|  |  |  |  | 0.86 |  | 0.87 | 0.81 |  | 0.72 | 0.82 | 20.5 | 0.27 |  | 0.45 | 0.52 | 0.6 | 0.46 | 0.230 |  | 0.330 .27 |  | 0.470 .17 | 0.170 | 19.0 | 0.050 .0 | 18 -0. | -0.09-0.09 | - 0.12 | 20.18 | 0.110 | 0.11 | 0.3 | 0.06 -0, | -0.11-0, | -0.17-0 | 0.23-0.0. | 0.05-0.01 | -0.43 |  | GGI-GS |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 0.81 |  | 0.87 | 0.82 | 0. 86 | 0.66 | 0.7 | 90.44 | 0.28 | 0.850 | 0.43 | 0.51 | 0.53 | 0.370. | 0.170 | 0.23 | 0.320 .2 | 0.220 .4 | 0.470 .17 | 0.170 | 0.04 | 0.040 .04 | -0.17-0.0. | -07-0.06 | 06-0.08 | 0.14 | 0.080 | 0.080 | 0 | 0.04-0. | -0.15-0, | 0.19-0. |  | $0.06-0.02$ | -0.43 |  | JClinlnvest2007RBloss-GS |
|  |  |  |  | 0.86 |  | 0.88 | 0.83 | 0.86 | 0.71 | 10.77 | 0.77 | 0.3 | 0.89 | 0.48 | 0.53 | 0.56 | 0.380 | 0.210 .2 | 0.25 | 0.310 | 0.20. | 0.450 | 0.160 .21 | 0.210 .04 | 0.040 .06 -0, | -0.14-0.0 | -0.02-0.02-0.00 | 02-0.03 | 0.11 | 0.030 | 0.040 | 0.23 | 0.03 -0 | -0.2 -0 | -0.24 |  | 7-0.04 | 0.46 |  | CIN70-GS |
|  |  | 0.97 |  | 0.85 |  | 0.83 | 0.75 | 0.82 | 0.62 | 20.78 | 80.44 | 0.18 | 0.86 | 0.410 | 0.51 | 0.62 | 0.450 |  | 0.28 | 0.320 | 0.260 .4 |  | 0.150 | 0.220 .0 | $0.060 .01-0$ | -0.17-0.0 | -0.08-0.09 | 99-0.130 | 0.19 | 0.130 | 0.13 | 0.29 | 0.05 -0, |  | 0.13-0. | 2-0.000 | 0.070 .03 | -0.36 |  | DiLeoRBloss-GS |
|  | 0.87 |  | 0.85 |  | 0 | 0.78 | 0.76 | 0.86 | 0.6 | 0.7 | 0.43 | 0.22 | 0.720 | 0.37 | 0.43 | 0.5 | 0.310 |  |  | 0.260 .2 | 0.210. | 0.40 | 0.10 | 0.240 .0 | $0.030 .07-0$ | -0.19-0. | -0.14-0.13-18 | 13-0.16 | 6.10 | 0.01 | 0.060 | 0.22 | 0.01 -0, |  |  | 20.1 | 0.13-0.06 | 0.35 |  | E2FmotifCellCycleAssociated-GS |
|  | 0.96 |  | 0.92 | 0.84 |  | 0.9 | 0.88 | 0.9 | 0.75 | 5 0.82 | 20.54 | 0.39 | 0.810 | 0.36 | 0.49 | 0.44 | 0.290 |  | 0.15 | 0.340 .24 |  |  | 0.140 | $0.09-0.0$ | -0.060.09-0 |  | -0.09-0.05-0.070 | 05-0.07 | 0.18 | 0.1 | 0.070 | 0.27 | 0.04-0 | -0.21-0. | 0.21-0. | 0.190 .0 | 0.03-0.1 | -0.46 |  | E2F4activation-GS |
| 0.87 | 0.87 | 0.88 | 0.830 | 0.78 | 0.9 |  | 0.83 | 0.8 | 0.74 | 74 0.76 | 60.56 | 0.43 | 0.830 | 0.440 | 0.38 | 0.41 | 0.280 | 0.180 | 0.2 | 0.40 .17 | 0.170 .3 | 0.360. | 0.130 | $0.08-0.0$ | -0.02 0.13 -0 | -0.110.00 | 0.030 .05 | 50.05 | 0.180 | 0.080 | 0.110 | 0.34 | 0.03 -0 | -0.27-0 | 0.36-0.0 | 0.33-0.07 | 0.07-0.06 | -0.39 |  | TEN-GS |
| 0.81 | 0.82 | 0.83 | 0.75 | 0.76 | 0.880 | 0.83 |  | 0.82 | 0.73 | 0.6 | 80.51 | 0.48 | 0.72 | 0.4 | 0.47 | 0.3 | 0 |  | 0.08 | 0.320 .14 | 0.140 .3 | 0.350 |  | $0.06-0.0$ | -0.06 $0.2-0$ |  | -0.01 0.07 | 70.06 | 0.08 | 0 | -0.010 | 0.21 | $0.05-0$ | -0.38 | 0.34-0. | 0.260 .0 | 0.05-0.12 | -0.45 |  | E2Factivation-GS |
