Supplementary Materials:

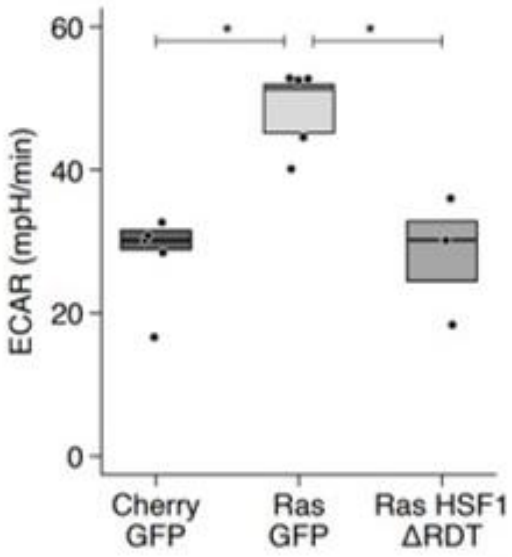

Figure S1. Glycolytic capacity of transformed MCF10A cells. Analysis of cell glycolytic capacity in oncogenically transformed MCF10A cells. Significantly increased glycolytic capacity was observed in transformed cells (Ras GFP, * $p < 0.05$) compared to non-transformed cells (Cherry GFP). Significantly lower glycolytic capacity was observed in transformed cells with elevated HSF1 (Ras HSF1 ΔRDT, * $p < 0.05$).

A

Analysis	EGR4-1	EGR4-2	EGR4-S
Length	589 aa	486 aa	382aa
Predicted Molecular Weight	61619.01 m.w.	50795.24 m.w	40012.94 m.w.
1 microgram =	16.229 pMoles	19.687 pMoles	24.992pMoles
Molar Extinction coefficient	38080	30630	21900
1 A[280] corr. to	1.62 mg/ml	1.66 mg/ml	1.83 mg/ml
A[280] of 1mg/ml	0.62 AU	0.60 AU	0.55 AU
Isoelectric Point	8.75	6.21	8.66
Charge at pH 7	10.77	-4.29	6.46
Charged amino acids (RKHYCDE)	164 (34.51% w/w; 27.84% freq.)	131 (32.97% w/w; 26.95% freq.)	105 (33.80% w/w; 27.49% freq.)
Acidic amino acids (DE)	55 (10.74% w/w; 9.34% freq.)	49 (11.57% w/w; 10.08% freq.)	35 (10.48% w/w; 9.16% freq.)
Basic amino acids (KR)	65 (14.94% w/w; 11.04 freq.)	44 (12.07% w/w; 9.05% freq.)	41 (14.28% w/w; 10.73% freq.)
Polar amino acids (NCQSTY)	114 (19.33% w/w; 19.35% freq.)	100 (20.53% w/w; 20.58% freq.)	77 (20.16% w/w; 20.16% freq.)
Hydrophobic amino acids (AIFWV)	191 (31.31% w/w; 32.43 freq.)	164 (33.12% w/w; 33.74% freq.)	127 (32.44% w/w; 33.25% freq.)

B

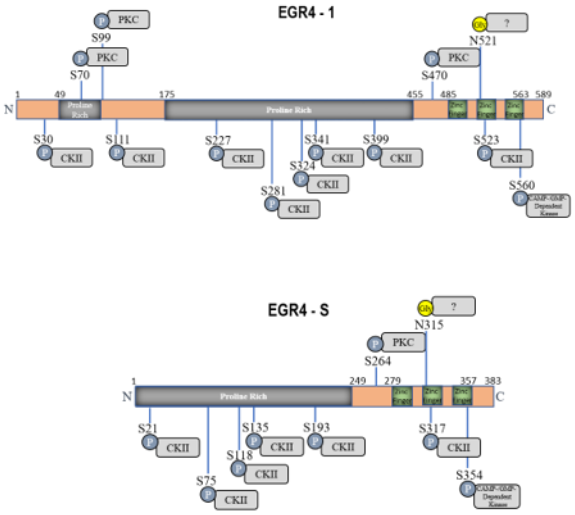

Figure S2. Analysis of EGR4 isoforms. **(A)** Biostructural analysis of the 3 possible protein isoforms of EGR4 reveals 2 potential proteins (EGR4-1 and EGR4-S) and one unlikely possibility (EGR4-2) **(B)** Schematic diagrams of (top) the longer EGR4-1 isoform showing two proline-rich regions and multiple phosphorylation sites and (bottom) the shorter/truncated EGR4-S isoform with one single proline-rich region and less phosphorylation sites.

