**Source data, Figure 7 and figure 7 supplements**

**Figure 7 and figure 7- figure supplement 1: Elkin1-KO increases cell dissociation from organotypic spheroids**

Note: these values are taken from the same data sets. Where n = number of spheroids the data have been averaged for each spheroid (Figure 7), data are also presented for n = cells, where values have been calculated for all of the individual cells (not averaged for each spheroid)(Figure 7- figure supplement 1).

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| **Spheroids: Number of dissociated cells** |
| WT (averaged/ spheroid) |
| Time (h) | 24 | 48 | 72 |
| N Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 9 spheroids75 ± 1734 – 1156147 – 9229 - 182 | 9 spheroids177 ± 30105 – 249153124 – 23069 - 348 | 9 spheroids324 ± 33246 – 402301261 – 402211 - 492 |
| KO (averaged/ spheroid) |
| Time (h) | 24 | 48 | 72 |
| N Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 9 spheroids640 ± 89436 – 845654405 – 845392 - 852 | 9 spheroids1239 ± 1011006 – 14721409974 – 1511960 - 1549 | 9 spheroids1752 ± 711589 – 191618201584 – 19131478 – 1913  |
| **Spheroids: Distance from spheroid (µm)** |
| WT (averaged/ spheroid) |
| Time (h) | 24 | 48 | 72 |
| N (spheroids)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 9 226.6 ± 22.48173.5 - 279.8216.6197.9 - 249.3130 - 356 | 9 216.0 ± 10.75191.2 - 240.8223.1191.2 - 239.5189 - 241 | 9 246.2 ± 9.345224.7 - 267.8253.8218.2 - 272.2 |
| KO (averaged/ spheroid) |
| Time (h) | 24 | 48 | 72 |
| N (spheroids)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 9 spheroids255.9 ± 10.6231.5 – 280.2254.2227.8 – 285.1227.2 – 286.5 | 9 spheroids336.6 ± 17.2297 – 376.2366.2285.7 – 378.9278.4 – 385.6 | 9 spheroids418.9 ± 20.2372.5 – 465.4444.7358.1 – 472.1350 – 480.4 |
| WT (individual cells) |
| N (cells)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 156 222 ± 7.5207 – 237205174 – 242194 - 216 | 394228 ± 3.3222 – 235219182 – 263212 - 226 | 546261 ± 3.2255 – 267252207 – 302240 - 262 |
| KO (individual cells) |
| N (cells)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 3659269 ± 1.7266 – 273257197 – 326253 - 261 | 9115352 ± 1.3350 – 355346252 – 444343 - 349 | 12690430 ± 1.5427 – 433417296 – 550413 – 421  |
| **Spheroids: Sphericity** |
| WT (averaged/ spheroid) |
| Time (h) | 24 | 48 | 72 |
| N (spheroids)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 9 spheroids0.88 ± 0.020.84 – 0.920.890.86 – 0.920.79 – 0.94 | 9 spheroids0.91 ± 0.0040.90 – 0.920.900.90 – 0.920.90 – 0.92 | 9 spheroids0.92 ± 0.0050.90 – 0.930.910.91 – 0.930.90 – 0.94 |
| KO (averaged/ spheroid) |
| Time (h) | 24 | 48 | 72 |
| N (spheroids)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 9 spheroids0.83 ± 0.0060.81 – 0.840.830.80 – 0.840.80 – 0.85 | 9 spheroids0.87 ± 0.0070.86 – 0.890.860.86 – 0.890.86 – 0.90 | 9 spheroids0.90 ± 0.0030.89 – 0.900.900.89 – 0.900.88 – 0.90 |
| WT (individual cells) |
| N (cells)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 1560.86 ± 0.0060.85 – 0.870.880.80 – 0.910.85 – 0.89 | 3940.90 ± 0.0030.90 – 0.910.920.88 – 0.950.92 – 0.93 | 5460.91 ± 0.0020.90 – 0.910.920.89 – 0.940.92 – 0.93 |
| KO (individual cells) |
| N (cells)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 35190.83 ± 0.0010.82 – 0.830.840.78 – 0.900.84 – 0.84 | 86510.87 ± 0.0010.87 – 0.880.890.83 – 0.930.89 – 0.89 | 117560.90 ± 0.0010.90 - 0.900.910.87 – 0.940.91 – 0.92 |

**Figure 7- figure supplement 2: The effect of Elkin1 deletion on migration in 3D collagen gels**

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| **Isolated cells: Mean track speed (µm/min)** |
|  | **WT** | **KO** |
| N (tracks)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 31350.41 ± 0.0030.40 – 0.420.390.29 – 0.510.39 – 0.40 | 15990.41 ± 0.0050.40 – 0.420.390.28 – 0.540.38 – 0.40 |
| **Isolated cells: cell sphericity (averaged over whole track)** |
|  | **WT** | **KO** |
| N (tracks)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 31350.873 ± 0.0010.870 – 0.8760.8980.843 - 0.9240.896 - 0.900 | 15990.871 ± 0.0020.868 - 0.8740.8880.840 – 0.9100.885 – 0.891 |
| **Isolated cells: track straightness** |
|  | **WT** | **KO** |
| N (tracks)Mean ± s.e.m.Mean CI (95%)MedianQuartilesMedian CI (95%) | 31350.39 ± 0.0040.38 - 0.400.350.20 - 0.540.34 - 0.36 | 15990.35 ± 0.0060.33 - 0.360.270.13 - 0.530.25 – 0.29 |