Electronic Supplementary Material (ESI) for Nanoscale Advances.

Supplementary data

Hybrid bio nano-porous peptides loaded- polymer platforms with ~~antitumoral~~anticancer and antibacterial activity

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Fig. S1. Experimental set-up for pNIPAM-Co-BA (cop) porous coatings deposition

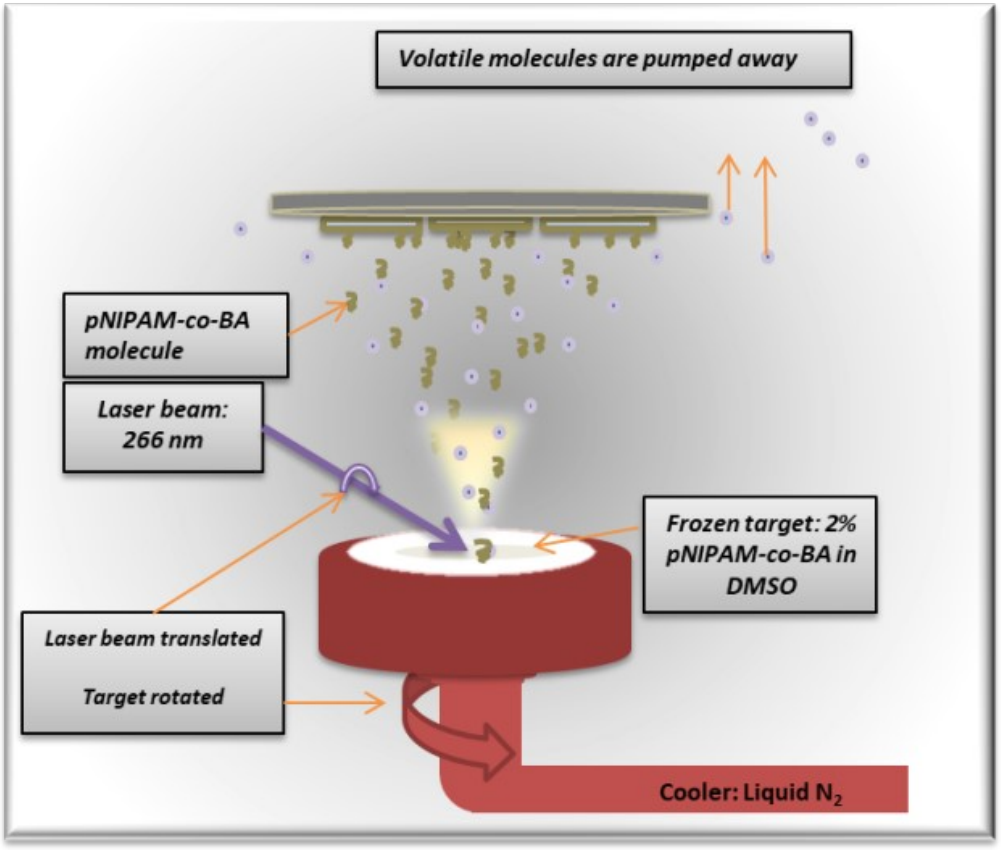


Fig. S2 Half maximal inhibitory concentrations (IC50) determined by MTS assay for Mel on HEK293T, A375, B16F1 and B16F10 cells after 24h post-exposure.

