG00000177469.12 | 0.58 | - | TRA, SIG |
| **LAMC2** | **ENSG00000058085.14** | **0.57** | **0.95#** | **ADH, IMM, SIG** |
| **APP** | **ENSG00000142192.20** | **0.57** | **0.49#** | **TRN** |
| ITGA3 | ENSG00000005884.17 | 0.57 | 0.19 | ADH |
| **SIRPA** | **ENSG00000198053.11** | **0.56** | **0.85#** | **SIG** |
| **SNAI2** | **ENSG00000019549.8** | **0.56** | **0.61#** | **TRN, EMT** |
| **COL17A1** | **ENSG00000065618.16** | **0.56** | **0.54#** | **ADH** |
| PMEPA1 | ENSG00000124225.15 | 0.56 | 0.42 | SIG |
| LAMA3 | ENSG00000053747.15 | 0.56 | 0.25 | ADH, IMM, SIG |
| LRRC8C | ENSG00000171488.14 | 0.56 | -0.1 | TRA |
| **TENM3** | **ENSG00000218336.7** | **0.55** | **0.86#** | **OTH** |
| **ACTN1** | **ENSG00000072110.13** | **0.55** | **0.6#** | **ADH, IMM** |
| LTBP1 | ENSG00000049323.15 | 0.55 | -0.09 | SIG |
| CSMD2 | ENSG00000121904.17 | 0.55 | -0.19 | IMM |
| WNT7A | ENSG00000154764.5 | 0.55 | -0.37 | SIG |
| CSPG4P13 | ENSG00000260139.6 | 0.55 | -0.81 | Other |
| APBB2 | ENSG00000163697.16 | 0.54 | 0.11 | TRN |
| SDK2 | ENSG00000069188.16 | 0.54 | -0.22 | ADH |
| ANTXR2 | ENSG00000163297.16 | 0.54 | -0.59 | ADH |
| **PRNP** | **ENSG00000171867.16** | **0.53** | **0.68#** | **NA** |
| **SLC12A4** | **ENSG00000124067.16** | **0.53** | **0.57#** | **NA** |
| KIAA1644 | ENSG00000138944.7 | 0.53 | 0.42 | Other |
| ANXA5 | ENSG00000164111.14 | 0.53 | 0.33 | GPS, TRA, SIG |
| PXN | ENSG00000089159.15 | 0.53 | 0.32 | ADH |
| SPON2 | ENSG00000159674.11 | 0.53 | 0.11 | ADH |
| STON2 | ENSG00000140022.9 | 0.53 | 0.05 | TRA |
| IRS1 | ENSG00000169047.5 | 0.53 | -0.12 | TRA |
| CD276 | ENSG00000103855.17 | 0.53 | -0.33 | IMU |
| TNFRSF12A | ENSG00000006327.13 | 0.53 | -0.49 | SIG |
| LAMB3 | ENSG00000196878.12 | 0.53 | -0.72 | GPS |
| RTN4 | ENSG00000115310.17 | 0.53 | - | GPS |
| **ITGA5** | **ENSG00000161638.10** | **0.52** | **0.93#** | **SIG** |
| **ITGA6** | **ENSG00000091409.14** | **0.52** | **0.56#** | **IMM** |
| VEGFC | ENSG00000150630.3 | 0.52 | 0.44 | GPS, TRN |
| SLC39A13 | ENSG00000165915.13 | 0.52 | 0.13 | TRA |
| CYP27C1 | ENSG00000186684.12 | 0.52 | 0.08 | TRN |
| MUL1 | ENSG00000090432.6 | 0.52 | -0.63 | SIG |
| AJAP1 | ENSG00000196581.10 | 0.51 | 0.36 | IMM |
| AC108142.1 | ENSG00000177822.7 | 0.51 | 0.26 | Other |
| INHBA | ENSG00000122641.9 | 0.51 | 0.11 | GPS, EMT |
| EFNB1 | ENSG00000090776.5 | 0.51 | -0.35 | GPS, TRN |
| PLCD4 | ENSG00000115556.13 | 0.51 | -0.67 | SIG |
| EXT1 | ENSG00000182197.10 | 0.51 | -0.71 | GPS |
| GNA12 | ENSG00000146535.13 | 0.51 | - | GPS, IMM. SIG |
| **EDNRA** | **ENSG00000151617.15** | **0.5** | **0.74#** | **TRN** |
| **PLEK2** | **ENSG00000100558.8** | **0.5** | **0.65#** | **GPS, IMM** |
| **ITGB1** | **ENSG00000150093.18** | **0.5** | **0.53#** | **GPS** |
| EHD2 | ENSG00000024422.11 | 0.5 | 0.43 | TRA |
| GRIA3 | ENSG00000125675.17 | 0.5 | -0.21 | TRA |
| RP11-497E19.1 | ENSG00000205562.2 | 0.5 | -0.32 | Other |
| SERPINE1 | ENSG00000106366.8 | 0.5 | -0.34 | TRN |
| KIRREL | ENSG00000183853.17 | 0.5 | -0.35 | Other |
