

**Table S1.** The primers used in RT-qPCR.

| <b>Gene</b>              | <b>5' to 3'</b>         |
|--------------------------|-------------------------|
| <i>DDX11</i> _Forward    | AGGACGACTGAAGCTCTTGC    |
| <i>DDX11</i> _Reverse    | CACAGCTGGATTCAGGAGCA    |
| <i>E2F1</i> _Forward     | CGCCATCCAGGAAAAGGTGT    |
| <i>E2F1</i> _Reverse     | ATGTCATAGATGCGCCGCTT    |
| <i>NPTX1</i> _Forward    | CCAACGAGCTGGTCCTCATT    |
| <i>NPTX1</i> _Reverse    | GTGATAGGGCGCCAAGTTCT    |
| <i>PLXNA4</i> _Forward   | TCAAAGGAGACCGGCATGAC    |
| <i>PLXNA4</i> _Reverse   | CTGGAAGGAGCAGGTCTTGG    |
| <i>SLC25A23</i> _Forward | GATGTGACGTAGCAGACCCA    |
| <i>SLC25A23</i> _Reverse | TGGTGGCTTCAGCAGTACAG    |
| <i>GAPDH</i> _Forward    | GAGTCAACGGATTTGGTCGT    |
| <i>GAPDH</i> _Reverse    | TTGATTTTGGAGGGATCTCG    |
| <b>miRNA</b>             | <b>5' to 3'</b>         |
| has-miR-92a-1-5p         | AGGTTGGGATCGGTTGCAATGCT |
| has-miR-486-3p           | CGGGGCAGCTCAGTACAGGAT   |

**Table S2.** Dysregulated genes in nintedanib-treated IPF fibroblast.

| Upregulated Genes |         |                      |                      |                                  |         |         |                                  |         |         |
|-------------------|---------|----------------------|----------------------|----------------------------------|---------|---------|----------------------------------|---------|---------|
| Gene Symbol       | FPKM    |                      |                      | Nintedanib 2 $\mu$ M vs. Control |         |         | Nintedanib 4 $\mu$ M vs. Control |         |         |
|                   | Control | Nintedanib 2 $\mu$ M | Nintedanib 4 $\mu$ M | Ratio                            | P value | FDR P   | Ratio                            | P value | FDR P   |
| <i>CYP51A1</i>    | 85.111  | 246.905              | 350.467              | 2.90098                          | 0.0002  | 0.02302 | 4.11776                          | 0.00005 | 0.00781 |
| <i>IL32</i>       | 0.6016  | 2.36249              | 3.28585              | 3.92702                          | 0.00025 | 0.02717 | 5.46187                          | 0.00005 | 0.00781 |
| <i>PLEKHB1</i>    | 0.03776 | 1.03393              | 1.53624              | 27.3832                          | 0.0001  | 0.01351 | 40.6867                          | 0.00005 | 0.00781 |
| <i>RAB27B</i>     | 0.81566 | 4.15225              | 4.80502              | 5.09066                          | 0.00015 | 0.01843 | 5.89095                          | 0.00005 | 0.00781 |
| <i>MSMO1</i>      | 83.2235 | 314.354              | 428.344              | 3.77723                          | 0.00005 | 0.00781 | 5.14691                          | 0.00005 | 0.00781 |
| <i>COL11A1</i>    | 1.5869  | 12.1888              | 11.3932              | 7.68089                          | 0.00005 | 0.00781 | 7.17953                          | 0.00005 | 0.00781 |
| <i>GUCY1B3</i>    | 2.47552 | 6.82968              | 12.6249              | 2.75889                          | 0.00805 | 0.25699 | 5.0999                           | 0.00005 | 0.00781 |
| <i>IDH1</i>       | 59.8703 | 182.112              | 294.135              | 3.04178                          | 0.0052  | 0.19776 | 4.91287                          | 0.00005 | 0.00781 |
| <i>LMCD1</i>      | 11.8082 | 46.4574              | 57.2643              | 3.93433                          | 0.00025 | 0.02717 | 4.84954                          | 0.00005 | 0.00781 |
| <i>FRY</i>        | 3.34931 | 11.879               | 12.8797              | 3.5467                           | 0.00005 | 0.00781 | 3.84548                          | 0.00005 | 0.00781 |
| <i>MAP2</i>       | 5.64117 | 28.0845              | 35.1711              | 4.97849                          | 0.00005 | 0.00781 | 6.23472                          | 0.00005 | 0.00781 |
| <i>FDF1</i>       | 82.1629 | 185.723              | 227.837              | 2.26042                          | 0.0015  | 0.0899  | 2.77299                          | 0.00005 | 0.00781 |
| <i>SLC7A8</i>     | 4.82707 | 15.5507              | 31.1599              | 3.22156                          | 0.00055 | 0.04936 | 6.45524                          | 0.00005 | 0.00781 |
| <i>PALMD</i>      | 0.89599 | 4.74914              | 6.65261              | 5.30043                          | 0.00015 | 0.01843 | 7.42485                          | 0.00005 | 0.00781 |
| <i>KCNK6</i>      | 4.49098 | 15.6689              | 16.5609              | 3.48897                          | 0.00005 | 0.00781 | 3.68759                          | 0.00005 | 0.00781 |
| <i>PLA2G3</i>     | 0.32468 | 2.54314              | 3.71021              | 7.83266                          | 0.0001  | 0.01351 | 11.4271                          | 0.00005 | 0.00781 |
| <i>HMOX1</i>      | 22.6002 | 52.6263              | 80.8803              | 2.32858                          | 0.00085 | 0.06557 | 3.57874                          | 0.00005 | 0.00781 |
| <i>ABHD4</i>      | 8.54186 | 18.2277              | 27.0067              | 2.13393                          | 0.00495 | 0.19368 | 3.16169                          | 0.00005 | 0.00781 |
| <i>CRISPLD2</i>   | 5.27383 | 13.9721              | 20.9472              | 2.64933                          | 0.0005  | 0.04658 | 3.97191                          | 0.00005 | 0.00781 |
| <i>QPRT</i>       | 8.6699  | 24.9865              | 28.9918              | 2.88198                          | 0.00025 | 0.02717 | 3.34396                          | 0.00005 | 0.00781 |
| <i>RASL12</i>     | 0.3035  | 1.40887              | 2.54339              | 4.64203                          | 0.00115 | 0.0759  | 8.38011                          | 0.00005 | 0.00781 |
| <i>SQLE</i>       | 50.292  | 125.024              | 180.09               | 2.48596                          | 0.00055 | 0.04936 | 3.58089                          | 0.00005 | 0.00781 |
| <i>ITGB8</i>      | 3.49863 | 12.8903              | 15.3215              | 3.68439                          | 0.00005 | 0.00781 | 4.37929                          | 0.00005 | 0.00781 |
| <i>PRUNE2</i>     | 2.64214 | 11.298               | 21.8766              | 4.27608                          | 0.0001  | 0.01351 | 8.27988                          | 0.00005 | 0.00781 |
| <i>SC5D</i>       | 43.9941 | 103.822              | 132.397              | 2.35991                          | 0.00165 | 0.09584 | 3.00943                          | 0.00005 | 0.00781 |
