

Supplementary Information

Evaluation of the Cytotoxicity of Cationic Polymers on Glioblastoma Cancer Stem Cells

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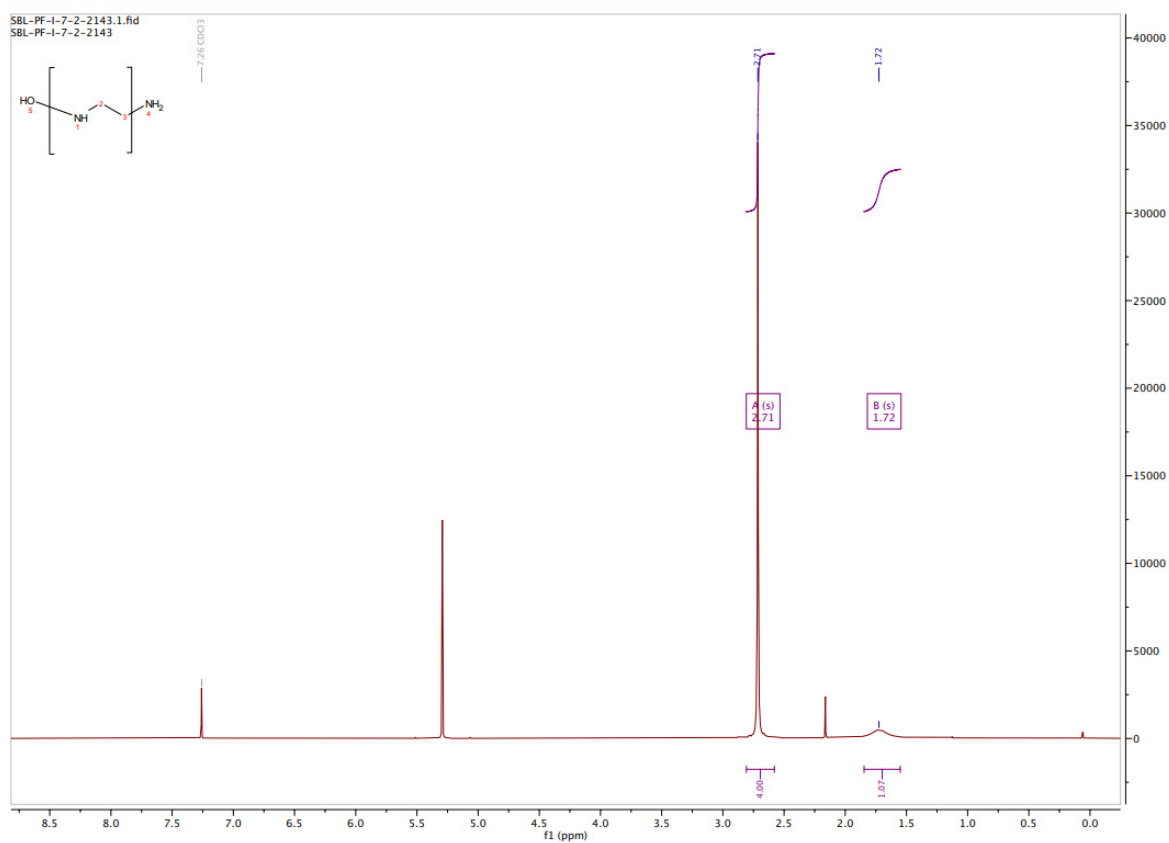


Figure S1. ¹H NMR spectrum of synthesised 22 kDa L-PEI. 400 MHz, CDCl₃.