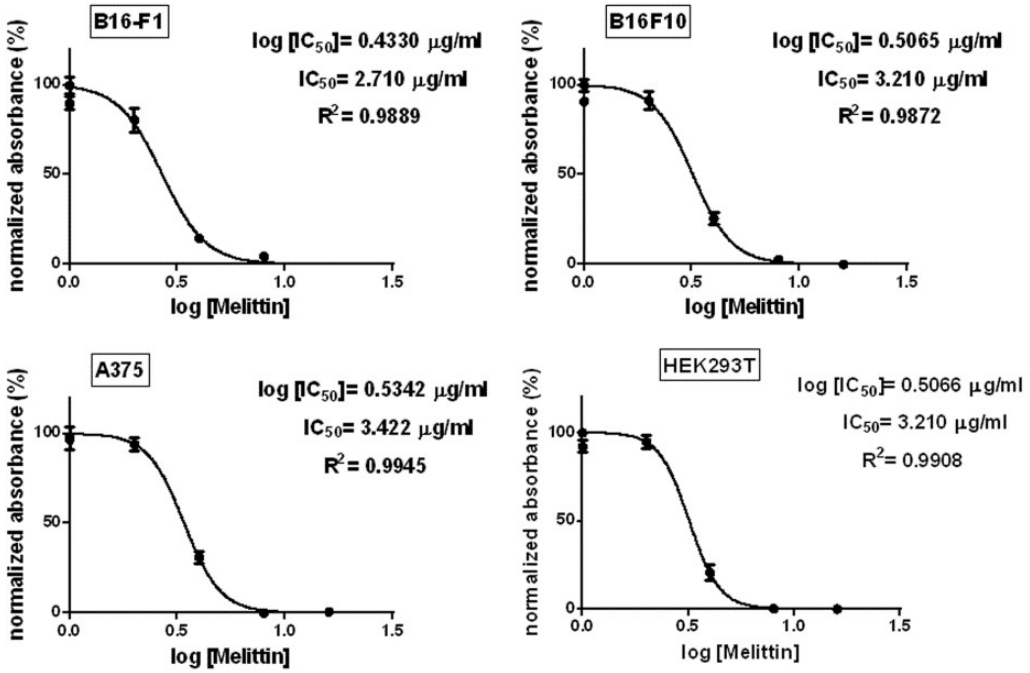


Fig. S3 AFM (A- area 5x5 µm2, C- area 45x45 µm2) and SEM (B-150.000 magnification) images of the copolymer+DMSO layers deposited by MAPLE on Si, at the laser fluence of 350 mJ/cm2, number of pulses (2h) 72000 depicting the pores sizes and coating thickness

