**Table S2. The genes whose mutations between Ferroptosis\_H and Ferroptosis\_L was significantly different.**

|  |  |  |  |
| --- | --- | --- | --- |
| GENE | Mutated in Ferroptosis\_L | Mutated in Ferroptosis\_H | FDR |
| VHL | 28 of 6432 | 148 of 2753 | 4.19E-51 |
| BRAF | 630 of 6432 | 74 of 2753 | 2.80E-37 |
| KEAP1 | 73 of 6432 | 147 of 2753 | 4.10E-30 |
| TP53 | 2079 of 6432 | 1198 of 2753 | 2.68E-24 |
| IDH1 | 431 of 6432 | 55 of 2753 | 1.57E-23 |
| PBRM1 | 158 of 6432 | 184 of 2753 | 8.59E-21 |
| APC | 586 of 6432 | 113 of 2753 | 3.03E-18 |
| PTEN | 405 of 6432 | 320 of 2753 | 4.92E-17 |
| NRAS | 234 of 6432 | 25 of 2753 | 2.02E-15 |
| RYR2 | 594 of 6432 | 408 of 2753 | 1.73E-14 |
| CSMD3 | 642 of 6432 | 432 of 2753 | 2.63E-14 |
| STK11 | 43 of 6432 | 75 of 2753 | 4.38E-14 |
| CTNNB1 | 201 of 6432 | 169 of 2753 | 8.58E-11 |
| NFE2L2 | 115 of 6432 | 114 of 2753 | 2.78E-10 |
| ADAMTS12 | 219 of 6432 | 176 of 2753 | 4.70E-10 |
| USH2A | 550 of 6432 | 347 of 2753 | 4.94E-09 |
| HRAS | 112 of 6432 | 11 of 2753 | 2.43E-08 |
| ZFHX4 | 502 of 6432 | 314 of 2753 | 5.98E-08 |
| ALB | 86 of 6432 | 85 of 2753 | 6.90E-08 |
| SPATA31A6 | 91 of 6432 | 87 of 2753 | 1.28E-07 |
| NAV3 | 310 of 6432 | 210 of 2753 | 2.05E-07 |
| ZNF536 | 269 of 6432 | 185 of 2753 | 5.44E-07 |
| MRC1 | 153 of 6432 | 120 of 2753 | 8.07E-07 |
| LRRC7 | 218 of 6432 | 156 of 2753 | 8.64E-07 |
| COL11A1 | 325 of 6432 | 213 of 2753 | 1.13E-06 |
| PCDH10 | 179 of 6432 | 134 of 2753 | 1.14E-06 |
| SPTA1 | 444 of 6432 | 273 of 2753 | 1.51E-06 |
| LPPR4 | 84 of 6432 | 77 of 2753 | 2.06E-06 |
| SORCS1 | 179 of 6432 | 132 of 2753 | 2.08E-06 |
| SLC39A12 | 96 of 6432 | 84 of 2753 | 2.20E-06 |
| FSCB | 108 of 6432 | 91 of 2753 | 2.22E-06 |
| KRAS | 397 of 6432 | 246 of 2753 | 3.27E-06 |
| TTN | 1686 of 6432 | 852 of 2753 | 4.00E-06 |
| PXDNL | 224 of 6432 | 155 of 2753 | 4.19E-06 |
| PPP2R1A | 94 of 6432 | 80 of 2753 | 7.81E-06 |
| PF4V1 | 2 of 6432 | 13 of 2753 | 8.47E-06 |
| LONRF3 | 41 of 6432 | 46 of 2753 | 8.95E-06 |
| EGFR | 156 of 6432 | 115 of 2753 | 1.08E-05 |
| PKHD1 | 324 of 6432 | 204 of 2753 | 1.26E-05 |
| TMTC1 | 73 of 6432 | 66 of 2753 | 1.41E-05 |
| PREX1 | 117 of 6432 | 92 of 2753 | 1.63E-05 |
| XIRP2 | 449 of 6432 | 265 of 2753 | 2.04E-05 |
| CPS1 | 163 of 6432 | 117 of 2753 | 2.06E-05 |
| ZP4 | 89 of 6432 | 75 of 2753 | 2.08E-05 |
| RYR3 | 391 of 6432 | 236 of 2753 | 2.11E-05 |