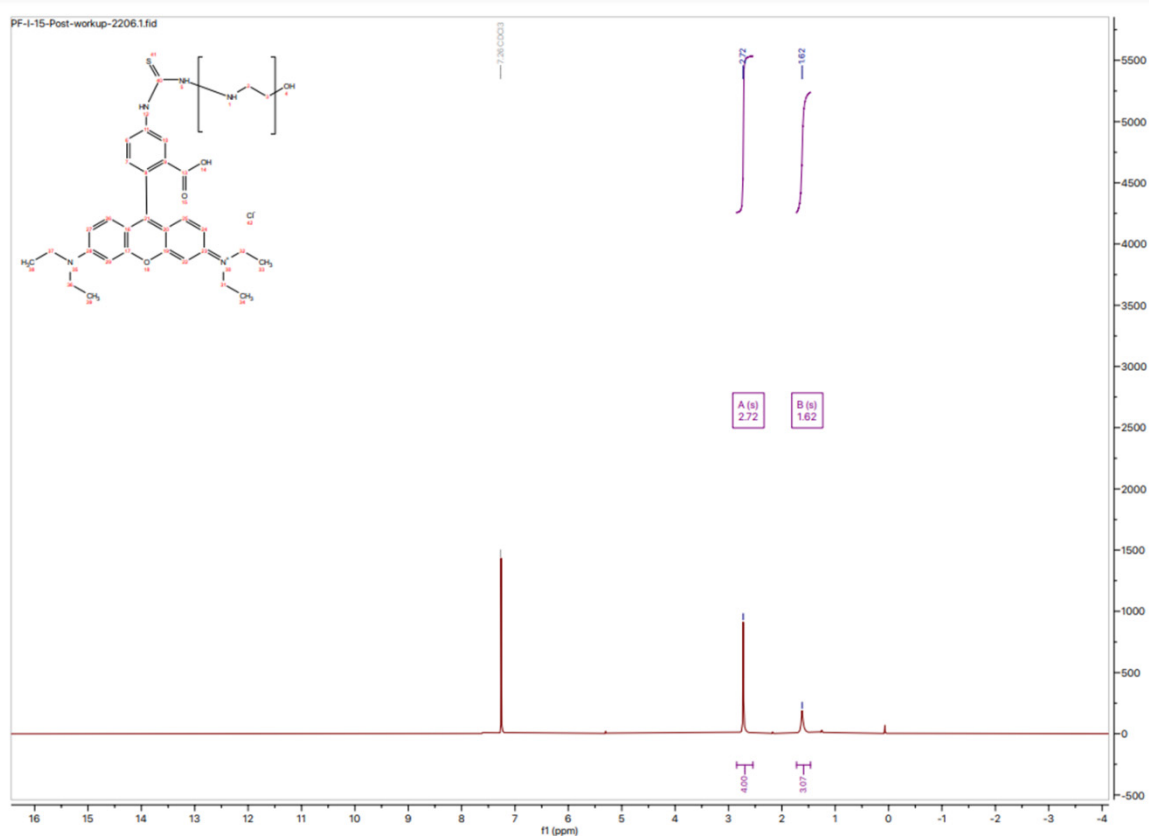
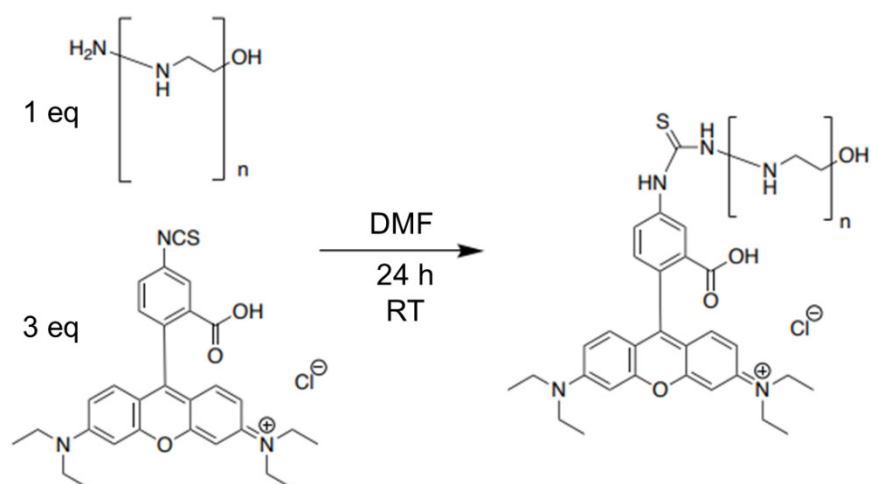


Figure S2. Reaction schematic and ^1H NMR spectrum of synthesised 22 kDa L-PEI. 300 MHz, CDCl_3 .

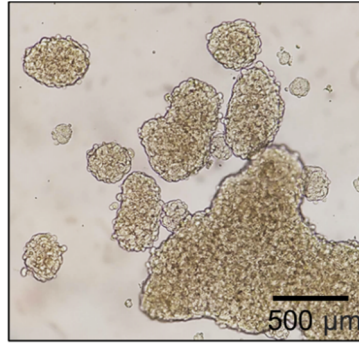


Figure S3. NCH421K spheroid cell culture. Inverted light microscope image of NCH421K spheroids grown in 96 well culture dishes for 4 days before imaging at $4\times * 10\times = 400\times$ magnification using an Axio Vert A1 inverted light microscope (Zeiss) coupled to a ProgRes C5 cool (Jenoptik) camera.