| <i>HMGCS1</i>     | 60.0461 | 283.065              | 519.204              | 4.71413                          | 0.00005 | 0.00781 | 8.64676                          | 0.00005 | 0.00781 |
| <i>NME5</i>       | 0.0001  | 1.41923              | 2.59631              | 14192.3                          | 0.00005 | 0.00781 | 25963.1                          | 0.00005 | 0.00781 |
| <i>HMGCR</i>      | 37.1334 | 92.0897              | 159.768              | 2.47997                          | 0.0007  | 0.05725 | 4.30254                          | 0.00005 | 0.00781 |
| <i>EFEMP1</i>     | 21.7203 | 57.2904              | 77.8266              | 2.63764                          | 0.0002  | 0.02302 | 3.58313                          | 0.00005 | 0.00781 |
| <i>QPCT</i>       | 1.70109 | 9.0651               | 10.8714              | 5.32899                          | 0.00015 | 0.01843 | 6.39084                          | 0.00005 | 0.00781 |
| <i>DHCR24</i>     | 97.4412 | 243.228              | 276.696              | 2.49615                          | 0.00065 | 0.05472 | 2.83962                          | 0.00005 | 0.00781 |
| <i>PLPPR4</i>     | 4.14454 | 20.8544              | 28.4783              | 5.03178                          | 0.00005 | 0.00781 | 6.87128                          | 0.00005 | 0.00781 |
| <i>TCF21</i>      | 7.49341 | 46.17                | 66.9578              | 6.16141                          | 0.00005 | 0.00781 | 8.93556                          | 0.00005 | 0.00781 |
| <i>C1orf198</i>   | 13.392  | 37.8735              | 40.9468              | 2.82807                          | 0.00005 | 0.00781 | 3.05756                          | 0.00005 | 0.00781 |
| <i>NR4A3</i>      | 1.44922 | 8.44807              | 22.3449              | 5.82939                          | 0.00005 | 0.00781 | 15.4186                          | 0.00005 | 0.00781 |
| <i>AVP1</i>       | 4.98145 | 22.3648              | 28.2743              | 4.48962                          | 0.00005 | 0.00781 | 5.67592                          | 0.00005 | 0.00781 |
| <i>FABP3</i>      | 19.1573 | 171.406              | 268.067              | 8.94729                          | 0.00005 | 0.00781 | 13.9929                          | 0.00005 | 0.00781 |
| <i>NR4A1</i>      | 6.00173 | 22.6834              | 33.4358              | 3.77948                          | 0.00005 | 0.00781 | 5.57103                          | 0.00005 | 0.00781 |
| <i>KCNJ2</i>      | 3.61596 | 12.941               | 15.6956              | 3.57886                          | 0.0001  | 0.01351 | 4.34065                          | 0.00005 | 0.00781 |
| <i>TMEM255A</i>   | 0.8491  | 4.42398              | 5.65901              | 5.21019                          | 0.00005 | 0.00781 | 6.66471                          | 0.00005 | 0.00781 |
| <i>MASP1</i>      | 2.9766  | 11.0434              | 18.8306              | 3.71007                          | 0.00015 | 0.01843 | 6.32621                          | 0.00005 | 0.00781 |
| <i>ACSS2</i>      | 10.751  | 31.6077              | 56.2667              | 2.93998                          | 0.0002  | 0.02302 | 5.23362                          | 0.00005 | 0.00781 |
| <i>RAMP1</i>      | 2.46885 | 11.2088              | 18.3691              | 4.54009                          | 0.0001  | 0.01351 | 7.44035                          | 0.00005 | 0.00781 |
| <i>SYT11</i>      | 22.6546 | 74.6388              | 82.3654              | 3.29464                          | 0.00005 | 0.00781 | 3.6357                           | 0.00005 | 0.00781 |
| <i>EPSTI1</i>     | 0.54844 | 3.34983              | 3.84466              | 6.10798                          | 0.00005 | 0.00781 | 7.01024                          | 0.00005 | 0.00781 |
| <i>KRT7</i>       | 2.68951 | 12.2456              | 10.7174              | 4.5531                           | 0.00005 | 0.00781 | 3.98489                          | 0.00005 | 0.00781 |
| <i>IL6</i>        | 0.5836  | 9.50339              | 15.8866              | 16.2841                          | 0.00005 | 0.00781 | 27.2217                          | 0.00005 | 0.00781 |
| <i>SCN7A</i>      | 0.43332 | 9.22359              | 15.2088              | 21.2858                          | 0.00005 | 0.00781 | 35.0981                          | 0.00005 | 0.00781 |
| <i>CYP1B1</i>     | 28.9011 | 132.36               | 131.272              | 4.57976                          | 0.00005 | 0.00781 | 4.54211                          | 0.00005 | 0.00781 |
| <i>SLC40A1</i>    | 2.81819 | 20.8316              | 38.5491              | 7.39184                          | 0.00005 | 0.00781 | 13.6787                          | 0.00005 | 0.00781 |

|                  |         |         |         |         |         |         |         |         |         |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <i>GABARAPL1</i> | 10.6071 | 46.6337 | 68.1393 | 4.39646 | 0.00005 | 0.00781 | 6.42393 | 0.00005 | 0.00781 |
| <i>SNCA</i>      | 1.06913 | 6.55458 | 10.146  | 6.13076 | 0.00025 | 0.02717 | 9.48996 | 0.00005 | 0.00781 |
| <i>TTBK1</i>     | 0.02723 | 0.56922 | 0.67189 | 20.9043 | 0.00015 | 0.01843 | 24.6746 | 0.00005 | 0.00781 |
| <i>PTGES</i>     | 0.80834 | 10.3906 | 18.0879 | 12.8543 | 0.00005 | 0.00781 | 22.3766 | 0.00005 | 0.00781 |
| <i>SERPING1</i>  | 11.7528 | 31.1492 | 40.9299 | 2.65036 | 0.0024  | 0.12395 | 3.48257 | 0.00005 | 0.00781 |
| <i>ITPR1</i>     | 2.14873 | 6.57691 | 8.99693 | 3.06084 | 0.00125 | 0.0795  | 4.18709 | 0.00005 | 0.00781 |
| <i>FBXO32</i>    | 2.50888 | 5.19172 | 16.2372 | 2.06934 | 0.0267  | 0.48222 | 6.47189 | 0.00005 | 0.00781 |
| <i>TSC22D3</i>   | 3.53944 | 16.0225 | 26.1375 | 4.52685 | 0.0001  | 0.01351 | 7.38464 | 0.00005 | 0.00781 |
| <i>COX6B2</i>    | 0.0001  | 0.42945 | 0.66676 | 4294.52 | 0.00005 | 0.00781 | 6667.57 | 0.00005 | 0.00781 |
| <i>IL6R</i>      | 2.07724 | 6.09374 | 8.01432 | 2.93358 | 0.00085 | 0.06557 | 3.85816 | 0.00005 | 0.00781 |
| <i>FDPS</i>      | 100.824 | 236.872 | 306.508 | 2.34936 | 0.0051  | 0.19594 | 3.04003 | 0.00005 | 0.00781 |
| <i>FGFR4</i>     | 0.41418 | 3.24768 | 4.19507 | 7.84121 | 0.00015 | 0.01843 | 10.1286 | 0.00005 | 0.00781 |
| <i>DMKN</i>      | 1.63121 | 10.8443 | 25.5677 | 6.64801 | 0.00005 | 0.00781 | 15.6741 | 0.00005 | 0.00781 |
| <i>ITIH3</i>     | 0.0001  | 0.62354 | 0.37469 | 6235.43 | 0.00005 | 0.00781 | 3746.92 | 0.00005 | 0.00781 |
| <i>GBP2</i>      | 4.14821 | 13.3421 | 16.2216 | 3.21635 | 0.0007  | 0.05725 | 3.91051 | 0.00005 | 0.00781 |