| SEMA6D | 108 of 6432 | 86 of 2753 | 2.31E-05 |
| BAP1 | 113 of 6432 | 89 of 2753 | 2.37E-05 |
| OR51V1 | 47 of 6432 | 48 of 2753 | 2.50E-05 |
| OR5W2 | 61 of 6432 | 57 of 2753 | 2.73E-05 |
| LRP1B | 648 of 6432 | 361 of 2753 | 2.75E-05 |
| PIK3R1 | 188 of 6432 | 130 of 2753 | 2.76E-05 |
| ZEB2 | 141 of 6432 | 104 of 2753 | 2.77E-05 |
| TRPA1 | 151 of 6432 | 109 of 2753 | 3.47E-05 |
| PLXNA4 | 235 of 6432 | 154 of 2753 | 3.50E-05 |
| FBN2 | 260 of 6432 | 167 of 2753 | 3.75E-05 |
| FMR1 | 57 of 6432 | 54 of 2753 | 3.79E-05 |
| LRFN5 | 153 of 6432 | 110 of 2753 | 3.80E-05 |
| RAB13 | 4 of 6432 | 14 of 2753 | 3.84E-05 |
| BRINP3 | 210 of 6432 | 141 of 2753 | 3.86E-05 |
| SPTBN1 | 127 of 6432 | 95 of 2753 | 4.17E-05 |
| TSHZ3 | 173 of 6432 | 121 of 2753 | 4.19E-05 |
| GLRA2 | 48 of 6432 | 48 of 2753 | 4.23E-05 |
| DACT1 | 74 of 6432 | 64 of 2753 | 4.79E-05 |
| ANK2 | 320 of 6432 | 197 of 2753 | 4.88E-05 |
| AGMO | 63 of 6432 | 57 of 2753 | 5.07E-05 |
| DNAH9 | 388 of 6432 | 230 of 2753 | 6.20E-05 |
| SLITRK2 | 130 of 6432 | 96 of 2753 | 6.48E-05 |
| DMD | 359 of 6432 | 215 of 2753 | 7.51E-05 |
| MKI67 | 216 of 6432 | 142 of 2753 | 7.58E-05 |
| GJA8 | 72 of 6432 | 62 of 2753 | 8.28E-05 |
| TNR | 236 of 6432 | 152 of 2753 | 8.86E-05 |
| BCORL1 | 143 of 6432 | 102 of 2753 | 9.34E-05 |
| HLA-B | 91 of 6432 | 14 of 2753 | 9.41E-05 |
| DOCK10 | 149 of 6432 | 105 of 2753 | 9.48E-05 |
| OR5L2 | 78 of 6432 | 65 of 2753 | 9.62E-05 |
| CDH10 | 255 of 6432 | 161 of 2753 | 9.77E-05 |
| MS4A6A | 19 of 6432 | 26 of 2753 | 0.000115 |
| APOB | 422 of 6432 | 244 of 2753 | 0.00013 |
| MAGEB4 | 47 of 6432 | 45 of 2753 | 0.000134 |
| COL22A1 | 261 of 6432 | 163 of 2753 | 0.00014 |
| NCAM2 | 140 of 6432 | 99 of 2753 | 0.000141 |
| PRUNE2 | 223 of 6432 | 143 of 2753 | 0.000149 |
| ORC4 | 21 of 6432 | 27 of 2753 | 0.000187 |
| OR4C6 | 87 of 6432 | 69 of 2753 | 0.00019 |
| OR2L8 | 66 of 6432 | 56 of 2753 | 0.000204 |
| ASTN1 | 205 of 6432 | 133 of 2753 | 0.000213 |
| BCHE | 99 of 6432 | 75 of 2753 | 0.000219 |
| TRIM51 | 115 of 6432 | 84 of 2753 | 0.000221 |
| DZIP3 | 95 of 6432 | 73 of 2753 | 0.000232 |
| LAMA2 | 277 of 6432 | 169 of 2753 | 0.000249 |
| RBM41 | 22 of 6432 | 27 of 2753 | 0.00025 |
| FAM135B | 315 of 6432 | 188 of 2753 | 0.000253 |
| ATRNL1 | 146 of 6432 | 100 of 2753 | 0.000307 |
| GNAQ | 75 of 6432 | 11 of 2753 | 0.000321 |
| OVCH1 | 106 of 6432 | 78 of 2753 | 0.000324 |