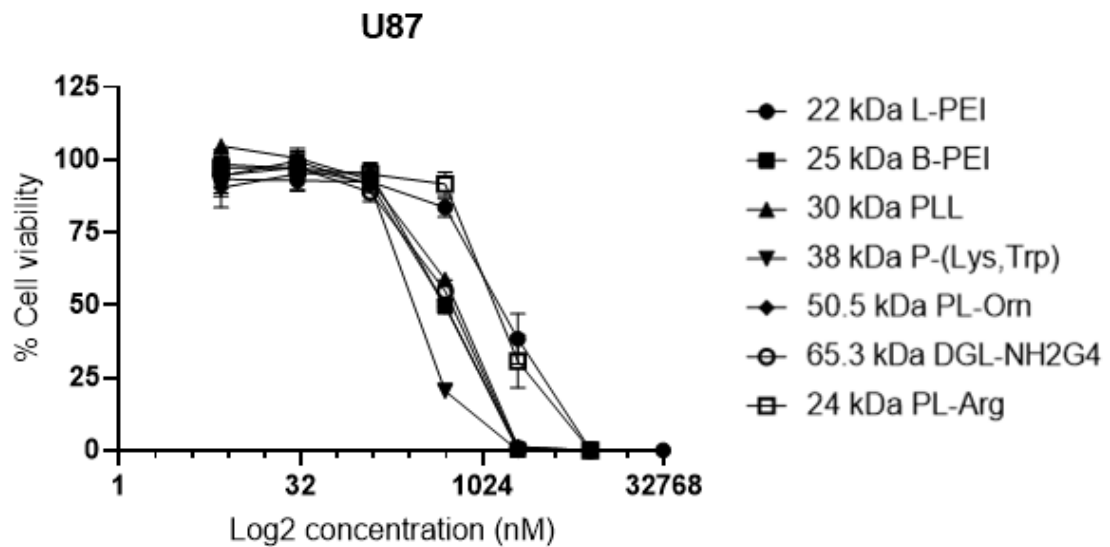


Figure S4. IC50s for the U87-MG cell line. CelltiterGlo 3D viability dose-response of 24 h treated U87 cells. Values represent the mean of at least $n = 3$ independent replicates. Error bars represent \pm one SEM.

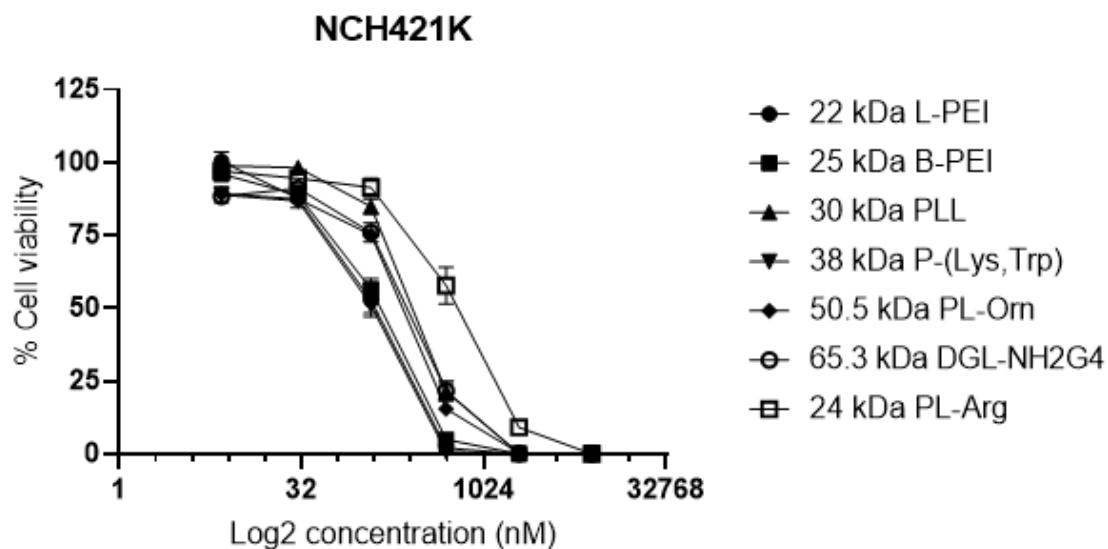


Figure S5. IC50s for the GSC cell line NCH421K. CelltiterGlo 3D viability dose-response of 24 h treated NCH421K cells. Values represent the mean of at least $n = 3$ independent replicates. Error bars represent \pm one SEM.