| <i>PBXIP1</i>    | 8.82626 | 22.5696 | 30.8042 | 2.5571  | 0.00425 | 0.17556 | 3.49006 | 0.00005 | 0.00781 |
| <i>LMOD1</i>     | 6.41129 | 20.1124 | 23.6959 | 3.13703 | 0.0001  | 0.01351 | 3.69596 | 0.00005 | 0.00781 |
| <i>FBLN2</i>     | 2.55628 | 6.40659 | 8.29674 | 2.50622 | 0.00155 | 0.09222 | 3.24563 | 0.00005 | 0.00781 |
| <i>FAM198B</i>   | 2.59285 | 15.5109 | 19.7946 | 5.98218 | 0.00005 | 0.00781 | 7.6343  | 0.00005 | 0.00781 |
| <i>ELOVL7</i>    | 0.0001  | 0.33987 | 0.46469 | 3398.65 | 0.00005 | 0.00781 | 4646.94 | 0.00005 | 0.00781 |
| <i>ALDH1A1</i>   | 10.0967 | 43.6441 | 63.0852 | 4.32261 | 0.00005 | 0.00781 | 6.2481  | 0.00005 | 0.00781 |
| <i>TMEM130</i>   | 1.00813 | 6.41711 | 9.7974  | 6.36536 | 0.00005 | 0.00781 | 9.71839 | 0.00005 | 0.00781 |
| <i>NNMT</i>      | 22.0815 | 68.2184 | 83.9306 | 3.08939 | 0.00055 | 0.04936 | 3.80095 | 0.00005 | 0.00781 |
| <i>MVD</i>       | 26.2264 | 75.5978 | 118.777 | 2.88251 | 0.0001  | 0.01351 | 4.52891 | 0.00005 | 0.00781 |
| <i>PCSK9</i>     | 0.22696 | 0.847   | 1.8135  | 3.73193 | 0.00525 | 0.19874 | 7.99036 | 0.00005 | 0.00781 |
| <i>MN1</i>       | 0.43611 | 2.14195 | 4.07207 | 4.91152 | 0.00005 | 0.00781 | 9.33732 | 0.00005 | 0.00781 |
| <i>SYNPO</i>     | 2.55124 | 10.509  | 11.7668 | 4.11917 | 0.00005 | 0.00781 | 4.61219 | 0.00005 | 0.00781 |
| <i>ISG20</i>     | 0.46154 | 1.85702 | 3.30114 | 4.0235  | 0.0096  | 0.28438 | 7.15238 | 0.00005 | 0.00781 |
| <i>SYNPO2</i>    | 7.52423 | 27.3958 | 27.2474 | 3.64101 | 0.00005 | 0.00781 | 3.62129 | 0.00005 | 0.00781 |
| <i>DHCR7</i>     | 32.4392 | 96.4099 | 139.98  | 2.97202 | 0.0001  | 0.01351 | 4.31515 | 0.00005 | 0.00781 |
| <i>PODN</i>      | 4.71906 | 16.2485 | 16.0535 | 3.44316 | 0.00005 | 0.00781 | 3.40184 | 0.00005 | 0.00781 |
| <i>A2M</i>       | 1.68293 | 6.965   | 13.6387 | 4.13862 | 0.0007  | 0.05725 | 8.10414 | 0.00005 | 0.00781 |
| <i>MAF</i>       | 5.19774 | 19.6118 | 34.114  | 3.77314 | 0.00005 | 0.00781 | 6.56324 | 0.00005 | 0.00781 |
| <i>OLFML1</i>    | 17.0525 | 44.8176 | 51.7319 | 2.62821 | 0.00065 | 0.05472 | 3.03368 | 0.00005 | 0.00781 |
| <i>CEND1</i>     | 1.40638 | 9.08861 | 10.7633 | 6.46241 | 0.00005 | 0.00781 | 7.65319 | 0.00005 | 0.00781 |
| <i>THBS2</i>     | 11.9091 | 34.4398 | 43.7726 | 2.89189 | 0.0001  | 0.01351 | 3.67556 | 0.00005 | 0.00781 |
| <i>TPRG1</i>     | 0.0001  | 0.65649 | 0.44839 | 6564.87 | 0.00005 | 0.00781 | 4483.86 | 0.00005 | 0.00781 |
| <i>PRELP</i>     | 5.94306 | 20.3331 | 22.9857 | 3.42132 | 0.00005 | 0.00781 | 3.86765 | 0.00005 | 0.00781 |
| <i>LITAF</i>     | 56.8891 | 152.129 | 210.397 | 2.67413 | 0.00005 | 0.00781 | 3.69837 | 0.00005 | 0.00781 |
| <i>NLGN3</i>     | 0.18641 | 1.28997 | 1.90115 | 6.92003 | 0.0002  | 0.02302 | 10.1987 | 0.00005 | 0.00781 |
| <i>DPP4</i>      | 18.3098 | 51.287  | 68.9147 | 2.80107 | 0.0003  | 0.03149 | 3.76382 | 0.00005 | 0.00781 |
| <i>FAM49A</i>    | 1.18426 | 4.43354 | 5.75523 | 3.74372 | 0.00055 | 0.04936 | 4.85977 | 0.00005 | 0.00781 |
| <i>MBP</i>       | 0.91393 | 4.53777 | 8.20287 | 4.96512 | 0.00005 | 0.00781 | 8.97538 | 0.00005 | 0.00781 |
| <i>LBH</i>       | 59.1584 | 222.128 | 211.065 | 3.7548  | 0.00005 | 0.00781 | 3.56779 | 0.00005 | 0.00781 |
| <i>CEBPD</i>     | 3.52652 | 12.8432 | 18.3278 | 3.64189 | 0.00005 | 0.00781 | 5.19713 | 0.00005 | 0.00781 |
| <i>SLC12A8</i>   | 1.05204 | 6.2713  | 8.26196 | 5.96109 | 0.0001  | 0.01351 | 7.85328 | 0.00005 | 0.00781 |
| <i>HBD</i>       | 0.0001  | 0.56368 | 0.97227 | 5636.83 | 0.00015 | 0.01843 | 9722.66 | 0.00005 | 0.00781 |
| <i>C1QTNF5</i>   | 4.678   | 19.1955 | 22.4531 | 4.10336 | 0.0001  | 0.01351 | 4.79972 | 0.00005 | 0.00781 |
| <i>MIAT</i>      | 0.8635  | 4.48866 | 6.86352 | 5.1982  | 0.0003  | 0.03149 | 7.94846 | 0.00005 | 0.00781 |
| <i>SELENOP</i>   | 16.1881 | 106.181 | 163.901 | 6.5592  | 0.00005 | 0.00781 | 10.1248 | 0.00005 | 0.00781 |
| <i>NATD1</i>     | 1.09513 | 2.79433 | 5.3477  | 2.5516  | 0.00645 | 0.22565 | 4.88316 | 0.00005 | 0.00781 |
| <i>TRO</i>       | 2.78669 | 9.69767 | 11.6692 | 3.48    | 0.0004  | 0.03952 | 4.18748 | 0.0001  | 0.01351 |
| <i>NTN4</i>      | 4.67257 | 19.2037 | 19.2069 | 4.10988 | 0.0001  | 0.01351 | 4.11056 | 0.0001  | 0.01351 |
| <i>IGFBP5</i>    | 241.188 | 787.991 | 834.732 | 3.26712 | 0.00005 | 0.00781 | 3.46092 | 0.0001  | 0.01351 |
| <i>RASL11A</i>   | 1.20926 | 2.86063 | 6.19499 | 2.3656  | 0.0343  | 0.54697 | 5.12296 | 0.0001  | 0.01351 |
| <i>FMOD</i>      | 0.85942 | 3.51664 | 4.32649 | 4.09186 | 0.00065 | 0.05472 | 5.03418 | 0.0001  | 0.01351 |

|                 |         |         |         |         |         |         |         |         |         |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <i>CLSTN3</i>   | 3.57795 | 7.78863 | 12.3256 | 2.17684 | 0.0098  | 0.28701 | 3.44488 | 0.0001  | 0.01351 |
| <i>ANK2</i>     | 9.19601 | 22.7836 | 26.9839 | 2.47755 | 0.0022  | 0.11683 | 2.93431 | 0.0001  | 0.01351 |
| <i>RSPO3</i>    | 0.62941 | 4.41782 | 5.01906 | 7.01901 | 0.00015 | 0.01843 | 7.97426 | 0.0001  | 0.01351 |
| <i>MX1</i>      | 1.14151 | 3.55763 | 5.27772 | 3.1166  | 0.0032  | 0.14835 | 4.62345 | 0.0001  | 0.01351 |
| <i>C1orf115</i> | 0.74829 | 2.85014 | 3.53166 | 3.80889 | 0.00115 | 0.0759  | 4.71967 | 0.0001  | 0.01351 |
| <i>CCDC68</i>   | 4.09049 | 14.8221 | 18.9988 | 3.62355 | 0.00055 | 0.04936 | 4.64463 | 0.0001  | 0.01351 |
| <i>SEMA3B</i>   | 5.17733 | 14.3972 | 18.4511 | 2.78082 | 0.0032  | 0.14835 | 3.56383 | 0.00015 | 0.01843 |
| <i>COL9A2</i>   | 0.05686 | 0.8656  | 1.48552 | 15.2232 | 0.0014  | 0.0858  | 26.1256 | 0.00015 | 0.01843 |
| <i>MRVI1</i>    | 8.75456 | 24.1534 | 26.5207 | 2.75895 | 0.00035 | 0.03559 | 3.02936 | 0.00015 | 0.01843 |
| <i>WISP1</i>    | 0.31481 | 1.75912 | 1.88472 | 5.58781 | 0.0004  | 0.03952 | 5.98677 | 0.00015 | 0.01843 |
| <i>PTGDS</i>    | 1.26807 | 9.82134 | 12.8061 | 7.74511 | 0.00065 | 0.05472 | 10.0989 | 0.00015 | 0.01843 |
| <i>ID2</i>      | 36.2159 | 88.4644 | 111.648 | 2.4427  | 0.0014  | 0.0858  | 3.08284 | 0.00015 | 0.01843 |
| <i>FAM213A</i>  | 1.54229 | 6.31835 | 11.6113 | 4.09673 | 0.00255 | 0.12857 | 7.52861 | 0.00015 | 0.01843 |
| <i>FGL2</i>     | 2.13662 | 17.0177 | 38.2658 | 7.96478 | 0.0036  | 0.15948 | 17.9095 | 0.00015 | 0.01843 |
| <i>HSD17B7</i>  | 4.37537 | 16.3895 | 20.3716 | 3.74585 | 0.0006  | 0.05203 | 4.65597 | 0.00015 | 0.01843 |
| <i>ZBED3</i>    | 1.38679 | 3.24784 | 4.80499 | 2.34198 | 0.0093  | 0.28025 | 3.46483 | 0.00015 | 0.01843 |
| <i>ADAMTS14</i> | 0.99088 | 2.22644 | 2.95576 | 2.24693 | 0.01015 | 0.29304 | 2.98297 | 0.00015 | 0.01843 |