| CD151 | ENSG00000177697.17 | 0.5 | -0.41 | GPS, SIG |
| COL4A2 | ENSG00000134871.17 | 0.5 | -0.64 | GPS |
| SEMA3C | ENSG00000075223.13 | 0.5 | - | GPS |
| CLMP | ENSG00000166250.11 | 0.5 | - | ADH |
| **PLAU** | **ENSG00000122861.15** | **0.49** | **0.75#** | **IMM** |
| **P4HA2** | **ENSG00000072682.18** | **0.49** | **0.66#** | **GPS, SIG** |
| **VAV2** | **ENSG00000160293.16** | **0.49** | **0.66#** | **SIG** |
| **ACTR1A** | **ENSG00000138107.11** | **0.49** | **0.66#** | **TRA** |
| **RAB11FIP5** | **ENSG00000135631.15** | **0.49** | **0.64#** | **TRA** |
| **RP11-167H9.3** | **ENSG00000243321.3** | **0.49** | **0.63#** | **Other** |
| **LUZP1** | **ENSG00000169641.13** | **0.49** | **0.59#** | **SIG** |
| ESYT1 | ENSG00000139641.12 | 0.49 | 0.31 | GPS, TRA |
| PDGFC | ENSG00000145431.10 | 0.49 | 0.17 | GPS |
| DSE | ENSG00000111817.16 | 0.49 | -0.09 | IMU, TRN |
| PANX1 | ENSG00000110218.8 | 0.49 | -0.11 | SIG |
| DKK3 | ENSG00000050165.17 | 0.49 | -0.12 | SIG |
| TLL1 | ENSG00000038295.7 | 0.49 | - | Other |
| **TSPAN5** | **ENSG00000168785.7** | **0.48** | **0.76#** | **GPS, ADH, IMM** |
| **SRRD** | **ENSG00000100104.12** | **0.48** | **0.62#** | **Other** |
| FBLIM1 | ENSG00000162458.12 | 0.48 | 0.16 | ADH |
| MSN | ENSG00000147065.16 | 0.48 | 0.01 | IMM, SIG |
| SLC9A1 | ENSG00000090020.10 | 0.48 | -0.57 | Other |
| CHSY1 | ENSG00000131873.5 | 0.48 | -0.6 | GPS |
| COL16A1 | ENSG00000084636.17 | 0.48 | -0.61 | Other |
| EHD1 | ENSG00000110047.17 | 0.47 | 0.62 | TRA |
| PTPN21 | ENSG00000070778.12 | 0.47 | 0.31 | GPS, SIG |
| LIMA1 | ENSG00000050405.13 | 0.47 | 0.24 | ADH |
| PLOD1 | ENSG00000083444.16 | 0.47 | -0.3 | TRN |
| CLSTN1 | ENSG00000171603.16 | 0.47 | -0.5 | TRA, SIG |
| TSHZ3 | ENSG00000121297.6 | 0.47 | -0.74 | TRN, SIG |
| **SORCS2** | **ENSG00000184985.16** | **0.46** | **0.49#** | **SIG** |
| PHLDB1 | ENSG00000019144.16 | 0.46 | 0.39 | GPS, EMT |
| VDR | ENSG00000111424.10 | 0.46 | 0.19 | TRN |
| PTK7 | ENSG00000112655.15 | 0.46 | 0.14 | IMM |
| COL4A1 | ENSG00000187498.14 | 0.46 | 0.13 | TRN |
| AFAP1L1 | ENSG00000157510.13 | 0.46 | 0.05 | GPS |
| TGFBR2 | ENSG00000163513.17 | 0.46 | -0.12 | TRN, SIG |
| TGFBI | ENSG00000120708.16 | 0.46 | -0.18 | TRN |
| SCRN1 | ENSG00000136193.16 | 0.46 | -0.44 | Other |
| MYH9 | ENSG00000100345.20 | 0.46 | -0.48 | TRN |
| MMP14 | ENSG00000157227.12 | 0.46 | -0.58 | TRN |
| NT5E | ENSG00000135318.11 | 0.46 | -0.58 | TRN |

**Supplementary Table S1**. Top 100 genes expressed in HNSCC and correlated with CSPG4 (R1 > 0.46, by Pearson correlation). Also shown correlation in RDEB-SCCs (R2) [47, 51]. Genes significantly correlated with CSPG4 in both HNSC and RDEB-SCC are indicated #, and bolded (R > 0.46, both HNSC & RDEB-SCC). Also shown gene function based on OMIM ontology analysis [138]. ADH – adhesion, EMT – epithelial to mesenchymal transition, GPS – growth, proliferation, survival, IMM – invasion, migration, metastasis, IMU – immune, OTH – other; SIG – signalling, TRA – miscellaneous cell transport events, TRN – transcription.