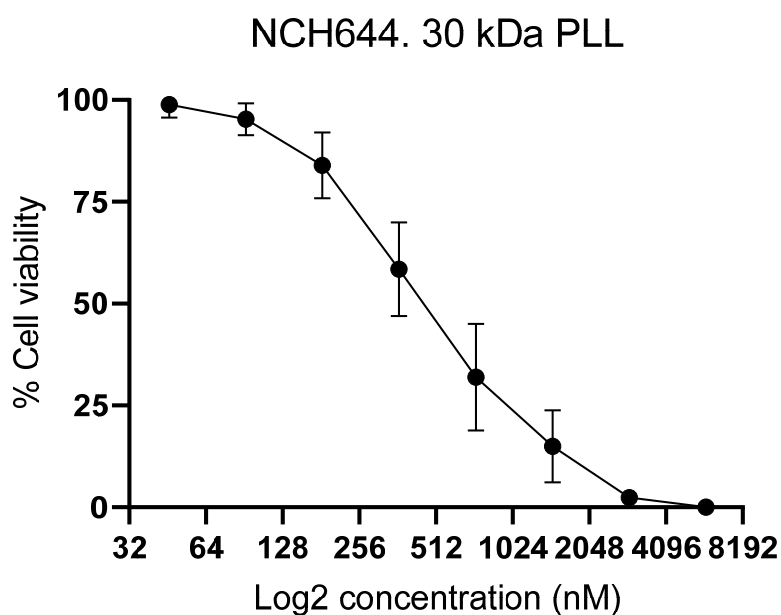


Figure S6. IC50s for the GSC cell line NCH644. CelltiterGlo 3D viability dose-response of 24 h treated NCH644 cells. Values represent the mean of at least $n = 3$ independent replicates. Error bars represent \pm one SEM.

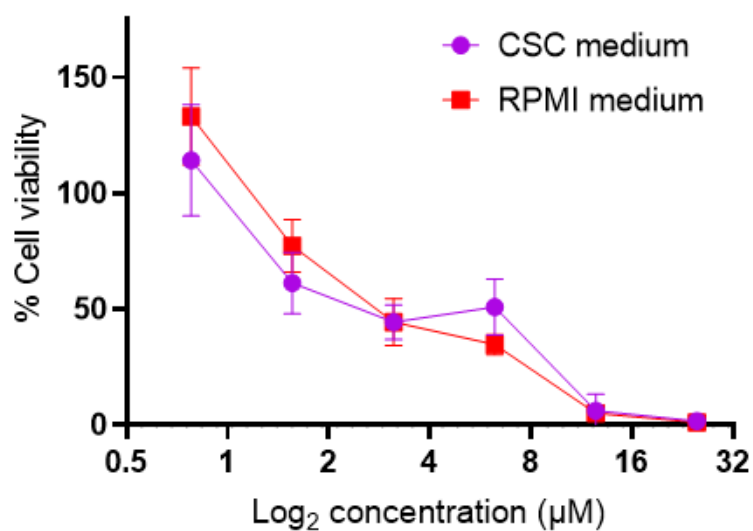


Figure S7. Lack of culture medium dependent toxicity for NHC-Ir(III). CelltiterGlo 3D viability dose-response of 24 h treated U87 cells in either their normal (RPMI) or CSC medium. Values represent the mean of at least $n = 3$ independent replicates. Error bars represent \pm one SEM.