| <i>PRRT3</i>    | 1.21031 | 4.07025 | 4.35077 | 3.36298 | 0.0007  | 0.05725 | 3.59476 | 0.00015 | 0.01843 |
| <i>ANTXR1</i>   | 48.514  | 98.4778 | 130.287 | 2.02988 | 0.00845 | 0.26663 | 2.68555 | 0.00015 | 0.01843 |
| <i>OLFML2A</i>  | 1.19185 | 4.82345 | 5.80781 | 4.04703 | 0.00105 | 0.07202 | 4.87294 | 0.00015 | 0.01843 |
| <i>PIR</i>      | 1.929   | 7.35318 | 8.99477 | 3.81191 | 0.00125 | 0.0795  | 4.66292 | 0.0002  | 0.02302 |
| <i>RASSF2</i>   | 1.86194 | 5.74684 | 5.77593 | 3.08648 | 0.0003  | 0.03149 | 3.1021  | 0.0002  | 0.02302 |
| <i>RARRES2</i>  | 0.40621 | 4.8783  | 7.67515 | 12.0093 | 0.00085 | 0.06557 | 18.8946 | 0.0002  | 0.02302 |
| <i>KLHL24</i>   | 7.03433 | 14.2111 | 26.8495 | 2.02025 | 0.04065 | 0.60246 | 3.81692 | 0.0002  | 0.02302 |
| <i>SLC4A3</i>   | 0.56613 | 2.40904 | 3.01715 | 4.25525 | 0.00115 | 0.0759  | 5.32939 | 0.0002  | 0.02302 |
| <i>HRK</i>      | 0.44937 | 1.38566 | 2.40675 | 3.08356 | 0.0116  | 0.3107  | 5.35583 | 0.0002  | 0.02302 |
| <i>CDKL2</i>    | 0.71619 | 3.83392 | 5.39026 | 5.35322 | 0.0012  | 0.07825 | 7.5263  | 0.0002  | 0.02302 |
| <i>CMYA5</i>    | 0.74393 | 2.00188 | 3.132   | 2.69096 | 0.00915 | 0.27761 | 4.21008 | 0.0002  | 0.02302 |
| <i>HSPB3</i>    | 2.0152  | 7.00139 | 11.2631 | 3.47429 | 0.00675 | 0.22958 | 5.58907 | 0.0002  | 0.02302 |
| <i>ARHGEF37</i> | 0.59349 | 2.18305 | 2.89268 | 3.67832 | 0.001   | 0.06987 | 4.87401 | 0.0002  | 0.02302 |
| <i>NDRG4</i>    | 1.31144 | 3.23902 | 4.52862 | 2.46982 | 0.00385 | 0.16605 | 3.45317 | 0.00025 | 0.02717 |
| <i>PARD3B</i>   | 3.2124  | 7.82425 | 8.93585 | 2.43564 | 0.0015  | 0.0899  | 2.78167 | 0.00025 | 0.02717 |
| <i>CCDC170</i>  | 0.13169 | 1.04602 | 1.7599  | 7.94287 | 0.0019  | 0.10548 | 13.3637 | 0.00025 | 0.02717 |
| <i>PLXDC2</i>   | 1.43314 | 4.17422 | 6.81632 | 2.91264 | 0.0103  | 0.29373 | 4.75621 | 0.00025 | 0.02717 |
| <i>RNF112</i>   | 0.72123 | 3.70569 | 5.26586 | 5.13804 | 0.0021  | 0.11324 | 7.30125 | 0.00025 | 0.02717 |
| <i>IDH1</i>     | 83.1234 | 171.744 | 216.101 | 2.06613 | 0.0039  | 0.16717 | 2.59976 | 0.00025 | 0.02717 |
| <i>VLDLR</i>    | 3.94341 | 8.56573 | 12.7494 | 2.17216 | 0.01595 | 0.36831 | 3.23309 | 0.00025 | 0.02717 |
| <i>ALS2CL</i>   | 0.374   | 1.93683 | 2.77198 | 5.17863 | 0.00135 | 0.08379 | 7.41163 | 0.00025 | 0.02717 |
| <i>LYNX1</i>    | 3.78173 | 9.01081 | 17.0594 | 2.38272 | 0.03385 | 0.54316 | 4.511   | 0.00025 | 0.02717 |
| <i>PROS1</i>    | 11.073  | 29.1637 | 35.6465 | 2.63377 | 0.0013  | 0.08151 | 3.21923 | 0.00025 | 0.02717 |
| <i>RNASE4</i>   | 3.68167 | 14.2807 | 20.6505 | 3.87886 | 0.00275 | 0.13504 | 5.609   | 0.00025 | 0.02717 |
| <i>HSD17B14</i> | 3.08701 | 10.189  | 13.803  | 3.3006  | 0.002   | 0.10917 | 4.47132 | 0.0003  | 0.03149 |
| <i>HIP1R</i>    | 3.14901 | 7.3259  | 10.3723 | 2.32641 | 0.00885 | 0.27291 | 3.29383 | 0.0003  | 0.03149 |
| <i>CYP27A1</i>  | 3.65009 | 7.90203 | 11.5116 | 2.16489 | 0.0156  | 0.36297 | 3.15379 | 0.0003  | 0.03149 |
| <i>LSS</i>      | 62.0951 | 155.793 | 186.019 | 2.50894 | 0.0029  | 0.1396  | 2.99571 | 0.0003  | 0.03149 |
| <i>ACOX2</i>    | 2.07837 | 6.05247 | 7.31636 | 2.91212 | 0.00315 | 0.14757 | 3.52024 | 0.0003  | 0.03149 |
| <i>C1S</i>      | 44.1932 | 99.6325 | 134.094 | 2.25448 | 0.0062  | 0.21973 | 3.03427 | 0.0003  | 0.03149 |
| <i>WFDC1</i>    | 0.49661 | 2.68857 | 3.5407  | 5.41389 | 0.0011  | 0.07421 | 7.1298  | 0.00035 | 0.03559 |
| <i>GCH1</i>     | 1.54708 | 3.3293  | 6.48808 | 2.15199 | 0.04985 | 0.66414 | 4.19376 | 0.00035 | 0.03559 |
| <i>PLXNC1</i>   | 0.35719 | 3.4929  | 9.5092  | 9.77877 | 0.00315 | 0.14757 | 26.6221 | 0.00035 | 0.03559 |
| <i>GPR37</i>    | 3.67545 | 10.344  | 11.8859 | 2.81435 | 0.0014  | 0.0858  | 3.23386 | 0.00035 | 0.03559 |
| <i>MITF</i>     | 14.4797 | 34.29   | 38.7307 | 2.36814 | 0.00345 | 0.15595 | 2.67483 | 0.00035 | 0.03559 |
| <i>DIO2</i>     | 0.20061 | 0.90004 | 1.84214 | 4.48648 | 0.0096  | 0.28438 | 9.18265 | 0.00035 | 0.03559 |
| <i>PPARGC1A</i> | 0.76125 | 3.14761 | 5.79519 | 4.1348  | 0.01175 | 0.31266 | 7.61275 | 0.0004  | 0.03952 |
| <i>PLEKHG1</i>  | 0.10348 | 0.35196 | 1.27963 | 3.40129 | 0.04645 | 0.64613 | 12.3661 | 0.0004  | 0.03952 |
| <i>SLC25A23</i> | 7.52948 | 15.6829 | 20.1676 | 2.08287 | 0.0068  | 0.23047 | 2.67849 | 0.0004  | 0.03952 |

|                |         |         |         |         |         |         |         |         |         |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <i>FRZB</i>    | 1.66625 | 4.35599 | 6.37736 | 2.61425 | 0.01175 | 0.31266 | 3.82737 | 0.0004  | 0.03952 |
| <i>LRRN4CL</i> | 6.43874 | 19.2156 | 18.3549 | 2.98437 | 0.0002  | 0.02302 | 2.8507  | 0.0004  | 0.03952 |
| <i>PNRC1</i>   | 9.99771 | 20.4207 | 34.5723 | 2.04254 | 0.043   | 0.62073 | 3.45802 | 0.00045 | 0.04367 |
| <i>DGKI</i>    | 0.96915 | 4.14991 | 4.92525 | 4.28199 | 0.00145 | 0.08799 | 5.08201 | 0.00045 | 0.04367 |
| <i>IGSF10</i>  | 0.16452 | 1.86226 | 2.23606 | 11.3191 | 0.00445 | 0.18047 | 13.5912 | 0.0005  | 0.04658 |
| <i>KCNT2</i>   | 0.403   | 2.50464 | 3.17946 | 6.21499 | 0.00145 | 0.08799 | 7.88948 | 0.0005  | 0.04658 |
| <i>JAG1</i>    | 3.29298 | 8.44214 | 9.26271 | 2.56368 | 0.00215 | 0.11505 | 2.81287 | 0.00055 | 0.04936 |
| <i>GJA3</i>    | 2.39508 | 6.78254 | 7.27054 | 2.83186 | 0.001   | 0.06987 | 3.03561 | 0.00055 | 0.04936 |
| <i>CLIC2</i>   | 0.78525 | 3.97338 | 6.19925 | 5.05999 | 0.00425 | 0.17556 | 7.89458 | 0.00055 | 0.04936 |
| <i>STARD5</i>  | 2.51252 | 7.82264 | 9.14957 | 3.11346 | 0.00265 | 0.13185 | 3.64159 | 0.00055 | 0.04936 |

#### Downregulated Genes

| Gene symbol     | FPKM    |                      |                      | Nintedanib 2 $\mu$ M vs. Control |         |         | Nintedanib 4 $\mu$ M vs. Control |         |         |
|-----------------|---------|----------------------|----------------------|----------------------------------|---------|---------|----------------------------------|---------|---------|
|                 | Control | Nintedanib 2 $\mu$ M | Nintedanib 4 $\mu$ M | Ratio                            | P value | FDR P   | Ratio                            | P value | FDR P   |
| <i>ANLN</i>     | 258.314 | 122.378              | 60.7231              | 0.47376                          | 0.0035  | 0.15633 | 0.23507                          | 0.00005 | 0.00781 |
| <i>DDX11</i>    | 12.2006 | 5.86651              | 3.00897              | 0.48084                          | 0.02495 | 0.46897 | 0.24662                          | 0.00005 | 0.00781 |