| 0.85 | 0.86 | 0.86 | 0.8 | 0.86 | 0.90 | 0.82 | 0.82 |  | 0.71 | 0.7 | 0.53 | 0.43 | 0.640 | 0.210 | 0.4 | 0.34 | 0.14-0. | -0. |  | 0.310 .1 |  | 0.370. |  | 0.04-0.0 | 0.080.08-0 | -0.18-0 | -0.2-0.14-17 | 14-0.17 | 0.15 | 0.050 | 0.040 | 0.23 | 0.02 -0. |  | 0.04 0.0 | 0.030 .1 | 0. 19 -0.16 | -0.36 |  | PAGs |
| 0.72 | 0.66 | 0.71 | 0.62 | 0.6 | 0.75 | 0.7 | 0.73 | 0.71 |  | 0.72 | 2 0.71 | 0.52 | 0.640 | 0.37 | 0.28 | 0.44 | 0.360. | 0.170 .0 | 0.070 | 0.360 .2 | 0.290 | 0.30 | $0.1-0$. | 0.03-0.1 | 0.190 .1 | -0.1-0. | -0.19-0.12-1. | 12-0.09 | 0.170 | 0.11 -0. |  | 0.25 | 0.01 -0 | -0.21-0, | 0.16-0. | 0.110 .1 | 0.14-0.27 | -0.43 |  | PİK-GS |
| 0.82 | 0.78 | 0.77 | 0.78 | 0.7 | 0.820 | 0.7 | 0.68 | 0.77 | 0.72 |  | 0.52 | 0.35 | 0.66 | 0.20 | 0.27 | 0.47 | 0.4 | 0.140 .1 |  | 0.370 .3 |  | 0.50 | 0.240 .0 | $0.03-0.11$ | -0.14-0.1-0 |  | -0.42-0.38 | 38-0.39 | 0.37 | 0.28 | 0.23 | 0.4 |  | 0.090 | 0.070 .0 | 0.04 | 0.14-0.08 | -0.38 |  | Gene70-Gs |
| 0 | 0.44 | 0.47 | 0.44 | 0.43 | 0.54 0 | 0.56 | 0.51 | 0.53 | 30.71 | 10.52 |  | 0.31 | 0.440 | 0.060 | 0.23 | 0.33 | 0.320. | 0.110 .0 | 0.030 | 0.440 .4 | 0.410 .1 | 0.170 .0 | $0.04-0$. | 0.09-0.0 | 0.050 .2 | $0-0$. | -0.12-0.09 | -09 -0.09 | 0.26 | 0.220 | 0.04 | 0.34 | -0.1-0 | -0.02-0 |  | 0.040 .1 | 0.16-0.19-0 | -0.06 |  | AKT/mTOR-GS |
| 0.27 | 0.28 | 0.3 | 0.18 | 0.22 | 0.39 | 0.43 | 0.48 | 0.43 | 3.52 | 0 | 50.31 |  | 0.180 | 0.160 | 0.05 | -0.21-0 | -0.19-0. | -0.16-0, | -0.19 0 | 0.11 -0. | 0.150 .0 | 0.04-0, | 0.02-0.0 | 0.26-0.3 | 0.36 0.03 -0 | -0.08-0.000. | -0.09 0.04 | 40.05 | 0.02 -0 | -0.05-0 | -0.07 | 0.02 | $0.09-0$ | -0.42-0 | 0.25 | 0.1 | 0.13 -0.21 | -0.27 |  | CASP3-GS |
| 0.89 | 0.85 | 0.89 | 0.860 | 0.72 | 0.81 | 0.83 | 0.72 | 0.64 | 40.64 | 40. | 0.44 | 0.18 |  | 0.650 | 0.49 | 0.66 | 0.490 | 0.430. | 0.43 | 0.30 .1 |  | 0.40 | 0.170 | 0.310 .2 | $0.220 .13-0$ | -0.05 0 | 0.170 .12 | 20.11 | 0.05 | O 0 |  | 0 |  | -0.22-0 | 0.44 | 0.54-0.2 | 0.230 .01 | -0.43 |  | AURKA-GS |
| 0.45 | 0.43 | 0.48 | 0.410 | 0.37 | 0.36 | 0.44 | 0.4 | 0.21 | 10.37 | 0.2 |  | 0.16 | 0.65 |  | 0.22 | 0.44 | 0.38 | 0.510 .51 | 0.510 |  |  |  |  | 0.30 .1 | 0.160 | 0.06 0 | 0.30 .26 | 260.29 | -0 |  |  |  |  | -0.37-0. | 0.61 |  | 0.410 .0 |  |  | MYC-GS |