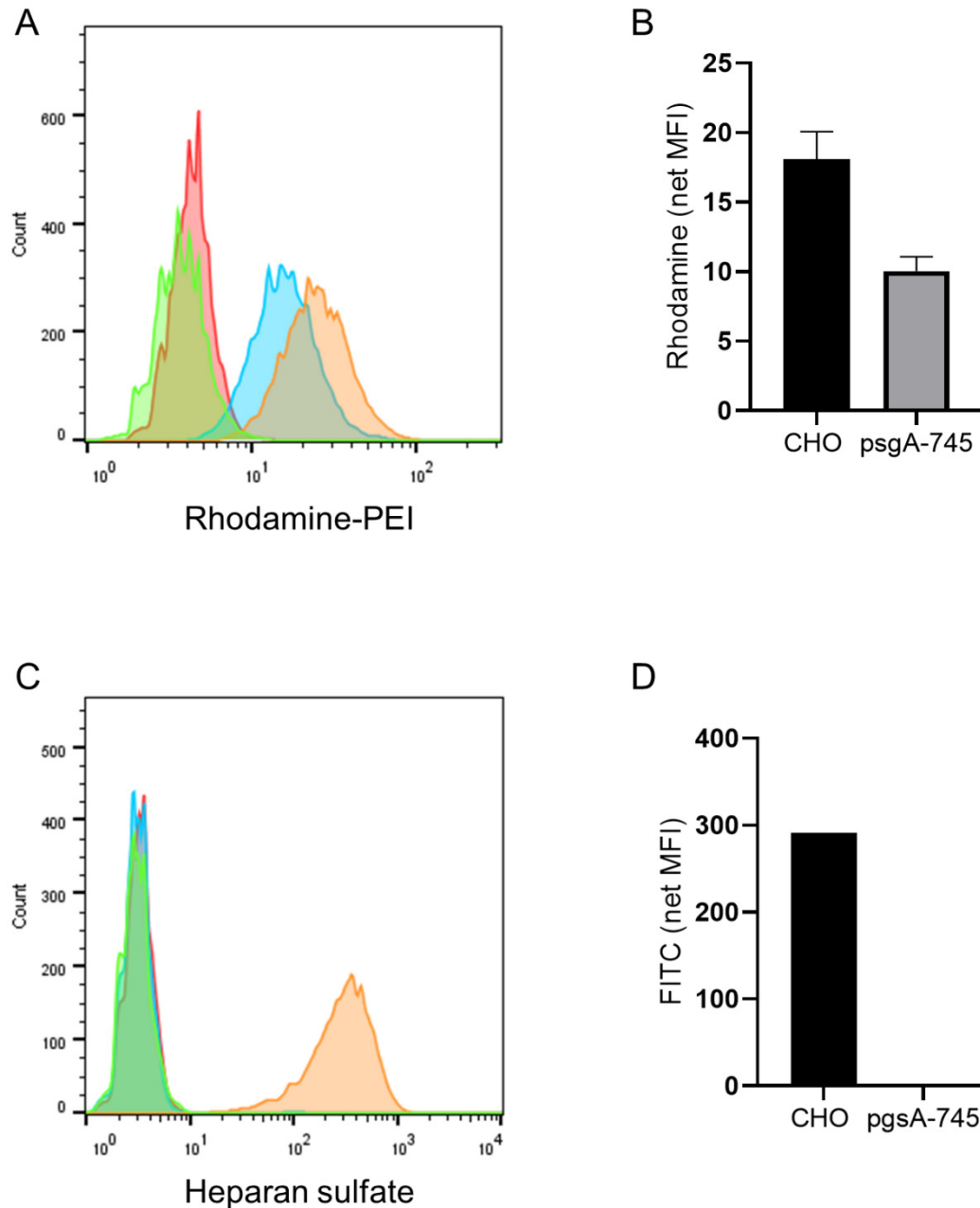


Figure S8. Reduced PEI affinity of glycosaminoglycan deficient CHO cells. (A) Representative fluorescence histograms (FlowJo) of 2 h, 37 °C Rhodamine-PEI incubated CHO-K1 WT and CHO-pgsA-745 mutant cells. (B) Bar charts of net MFI (median) (MFI stained – MFI unstained) of stained cells. Values represent the mean of $n = 2$ independent experiments \pm one SEM. (C) Representative fluorescence histograms (FlowJo) of heparan sulfate stained CHO-K1 WT and CHO-pgsA-745 mutant cells. (D) Bar charts of net MFI (median) (MFI stained – MFI unstained) of stained cells. Values represent one experiment. Red = Non-stained (A) or secondary antibody only (C) stained CHO cells. Green = Non-stained (A) or secondary antibody only (C) stained pgsA-745 cells. Orange = Rhodamine-PEI stained (A) or primary + secondary antibody stained (C) CHO cells. Blue = Rhodamine-PEI stained (A) or primary + secondary antibody stained (C) pgsA-745 cells.