| <i>TACC3</i>    | 54.8816 | 20.6665              | 11.9089              | 0.37657                          | 0.0005  | 0.04658 | 0.21699                          | 0.00005 | 0.00781 |
| <i>POLA2</i>    | 33.6864 | 13.5076              | 7.48132              | 0.40098                          | 0.00405 | 0.17046 | 0.22209                          | 0.00005 | 0.00781 |
| <i>DEPDC1</i>   | 62.9083 | 30.1108              | 17.248               | 0.47865                          | 0.00835 | 0.26433 | 0.27418                          | 0.00005 | 0.00781 |
| <i>SPDL1</i>    | 45.9456 | 22.5936              | 11.4282              | 0.49175                          | 0.0181  | 0.3975  | 0.24873                          | 0.00005 | 0.00781 |
| <i>POLQ</i>     | 16.5807 | 6.68109              | 3.25722              | 0.40294                          | 0.00395 | 0.1677  | 0.19645                          | 0.00005 | 0.00781 |
| <i>NDC1</i>     | 36.1103 | 16.4829              | 10.9186              | 0.45646                          | 0.00485 | 0.19068 | 0.30237                          | 0.00005 | 0.00781 |
| <i>POLD1</i>    | 14.0479 | 6.38862              | 3.67671              | 0.45477                          | 0.0062  | 0.21973 | 0.26173                          | 0.00005 | 0.00781 |
| <i>MCM10</i>    | 10.1315 | 3.36627              | 1.49887              | 0.33226                          | 0.00055 | 0.04936 | 0.14794                          | 0.00005 | 0.00781 |
| <i>ASPM</i>     | 81.28   | 36.7945              | 19.7049              | 0.45269                          | 0.0019  | 0.10548 | 0.24243                          | 0.00005 | 0.00781 |
| <i>HMMR</i>     | 62.1595 | 28.8315              | 18.3378              | 0.46383                          | 0.00455 | 0.1833  | 0.29501                          | 0.00005 | 0.00781 |
| <i>MCM2</i>     | 27.5669 | 13.4136              | 6.5804               | 0.48658                          | 0.0115  | 0.30989 | 0.23871                          | 0.00005 | 0.00781 |
| <i>GTSE1</i>    | 34.3892 | 13.3642              | 7.24551              | 0.38862                          | 0.0009  | 0.06867 | 0.21069                          | 0.00005 | 0.00781 |
| <i>WDR62</i>    | 12.8729 | 4.73551              | 2.45733              | 0.36787                          | 0.0013  | 0.08151 | 0.19089                          | 0.00005 | 0.00781 |
| <i>KIF22</i>    | 40.8674 | 17.8514              | 8.91083              | 0.43681                          | 0.0024  | 0.12395 | 0.21804                          | 0.00005 | 0.00781 |
| <i>NDC80</i>    | 37.845  | 16.8787              | 8.99199              | 0.446                            | 0.00375 | 0.1639  | 0.2376                           | 0.00005 | 0.00781 |
| <i>ORC1</i>     | 6.66593 | 2.69545              | 1.3049               | 0.40436                          | 0.00505 | 0.19494 | 0.19576                          | 0.00005 | 0.00781 |
| <i>AURKA</i>    | 110.059 | 43.6564              | 28.2755              | 0.39666                          | 0.0019  | 0.10548 | 0.25691                          | 0.00005 | 0.00781 |
| <i>TPX2</i>     | 128.194 | 51.5882              | 28.0993              | 0.40242                          | 0.00035 | 0.03559 | 0.21919                          | 0.00005 | 0.00781 |
| <i>BIRC5</i>    | 86.4693 | 37.791               | 22.1393              | 0.43705                          | 0.0053  | 0.19955 | 0.25604                          | 0.00005 | 0.00781 |
| <i>ORC6</i>     | 22.8919 | 10.0956              | 5.4266               | 0.44101                          | 0.0106  | 0.29675 | 0.23705                          | 0.00005 | 0.00781 |
| <i>WDR76</i>    | 29.6972 | 14.0233              | 6.72667              | 0.47221                          | 0.00715 | 0.23805 | 0.22651                          | 0.00005 | 0.00781 |
| <i>CLSPN</i>    | 27.1368 | 11.5398              | 5.10651              | 0.42525                          | 0.01925 | 0.40774 | 0.18818                          | 0.00005 | 0.00781 |
| <i>MCM5</i>     | 49.5594 | 23.304               | 11.4927              | 0.47022                          | 0.00195 | 0.1074  | 0.2319                           | 0.00005 | 0.00781 |
| <i>GIN51</i>    | 18.9844 | 8.86539              | 3.89068              | 0.46698                          | 0.01165 | 0.31135 | 0.20494                          | 0.00005 | 0.00781 |
| <i>E2F1</i>     | 8.65258 | 3.52958              | 1.49645              | 0.40792                          | 0.00385 | 0.16605 | 0.17295                          | 0.00005 | 0.00781 |
| <i>FAM83D</i>   | 28.3336 | 13.1388              | 6.84066              | 0.46372                          | 0.004   | 0.16894 | 0.24143                          | 0.00005 | 0.00781 |
| <i>SUV39H1</i>  | 10.6833 | 4.10882              | 2.45545              | 0.3846                           | 0.00215 | 0.11505 | 0.22984                          | 0.00005 | 0.00781 |
| <i>ASF1B</i>    | 14.545  | 6.442                | 2.4839               | 0.4429                           | 0.007   | 0.23497 | 0.17077                          | 0.00005 | 0.00781 |
| <i>NCAPG</i>    | 71.5707 | 27.1537              | 15.2215              | 0.3794                           | 0.00275 | 0.13504 | 0.21268                          | 0.00005 | 0.00781 |
| <i>RAD51AP1</i> | 25.1176 | 10.4357              | 4.89066              | 0.41547                          | 0.0066  | 0.22748 | 0.19471                          | 0.00005 | 0.00781 |
| <i>TIMELESS</i> | 21.364  | 9.47143              | 5.31377              | 0.44334                          | 0.00225 | 0.11897 | 0.24873                          | 0.00005 | 0.00781 |
| <i>CDC43</i>    | 49.7432 | 22.4491              | 9.9378               | 0.4513                           | 0.021   | 0.42777 | 0.19978                          | 0.00005 | 0.00781 |
| <i>TTK</i>      | 46.739  | 18.8182              | 9.96659              | 0.40262                          | 0.00105 | 0.07202 | 0.21324                          | 0.00005 | 0.00781 |
| <i>LMNB1</i>    | 59.8516 | 21.9989              | 11.1988              | 0.36756                          | 0.00005 | 0.00781 | 0.18711                          | 0.00005 | 0.00781 |
| <i>SMC4</i>     | 283.837 | 103.333              | 53.3935              | 0.36406                          | 0.00025 | 0.02717 | 0.18811                          | 0.00005 | 0.00781 |