| 0.52 | 0.51 | 0.53 | 0.510 | 0.43 | 0.49 | 0.38 | 0.47 | 0.4 | 0.28 | 80.27 | 70.23 | 0.05 | 0.49 | 0.22 |  | 0.19 |  |  |  |  |  |  |  | 0.180 .2 | 0.20 .360 | 0.210 .3 | 0.350 .34 | 340.32 | -0.18-0 | 8-0.16 | -0.2-0 |  | -0.23-0 | -0.34-0 | 0.24-0. |  | 0.07-0.06 | -0.21 |  | E2F3-GS |
| 0.6 | 0.53 | 0.56 | 0.62 | 0.5 | 0.440 | 0.41 | 0.3 | 0.34 | 4.44 | 40.47 | 70.33 | -0.21 | 0.66 | 0.440 | 0.19 |  | 0.780. | 0.440 .4 | 0.470 | 0.230 .3 | 0.370 .3 | 0.330. | 0.120 | 0.410 .2 | $0.21-0.21-0$ | -0.22-0. | -0.16-0.27- | 27-0.25 | 0.11 | 0.12 | 0.070 | 0.21 | -0.03 0 | 0.36 | $0.04-0$ | 0.22-0. | 0.170 .06 | -0.17 | -0.6 | IGF1-GS |
| 0.46 | 0.37 | 0.38 | 0.45 | 0.31 | 0.29 | 0.28 | 0.17 | 0.14 | 0.36 | 0.4 | 0.32 | -0.19 | 0.49 | 0.38 |  | 0.78 |  | 0.60 .5 | 0.52 | 0.230 .4 | 0.420 .2 | 0.260. | 0.060. | 0.190 .1 | $0.15-0.19$-0 | -0.22-0.2 | -0.28 -0.36 | 36-0.4 | 0.39 | 0.39 | 0.340 | 0.43 | 0.230 | 0.430 | $0.15-0$ | -0.1-0.1 | 0.170 .22 | -0.1 |  | obesity-Gs |
| 0.23 | 0.17 | 0.21 | 0.21 | 0.090 | 0 | 0.18 | $0.15-0$ | -0.0 | 80.17 | 70. | 40.11 | -0.16 | 0.43 | 0.51-0 |  | 0.44 | 0.6 |  | 0 | 0.080 .2 | 0.240 | 0.10. | 0.060 | 0.260 .1 | $0.19-0.06-0$ | -0.05 0.0 | $0.01-0.05$ | 05-0.02 | 0.10 | 0.110 |  | 0.19 | 0.240 | 0.11 - | 0.34-0. | $0.55-0.3$ | 0.310 .33 | -0.18 | -0.2 | SRC-Gs |
| 0.26 | 0.23 | 0.25 | 0.280 |  | 0.15 | 0.2 | 0.08 | -0.03 | 30.07 | 0.12 | 20.03 | -0.19 | 0.430 | 0.510 | 0.09 | 0.47 | 0.52 | 0.64 |  |  |  |  | 0.020 .3 | 0.350 .3 | 0.38 -0. | 50. | $0.06-0.02$ | 202-0.02-0, | -0.05-0 | 5-0.03 0 |  | 0.04 |  |  | 0.32-0. | 0.51-0.3 | 0.350 .33 - |  |  | BetaCatenin-GS |
| 0.33 | 0.32 | 0.3 | 0.32 |  | 0.34 | 0.4 | 0.32 | 0.31 | 0.36 | 0.37 | 70.44 | 0.11 | 0.3 |  | 0.07 | 0.23 | 0.230 | 0.08 -0, | -0.05 |  | 0.250 .1 |  | 0.1 | -0.1 | 0.130 .1 | $1-0$ | -0.06-0.07 | 07-0.1 | 0.38 | 0.36 |  | 0.68 | 0.030 | 0.110 |  |  | 0.020 |  |  | GDNF-GS |
| 0.27 | 0.22 | 0.2 | 0.26 | 0 |  |  |  | 0.18 | 80.29 | 0.36 | 60.41 |  |  |  |  | 0.37 |  |  |  | 0.25 |  | 0.20 | 0.10 .0 | 0.040 .04 | 0.04 -0.07-0 | -0.23-0.3 | -0.35-0.35 | 35-0.38 | 0.38 |  |  |  |  | 0.45 | 0.30 | 0.10 .17 | 0. 17 -0 |  |  | RAS-GS |
| 0.4 |  |  | 0.46 | 0.4 |  |  |  | 0.37 | 0.3 | 0.5 |  |  | 0.40 |  | 0.21 |  | 0.260 |  |  |  | 0.2 |  | 0.83 0.0 | 0.090 .0 | $0.08-0.15-0$ | -0.26-0.2 | -0.22-0.23-20 | 23-0.25 | 50.09 |  | 0.10 |  |  |  |  |  | 0.130.15 |  |  | Surgery.Ki67 |






















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 -0.210 .150 .170 .180 .130 .23 TP53-GS







# Additional file 7: Figure S5b 