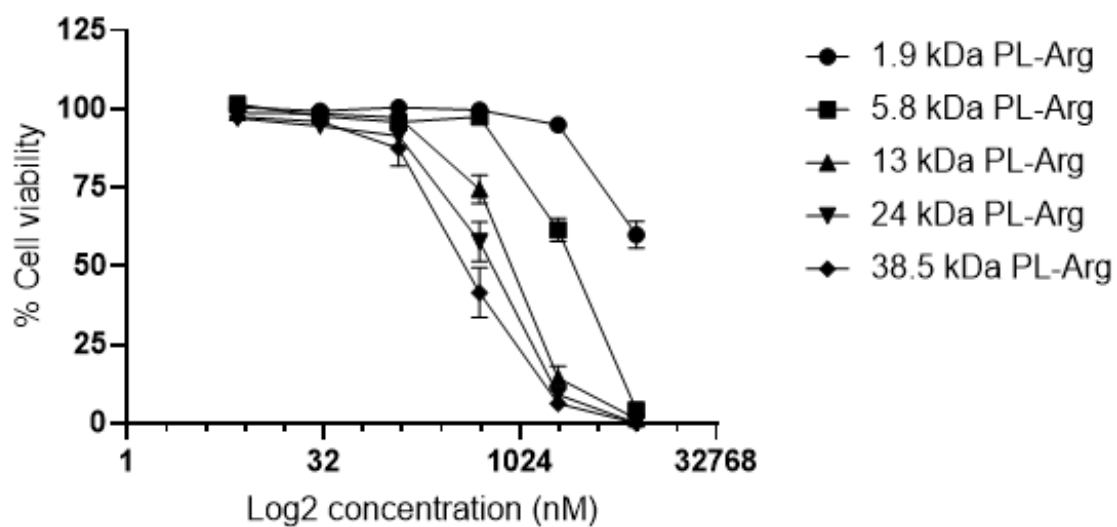


Figure S9. IC50s for the GSC cell line NCH421K. CelltiterGlo 3D viability dose-response of 24 h treated NCH421K cells. Values represent the mean of at least $n = 3$ independent replicates. Error bars represent \pm one SEM.

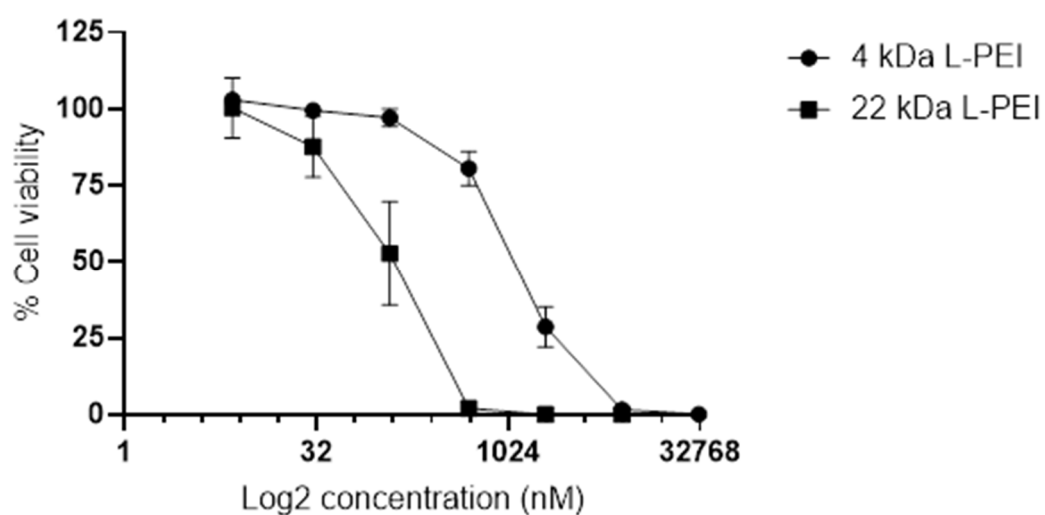


Figure S10. IC50s for the GSC cell line NCH421K. CelltiterGlo 3D viability dose-response of 24 h treated NCH421K cells. Values represent the mean of at least $n = 3$ independent replicates. Error bars represent \pm one SEM.