| <i>TBCE</i>     | 5.87129 | 0.7912               | 0.71889              | 0.13476                          | 0.00005 | 0.00781 | 0.12244                          | 0.00005 | 0.00781 |
| <i>CDC20</i>    | 111.106 | 42.0052              | 18.8377              | 0.37806                          | 0.00025 | 0.02717 | 0.16955                          | 0.00005 | 0.00781 |
| <i>CENPF</i>    | 86.7    | 36.18                | 21.3436              | 0.4173                           | 0.0003  | 0.03149 | 0.24618                          | 0.00005 | 0.00781 |
| <i>KIF14</i>    | 21.9062 | 9.77126              | 5.45653              | 0.44605                          | 0.00285 | 0.13828 | 0.24909                          | 0.00005 | 0.00781 |

|                 |         |         |         |         |         |         |         |         |         |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <i>TMPO</i>     | 133.546 | 57.6289 | 32.7785 | 0.43153 | 0.00115 | 0.0759  | 0.24545 | 0.00005 | 0.00781 |
| <i>NCAPH</i>    | 28.8147 | 10.708  | 5.54802 | 0.37162 | 0.0005  | 0.04658 | 0.19254 | 0.00005 | 0.00781 |
| <i>PLAU</i>     | 196.962 | 69.5404 | 44.5489 | 0.35307 | 0.00005 | 0.00781 | 0.22618 | 0.00005 | 0.00781 |
| <i>ZWINT</i>    | 42.9829 | 17.5512 | 7.83972 | 0.40833 | 0.0011  | 0.07421 | 0.18239 | 0.00005 | 0.00781 |
| <i>CENPK</i>    | 72.0429 | 32.9213 | 14.9021 | 0.45697 | 0.013   | 0.33029 | 0.20685 | 0.00005 | 0.00781 |
| <i>HJURP</i>    | 47.5707 | 22.0644 | 10.6287 | 0.46382 | 0.00325 | 0.14953 | 0.22343 | 0.00005 | 0.00781 |
| <i>MCM8</i>     | 23.8815 | 8.88793 | 4.85349 | 0.37217 | 0.0006  | 0.05203 | 0.20323 | 0.00005 | 0.00781 |
| <i>DLGAP5</i>   | 62.6614 | 28.8159 | 17.0174 | 0.45987 | 0.0038  | 0.1652  | 0.27158 | 0.00005 | 0.00781 |
| <i>KNSTRN</i>   | 48.9221 | 22.2524 | 13.2892 | 0.45485 | 0.00465 | 0.18595 | 0.27164 | 0.00005 | 0.00781 |
| <i>E2F8</i>     | 3.86947 | 1.78133 | 0.72966 | 0.46036 | 0.0296  | 0.50885 | 0.18857 | 0.00005 | 0.00781 |
| <i>DNMT1</i>    | 61.3034 | 29.9001 | 18.4551 | 0.48774 | 0.00235 | 0.12227 | 0.30105 | 0.00005 | 0.00781 |
| <i>TOP2A</i>    | 134.235 | 58.9056 | 31.1796 | 0.43882 | 0.0011  | 0.07421 | 0.23228 | 0.00005 | 0.00781 |
| <i>CCNB1</i>    | 185.893 | 81.109  | 44.9223 | 0.43632 | 0.00085 | 0.06557 | 0.24166 | 0.00005 | 0.00781 |
| <i>CDCA8</i>    | 40.2709 | 14.4036 | 6.67342 | 0.35767 | 0.00005 | 0.00781 | 0.16571 | 0.00005 | 0.00781 |
| <i>ESPL1</i>    | 13.1477 | 4.7175  | 2.4126  | 0.35881 | 0.0074  | 0.2429  | 0.1835  | 0.00005 | 0.00781 |
| <i>CKAP2</i>    | 126.951 | 61.0353 | 42.5575 | 0.48078 | 0.0041  | 0.17183 | 0.33523 | 0.00005 | 0.00781 |
| <i>NUSAP1</i>   | 95.2683 | 41.262  | 25.9165 | 0.43311 | 0.0045  | 0.18204 | 0.27204 | 0.00005 | 0.00781 |
| <i>KIF23</i>    | 112.386 | 52.5193 | 26.6564 | 0.46731 | 0.0126  | 0.32537 | 0.23719 | 0.00005 | 0.00781 |
| <i>KNL1</i>     | 52.3554 | 20.5609 | 11.1204 | 0.39272 | 0.0005  | 0.04658 | 0.2124  | 0.00005 | 0.00781 |
| <i>KIF11</i>    | 64.032  | 28.1985 | 15.3156 | 0.44038 | 0.00185 | 0.10329 | 0.23919 | 0.00005 | 0.00781 |
| <i>KIF20B</i>   | 56.7174 | 21.9501 | 12.6248 | 0.38701 | 0.0005  | 0.04658 | 0.22259 | 0.00005 | 0.00781 |
| <i>SEMA7A</i>   | 65.5567 | 32.2764 | 21.4335 | 0.49234 | 0.0058  | 0.21233 | 0.32695 | 0.00005 | 0.00781 |
| <i>CENPE</i>    | 51.5965 | 20.3309 | 11.6501 | 0.39404 | 0.00055 | 0.04936 | 0.22579 | 0.00005 | 0.00781 |
| <i>PLK4</i>     | 37.8082 | 15.2131 | 7.88604 | 0.40238 | 0.01065 | 0.29764 | 0.20858 | 0.00005 | 0.00781 |
| <i>DTL</i>      | 25.5802 | 10.3995 | 4.94015 | 0.40654 | 0.00255 | 0.12857 | 0.19312 | 0.00005 | 0.00781 |
| <i>CDCA7</i>    | 14.3653 | 6.56852 | 3.19404 | 0.45725 | 0.0129  | 0.32953 | 0.22234 | 0.00005 | 0.00781 |
| <i>FANCD2</i>   | 16.5059 | 6.40219 | 3.80448 | 0.38787 | 0.0006  | 0.05203 | 0.23049 | 0.00005 | 0.00781 |
| <i>CDCA5</i>    | 35.2601 | 13.7044 | 6.94271 | 0.38867 | 0.0008  | 0.06301 | 0.1969  | 0.00005 | 0.00781 |
| <i>NCAPG2</i>   | 62.4157 | 29.8785 | 16.5515 | 0.4787  | 0.00465 | 0.18595 | 0.26518 | 0.00005 | 0.00781 |
| <i>MKI67</i>    | 69.6679 | 28.506  | 14.9794 | 0.40917 | 0.0001  | 0.01351 | 0.21501 | 0.00005 | 0.00781 |
| <i>HMGA2</i>    | 55.9092 | 27.6596 | 18.4522 | 0.49472 | 0.0059  | 0.21406 | 0.33004 | 0.00005 | 0.00781 |
| <i>CENPU</i>    | 45.9244 | 20.9673 | 12.1179 | 0.45656 | 0.01415 | 0.34864 | 0.26387 | 0.00005 | 0.00781 |
| <i>BUB1B</i>    | 49.6586 | 20.7093 | 11.3828 | 0.41703 | 0.0007  | 0.05725 | 0.22922 | 0.00005 | 0.00781 |
| <i>TONSL</i>    | 5.13885 | 2.04179 | 0.98776 | 0.39732 | 0.00215 | 0.11505 | 0.19221 | 0.00005 | 0.00781 |
| <i>RECQL4</i>   | 10.3548 | 3.9389  | 1.93586 | 0.38039 | 0.0038  | 0.1652  | 0.18695 | 0.00005 | 0.00781 |
| <i>RACGAP1</i>  | 107.265 | 53.5641 | 31.7421 | 0.49936 | 0.0051  | 0.19594 | 0.29592 | 0.00005 | 0.00781 |
| <i>CCNF</i>     | 11.2753 | 4.5745  | 2.06284 | 0.40571 | 0.0013  | 0.08151 | 0.18295 | 0.00005 | 0.00781 |
| <i>PAQR4</i>    | 13.7954 | 5.40827 | 3.06804 | 0.39203 | 0.01345 | 0.33769 | 0.2224  | 0.00005 | 0.00781 |
| <i>OLFML2B</i>  | 20.4218 | 8.42408 | 7.20627 | 0.4125  | 0.0005  | 0.04658 | 0.35287 | 0.00005 | 0.00781 |
| <i>PTX3</i>     | 70.5403 | 30.3829 | 14.7174 | 0.43072 | 0.00315 | 0.14757 | 0.20864 | 0.00005 | 0.00781 |
| <i>CDC25A</i>   | 9.00041 | 3.26118 | 1.90784 | 0.36234 | 0.0034  | 0.1544  | 0.21197 | 0.00005 | 0.00781 |
| <i>ABCA1</i>    | 15.3357 | 1.95532 | 0.95489 | 0.1275  | 0.00005 | 0.00781 | 0.06227 | 0.00005 | 0.00781 |
| <i>SKA3</i>     | 46.1549 | 19.4547 | 10.2887 | 0.42151 | 0.00445 | 0.18047 | 0.22292 | 0.00005 | 0.00781 |
| <i>E2F7</i>     | 50.7585 | 17.8079 | 12.0179 | 0.35084 | 0.0001  | 0.01351 | 0.23677 | 0.00005 | 0.00781 |
| <i>PLK1</i>     | 83.9217 | 29.7415 | 16.0804 | 0.3544  | 0.00005 | 0.00781 | 0.19161 | 0.00005 | 0.00781 |
| <i>CDT1</i>     | 15.9909 | 5.08053 | 1.77095 | 0.31771 | 0.0054  | 0.20222 | 0.11075 | 0.00005 | 0.00781 |
| <i>C19orf48</i> | 28.6077 | 11.9447 | 7.24645 | 0.41753 | 0.00425 | 0.17556 | 0.2533  | 0.00005 | 0.00781 |
| <i>DTYMK</i>    | 46.3322 | 22.7052 | 13.3662 | 0.49005 | 0.01205 | 0.31788 | 0.28849 | 0.00005 | 0.00781 |
| <i>RFWD3</i>    | 30.4182 | 12.5496 | 9.22672 | 0.41257 | 0.0005  | 0.04658 | 0.30333 | 0.00005 | 0.00781 |
| <i>CKAP2L</i>   | 35.6476 | 15.1983 | 7.82551 | 0.42635 | 0.00065 | 0.05472 | 0.21952 | 0.00005 | 0.00781 |
| <i>BUB1</i>     | 78.515  | 33.0343 | 17.3455 | 0.42074 | 0.00095 | 0.06987 | 0.22092 | 0.00005 | 0.00781 |
| <i>HAS2</i>     | 375.887 | 157.688 | 73.8355 | 0.41951 | 0.00095 | 0.06987 | 0.19643 | 0.00005 | 0.00781 |