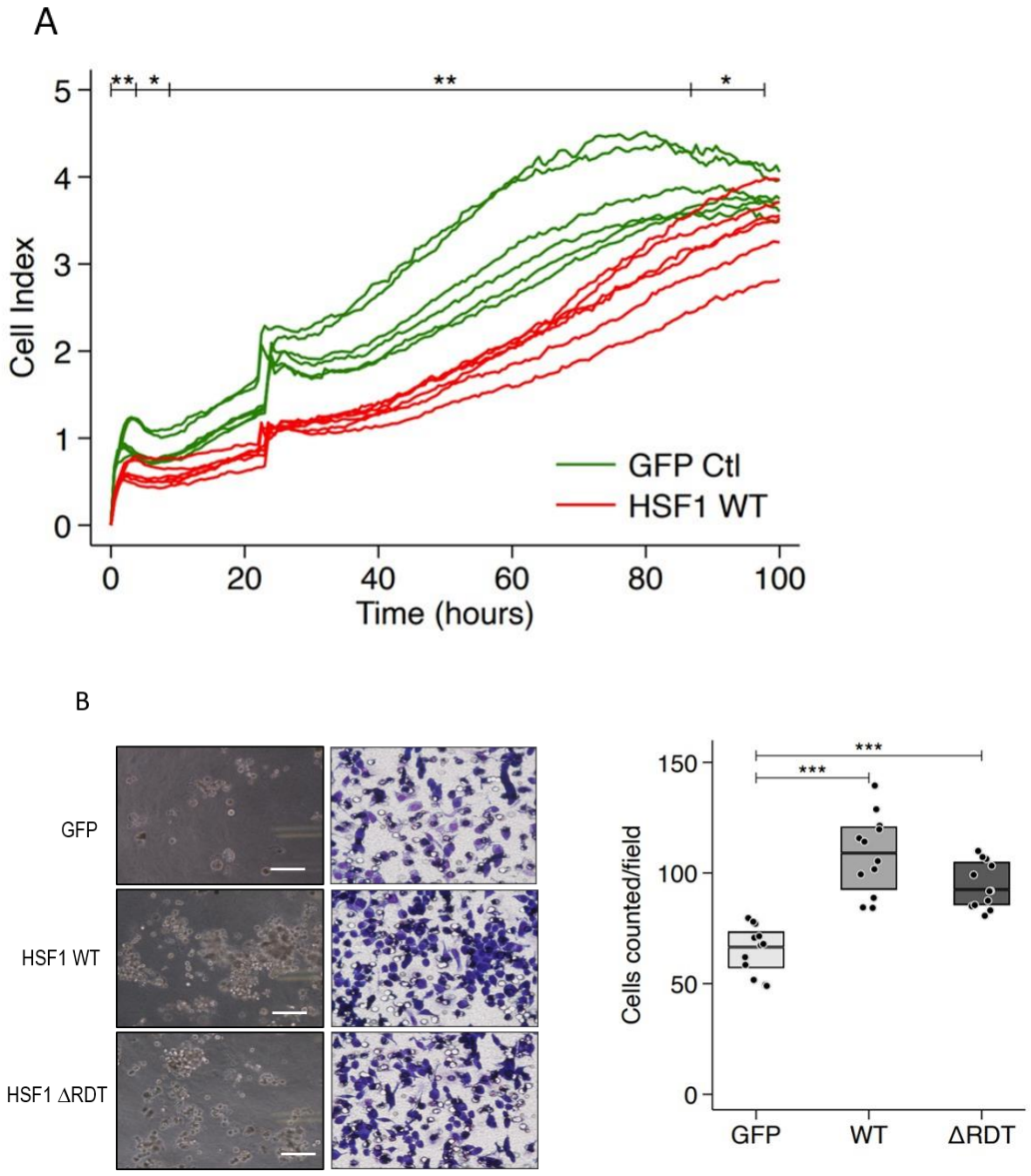

Figure S3. Effect of altered HSF1 on cancer cell characteristics. **(A)** Proliferation Assay showing the effect of elevated HSF1 expression (HSF1 WT) on HER2+ cell proliferation over time (* $p<0.05$, ** $p<0.01$) – note cell numbers were normalised from the start of all experiments to show proliferation rate **(B)** 3D culture of HER2+ cells grown from single cell origin (left panels) and migration assay results (right panels) from cells with elevated HSF1 (WT, ΔRDT *** $p<0.001$) compared to control (GFP).