| PDZRN3 | 101 of 6432 | 75 of 2753 | 0.000333 |
| MMP16 | 118 of 6432 | 85 of 2753 | 0.000339 |
| CDH7 | 143 of 6432 | 98 of 2753 | 0.000351 |
| NLRP14 | 137 of 6432 | 95 of 2753 | 0.000353 |
| REG1B | 45 of 6432 | 42 of 2753 | 0.000356 |
| F5 | 178 of 6432 | 117 of 2753 | 0.000363 |
| CCT7 | 24 of 6432 | 28 of 2753 | 0.000365 |
| ADGRG4 | 286 of 6432 | 172 of 2753 | 0.000366 |
| SETD2 | 217 of 6432 | 137 of 2753 | 0.000371 |
| TMPRSS15 | 132 of 6432 | 92 of 2753 | 0.000372 |
| FBXL4 | 42 of 6432 | 40 of 2753 | 0.000375 |
| RHOBTB2 | 39 of 6432 | 38 of 2753 | 0.000391 |
| RP1L1 | 255 of 6432 | 156 of 2753 | 0.000411 |
| ARID1A | 459 of 6432 | 257 of 2753 | 0.000415 |
| UNC5D | 135 of 6432 | 93 of 2753 | 0.000427 |
| GALNT13 | 113 of 6432 | 81 of 2753 | 0.000462 |
| CYP4X1 | 65 of 6432 | 9 of 2753 | 0.000485 |
| GLT6D1 | 53 of 6432 | 6 of 2753 | 0.000494 |
| RAC1 | 56 of 6432 | 7 of 2753 | 0.000502 |
| TRO | 99 of 6432 | 73 of 2753 | 0.00053 |
| NLGN1 | 105 of 6432 | 76 of 2753 | 0.000547 |
| SEMA3C | 65 of 6432 | 53 of 2753 | 0.00055 |
| BIRC6 | 244 of 6432 | 149 of 2753 | 0.000584 |
| ZNF804B | 210 of 6432 | 132 of 2753 | 0.000585 |
| SOX9 | 106 of 6432 | 21 of 2753 | 0.000594 |
| CYP26B1 | 46 of 6432 | 42 of 2753 | 0.000597 |
| HEPH | 151 of 6432 | 101 of 2753 | 0.000604 |
| HTR1E | 63 of 6432 | 52 of 2753 | 0.000646 |
| FAM218A | 4 of 6432 | 11 of 2753 | 0.00066 |
| ASPM | 251 of 6432 | 152 of 2753 | 0.000679 |
| UCK2 | 22 of 6432 | 26 of 2753 | 0.000685 |
| INSRR | 135 of 6432 | 92 of 2753 | 0.000701 |
| EIF2AK3 | 78 of 6432 | 60 of 2753 | 0.000711 |
| OR5F1 | 69 of 6432 | 55 of 2753 | 0.000724 |
| GAD2 | 74 of 6432 | 58 of 2753 | 0.000739 |
| LRRIQ1 | 187 of 6432 | 119 of 2753 | 0.000745 |
| E2F1 | 28 of 6432 | 30 of 2753 | 0.000754 |
| ISOC1 | 11 of 6432 | 17 of 2753 | 0.000756 |
| KRTAP19-4 | 8 of 6432 | 15 of 2753 | 0.00077 |
| SMC3 | 75 of 6432 | 58 of 2753 | 0.000802 |
| CHM | 53 of 6432 | 45 of 2753 | 0.00082 |
| ATRX | 413 of 6432 | 128 of 2753 | 0.000834 |
| NSDHL | 26 of 6432 | 28 of 2753 | 0.000856 |
| XKR7 | 46 of 6432 | 41 of 2753 | 0.000868 |
| FCRL2 | 58 of 6432 | 48 of 2753 | 0.000868 |
| OR5I1 | 67 of 6432 | 53 of 2753 | 0.000898 |
| AMY2B | 67 of 6432 | 53 of 2753 | 0.000898 |
| OR2T27 | 55 of 6432 | 46 of 2753 | 0.00096 |
| OR8U1 | 55 of 6432 | 46 of 2753 | 0.00096 |
| PKP3 | 61 of 6432 | 9 of 2753 | 0.000987 |
| NRCAM | 106 of 6432 | 75 of 2753 | 0.000994 |