| <i>SHCBP1</i>   | 74.5917 | 31.0923 | 17.0354 | 0.41683 | 0.0017  | 0.09793 | 0.22838 | 0.00005 | 0.00781 |
| <i>NPTX1</i>    | 128.101 | 52.3086 | 44.3123 | 0.40834 | 0.0005  | 0.04658 | 0.34592 | 0.00005 | 0.00781 |
| <i>RRM2</i>     | 228.939 | 75.0456 | 33.0058 | 0.3278  | 0.00005 | 0.00781 | 0.14417 | 0.00005 | 0.00781 |
| <i>RGMB</i>     | 179.477 | 68.1882 | 38.9781 | 0.37993 | 0.0001  | 0.01351 | 0.21718 | 0.00005 | 0.00781 |

|                |         |         |         |         |         |         |         |         |         |
|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <i>EXO1</i>    | 20.3848 | 9.75947 | 4.67617 | 0.47876 | 0.0232  | 0.45116 | 0.22939 | 0.00005 | 0.00781 |
| <i>UBE2C</i>   | 62.3206 | 25.9768 | 16.7051 | 0.41683 | 0.00315 | 0.14757 | 0.26805 | 0.00005 | 0.00781 |
| <i>ATAD5</i>   | 7.39604 | 3.12632 | 1.4731  | 0.4227  | 0.0102  | 0.29345 | 0.19917 | 0.00005 | 0.00781 |
| <i>KCTD12</i>  | 75.4107 | 26.2909 | 24.5638 | 0.34864 | 0.00005 | 0.00781 | 0.32573 | 0.00005 | 0.00781 |
| <i>THBD</i>    | 15.1317 | 2.57596 | 2.13578 | 0.17024 | 0.00005 | 0.00781 | 0.14115 | 0.00005 | 0.00781 |
| <i>AURKB</i>   | 50.162  | 20.2259 | 9.12828 | 0.40321 | 0.00245 | 0.12534 | 0.18198 | 0.00005 | 0.00781 |
| <i>FJX1</i>    | 17.3493 | 7.04686 | 4.06202 | 0.40618 | 0.00115 | 0.0759  | 0.23413 | 0.00005 | 0.00781 |
| <i>KPNA2</i>   | 243.78  | 118.083 | 77.3577 | 0.48438 | 0.0044  | 0.17918 | 0.31733 | 0.00005 | 0.00781 |
| <i>IQGAP3</i>  | 32.9804 | 13.8802 | 6.83349 | 0.42086 | 0.0018  | 0.10189 | 0.2072  | 0.00005 | 0.00781 |
| <i>CDCA2</i>   | 21.9866 | 9.99821 | 4.91137 | 0.45474 | 0.0073  | 0.24075 | 0.22338 | 0.00005 | 0.00781 |
| <i>KIF18B</i>  | 18.6226 | 6.78565 | 2.92914 | 0.36438 | 0.0016  | 0.09372 | 0.15729 | 0.00005 | 0.00781 |
| <i>SAPCD2</i>  | 5.10629 | 1.76787 | 1.03876 | 0.34621 | 0.0008  | 0.06301 | 0.20343 | 0.00005 | 0.00781 |
| <i>H2AFX</i>   | 108.692 | 43.9223 | 20.429  | 0.4041  | 0.00055 | 0.04936 | 0.18795 | 0.00005 | 0.00781 |
| <i>XRCC2</i>   | 10.1468 | 3.54788 | 1.92657 | 0.34966 | 0.00155 | 0.09222 | 0.18987 | 0.00005 | 0.00781 |
| <i>MMP1</i>    | 1592.81 | 509.757 | 406.024 | 0.32004 | 0.00005 | 0.00781 | 0.25491 | 0.00005 | 0.00781 |
| <i>PLXNA4</i>  | 7.11983 | 1.32168 | 1.02647 | 0.18563 | 0.00005 | 0.00781 | 0.14417 | 0.00005 | 0.00781 |
| <i>TMEM158</i> | 177.295 | 71.1591 | 62.8778 | 0.40136 | 0.00045 | 0.04367 | 0.35465 | 0.00005 | 0.00781 |
| <i>BOP1</i>    | 16.1359 | 6.77117 | 4.66545 | 0.41963 | 0.0023  | 0.12083 | 0.28913 | 0.00005 | 0.00781 |
| <i>UHRF1</i>   | 32.9605 | 12.1159 | 5.59898 | 0.36759 | 0.0001  | 0.01351 | 0.16987 | 0.00005 | 0.00781 |
| <i>CDC7</i>    | 18.0307 | 8.79066 | 4.91336 | 0.48754 | 0.0228  | 0.44765 | 0.2725  | 0.0001  | 0.01351 |
| <i>KPNB1</i>   | 300.639 | 149.579 | 114.378 | 0.49754 | 0.00595 | 0.21508 | 0.38045 | 0.0001  | 0.01351 |
| <i>BRCA2</i>   | 16.0601 | 8.01225 | 4.96521 | 0.49889 | 0.00975 | 0.28588 | 0.30916 | 0.0001  | 0.01351 |
| <i>CCNA2</i>   | 74.8592 | 34.8919 | 22.3802 | 0.4661  | 0.01225 | 0.32073 | 0.29896 | 0.0001  | 0.01351 |
| <i>SGO2</i>    | 42.3985 | 16.6445 | 9.82742 | 0.39257 | 0.0045  | 0.18204 | 0.23179 | 0.0001  | 0.01351 |
| <i>FAM111B</i> | 24.5408 | 10.8848 | 4.97064 | 0.44354 | 0.01185 | 0.31395 | 0.20255 | 0.0001  | 0.01351 |
| <i>BLM</i>     | 8.80792 | 3.50544 | 2.07012 | 0.39799 | 0.00425 | 0.17556 | 0.23503 | 0.0001  | 0.01351 |
| <i>NCAPD2</i>  | 45.2882 | 21.2377 | 15.5194 | 0.46895 | 0.0097  | 0.28579 | 0.34268 | 0.00015 | 0.01843 |
| <i>TRPA1</i>   | 108.242 | 40.5574 | 31.5867 | 0.37469 | 0.00075 | 0.06003 | 0.29182 | 0.00015 | 0.01843 |
| <i>MCM4</i>    | 97.245  | 38.9208 | 24.3436 | 0.40023 | 0.0016  | 0.09372 | 0.25033 | 0.00015 | 0.01843 |
| <i>NEK2</i>    | 56.6653 | 22.1206 | 13.9535 | 0.39037 | 0.0015  | 0.0899  | 0.24624 | 0.00015 | 0.01843 |
| <i>ODF2</i>    | 23.7148 | 10.224  | 7.93134 | 0.43112 | 0.00155 | 0.09222 | 0.33445 | 0.00015 | 0.01843 |
| <i>FANCA</i>   | 21.7978 | 9.09249 | 3.97189 | 0.41713 | 0.01825 | 0.39918 | 0.18222 | 0.00015 | 0.01843 |
| <i>HNRNPAB</i> | 122.388 | 58.3441 | 42.5791 | 0.47671 | 0.00735 | 0.24191 | 0.3479  | 0.00015 | 0.01843 |
| <i>PRC1</i>    | 136.605 | 60.3391 | 36.4032 | 0.4417  | 0.0086  | 0.26876 | 0.26649 | 0.00015 | 0.01843 |
| <i>POLE2</i>   | 14.5055 | 7.14704 | 3.05471 | 0.49271 | 0.0352  | 0.55606 | 0.21059 | 0.0002  | 0.02302 |
| <i>NOP56</i>   | 92.2134 | 42.7893 | 29.5816 | 0.46402 | 0.00865 | 0.26963 | 0.3208  | 0.0002  | 0.02302 |
| <i>PARP2</i>   | 22.0594 | 10.8126 | 7.09285 | 0.49016 | 0.0227  | 0.44659 | 0.32153 | 0.0002  | 0.02302 |
| <i>ESM1</i>    | 29.9752 | 10.7619 | 8.11675 | 0.35903 | 0.0019  | 0.10548 | 0.27078 | 0.0002  | 0.02302 |
| <i>LIN9</i>    | 11.2757 | 5.25107 | 2.62941 | 0.4657  | 0.0256  | 0.47552 | 0.23319 | 0.0002  | 0.02302 |
| <i>RFC3</i>    | 23.1975 | 11.394  | 5.96854 | 0.49117 | 0.0263  | 0.47942 | 0.25729 | 0.00025 | 0.02717 |
| <i>POLE3</i>   | 48.9117 | 23.2908 | 15.747  | 0.47618 | 0.00805 | 0.25699 | 0.32195 | 0.00025 | 0.02717 |
| <i>MAD2L1</i>  | 68.7436 | 27.6855 | 16.5247 | 0.40274 | 0.0055  | 0.20471 | 0.24038 | 0.0003  | 0.03149 |
| <i>FANCB</i>   | 11.5295 | 3.66456 | 1.4849  | 0.31784 | 0.01185 | 0.31395 | 0.12879 | 0.0003  | 0.03149 |
| <i>EPHB2</i>   | 14.4386 | 6.75201 | 5.25942 | 0.46764 | 0.0077  | 0.25006 | 0.36426 | 0.00035 | 0.03559 |
| <i>MIS18A</i>  | 17.9841 | 8.0902  | 4.38868 | 0.44985 | 0.02095 | 0.42728 | 0.24403 | 0.00035 | 0.03559 |
| <i>TRIP13</i>  | 34.4687 | 14.1606 | 7.86474 | 0.41082 | 0.01835 | 0.40047 | 0.22817 | 0.0004  | 0.03952 |
| <i>KIF4A</i>   | 27.111  | 11.2    | 6.65858 | 0.41312 | 0.0069  | 0.2329  | 0.2456  | 0.00045 | 0.04367 |
| <i>PHF19</i>   | 41.1678 | 17.829  | 11.8048 | 0.43308 | 0.01775 | 0.39353 | 0.28675 | 0.00045 | 0.04367 |
| <i>TYMS</i>    | 100.384 | 45.8894 | 25.4505 | 0.45714 | 0.0245  | 0.46426 | 0.25353 | 0.00045 | 0.04367 |
| <i>DEPDC1B</i> | 10.99   | 3.33998 | 2.51667 | 0.30391 | 0.00175 | 0.1001  | 0.229   | 0.0005  | 0.04658 |
| <i>HMGAI</i>   | 773.782 | 362.742 | 304.489 | 0.46879 | 0.0048  | 0.18978 | 0.39351 | 0.0005  | 0.04658 |
| <i>FANCM</i>   | 7.79188 | 3.3319  | 1.98929 | 0.42761 | 0.01585 | 0.36756 | 0.2553  | 0.0005  | 0.04658 |
| <i>SPRY2</i>   | 38.6608 | 18.4946 | 14.9988 | 0.47838 | 0.0061  | 0.21824 | 0.38796 | 0.00055 | 0.04936 |
| <i>NUF2</i>    | 51.6295 | 21.4956 | 10.9253 | 0.41634 | 0.01295 | 0.32953 | 0.21161 | 0.00055 | 0.04936 |

**Table S3.** Possible binding sites of the 5 potential miRNA-mRNA interactions.

|                                                                   | Predicted Consequential Pairing of<br>Target Region (Top) and miRNA (Bottom)       | Site Type | Context+<br>+ Score | Context+<br>+ Score<br>Percentil<br>e | Weighted<br>Context+<br>+ Score |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------|---------------------|---------------------------------------|---------------------------------|
| Position 263-269 of<br><b>DDX11</b> 3' UTR<br>hsa-miR-486-3p      | 5' ...GGAGAAGCAGGCAGCCUGCCCCU...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 7mer-m8   | -0.09               | 43                                    | -0.09                           |
| Position 1296-1302 of<br><b>DDX11</b> 3' UTR<br>hsa-miR-486-3p    | 5' ...CCUCCAGACAACAUCCUGCCCCU...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 7mer-m8   | -0.21               | 75                                    | -0.21                           |
| Position 2823-2829 of<br><b>DDX11</b> 3' UTR<br>hsa-miR-486-3p    | 5' ...UCCCACCUGCAACAGCUGCCCCU...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 7mer-m8   | -0.21               | 76                                    | -0.21                           |
| Position 682-689 of<br><b>E2F1</b> 3' UTR<br>hsa-miR-486-3p       | 5' ...CCCUGAGCUGUUCUU--<br>CUGCCCCA...<br>            <br>3' UAGGACAUGACUCGACGGGGC | 8mer      | -0.41               | 96                                    | -0.38                           |
| Position 819-825 of<br><b>E2F1</b> 3' UTR<br>hsa-miR-486-3p       | 5' ...AGUUCAGGGCCCCAGCUGCCCCC...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 7mer-m8   | -0.02               | 15                                    | -0.02                           |
| Position 961-968 of<br><b>E2F1</b> 3' UTR<br>hsa-miR-486-3p       | 5' ...UGCCUCCCCACUGCUCUGCCCCA...<br>            <br>3' UAGGACAUGACUCGACGGGGC       | 8mer      | -0.42               | 96                                    | -0.38                           |
| Position 1868-1875 of<br><b>PLXNA4</b> 3' UTR<br>hsa-miR-486-3p   | 5' ...UGUGUGUGUGUGUGUCUGCCCCA...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 8mer      | -0.06               | 37                                    | -0.06                           |
| Position 4142-4149 of<br><b>PLXNA4</b> 3' UTR<br>hsa-miR-486-3p   | 5' ...CCCAGCCCUCUGUGACUGCCCCA...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 8mer      | -0.03               | 23                                    | -0.02                           |
| Position 4731-4737 of<br><b>PLXNA4</b> 3' UTR<br>hsa-miR-486-3p   | 5' ...CCUGGCUUCUCCCCAUGCCCCAA...<br>     <br>3' UAGGACAUGACUCGACGGGGC              | 7mer-A1   | -0.06               | 36                                    | -0.03                           |
| Position 5762-5768 of<br><b>PLXNA4</b> 3' UTR<br>hsa-miR-486-3p   | 5' ...GCUUGGCUCUCUGGGCUGCCCCU...<br>       <br>3' UAGGACAUGACUCGACGGGGC            | 7mer-m8   | -0.02               | 15                                    | -0.01                           |
| Position 65-71 of<br><b>SLC25A23</b> 3' UTR<br>hsa-miR-92a-1-5p   | 5' ...CUGGAGACUGAUGAUCCAACCAC..<br>     <br>3' UCGUAACGUUGGCUAGGGUUGGA             | 7mer-A1   | -0.15               | 65                                    | -0.15                           |
| Position 136-143 of<br><b>SLC25A23</b> 3' UTR<br>hsa-miR-92a-1-5p | 5' ...CCUAGACUCCUAUGCCCCAACCA...<br>       <br>3' UCGUAACGUUGGCUAGGGUUGGA          | 8mer      | -0.33               | 93                                    | -0.33                           |
| Position 194-201 of<br><b>SLC25A23</b> 3' UTR<br>hsa-miR-92a-1-5p | 5' ...CCUAGACUCCUAUGCCCCAACCA...<br>       <br>3' UCGUAACGUUGGCUAGGGUUGGA          | 8mer      | -0.29               | 90                                    | -0.29                           |

|                                                                   |                                                                                   |         |       |    |       |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|-------|----|-------|
| Position 480-487 of<br><b>SLC25A23</b> 3' UTR<br>hsa-miR-92a-1-5p | 5' ...AAUGGAUCCCAACAC--<br>CCCAACCA...<br>      <br>3'<br>UCGUAACGUUGGCUAGGGUUGGA | 8mer    | -0.35 | 94 | -0.35 |
| Position 580-586 of<br><b>SLC25A23</b> 3' UTR<br>hsa-miR-92a-1-5p | 5' ...GCUGGAUCCUAGAUCCTCAACCC...<br>     <br>3'<br>UCGUAACGUUGGCUAGGGUUGGA        | 7mer-m8 | -0.16 | 66 | -0.16 |
| Position 232-238 of<br><b>NPTX1</b> 3' UTR<br>hsa-miR-486-3p      | 5' ...GGACUCUCUCAGGCAUGCCCCAU...<br>     <br>3' UAGGACAUGACUCGACGGGGC             | 7mer-A1 | -0.14 | 57 | -0.14 |
| Position 803-810 of<br><b>NPTX1</b> 3' UTR<br>hsa-miR-486-3p      | 5' ...CCAGCUCAGCUAGCUCUGCCCCA...<br>     <br>3' UAGGACAUGACUCGACGGGGC             | 8mer    | -0.21 | 75 | -0.20 |
| Position 864-870 of<br><b>NPTX1</b> 3' UTR<br>hsa-miR-486-3p      | 5' ...CUGCAAGGCUGGGGUCUGCCCCU...<br>     <br>3' UAGGACAUGACUCGACGGGGC             | 7mer-m8 | -0.02 | 15 | -0.02 |
| Position 2012-2018 of<br><b>NPTX1</b> 3' UTR<br>hsa-miR-486-3p    | 5' ...CCGCACCUGCAUGGACUGCCCCG...<br>     <br>3' UAGGACAUGACUCGACGGGGC             | 7mer-m8 | -0.05 | 33 | -0.05 |
| Position 2393-2399 of<br><b>NPTX1</b> 3' UTR<br>hsa-miR-486-3p    | 5' ...ACCGCAGACCACCUUCUGCCCCC...<br>     <br>3' UAGGACAUGACUCGACGGGGC             | 7mer-m8 | -0.05 | 32 | -0.05 |
| Position 2583-2589 of<br><b>NPTX1</b> 3' UTR<br>hsa-miR-486-3p    | 5' ...ACCUUUAGCUCCCUCCUGCCCCU...<br>     <br>3' UAGGACAUGACUCGACGGGGC             | 7mer-m8 | -0.15 | 60 | -0.14 |