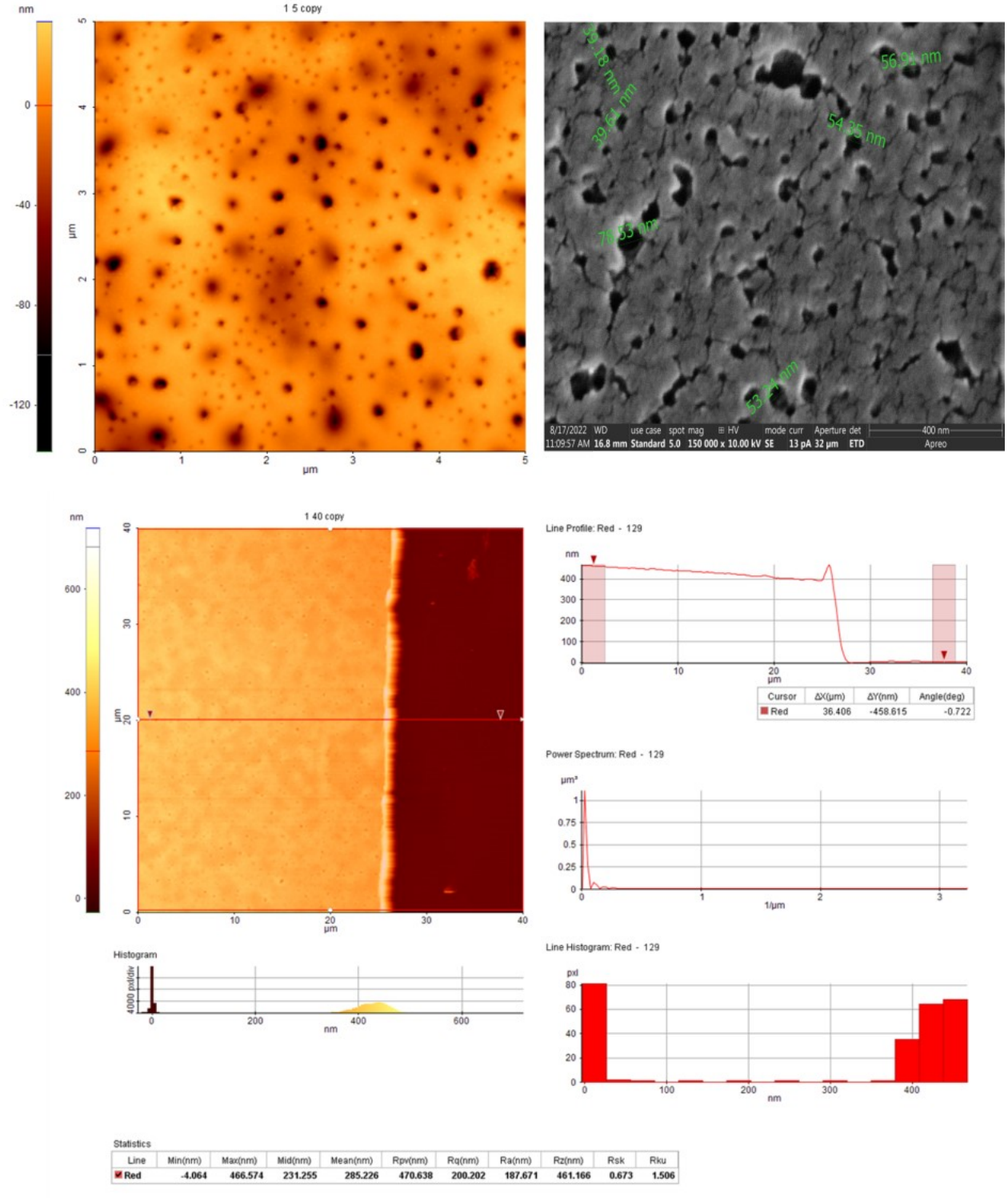


Fig S4. AFM and swelling behaviour profile sequence of pNIPAM-co-BA coatings before, during immersion in solution with pH acid and after removing from the acidic medium.

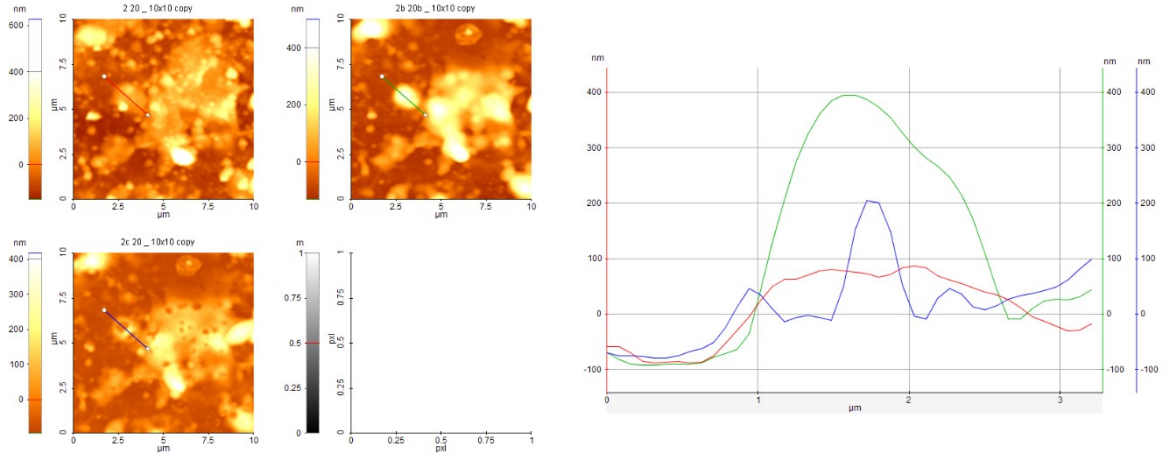


Fig.S5. NanoLC-MS/MS analysis of the samples extracted with PBS from the biomaterials covered with single peptides. A. Extracted ion chromatogram for the m/z corresponding to the monoisotopic mass of Magaining (extracted - upper panel and the standard - lower panel). B. MS/MS fragmentation pattern for Magainin in the extracted sample (left panel) and the standard (right panel). C&D. Similar for Melittin. E. Spectrophotometric profile of the extracted samples and the standard sample of Melittin.

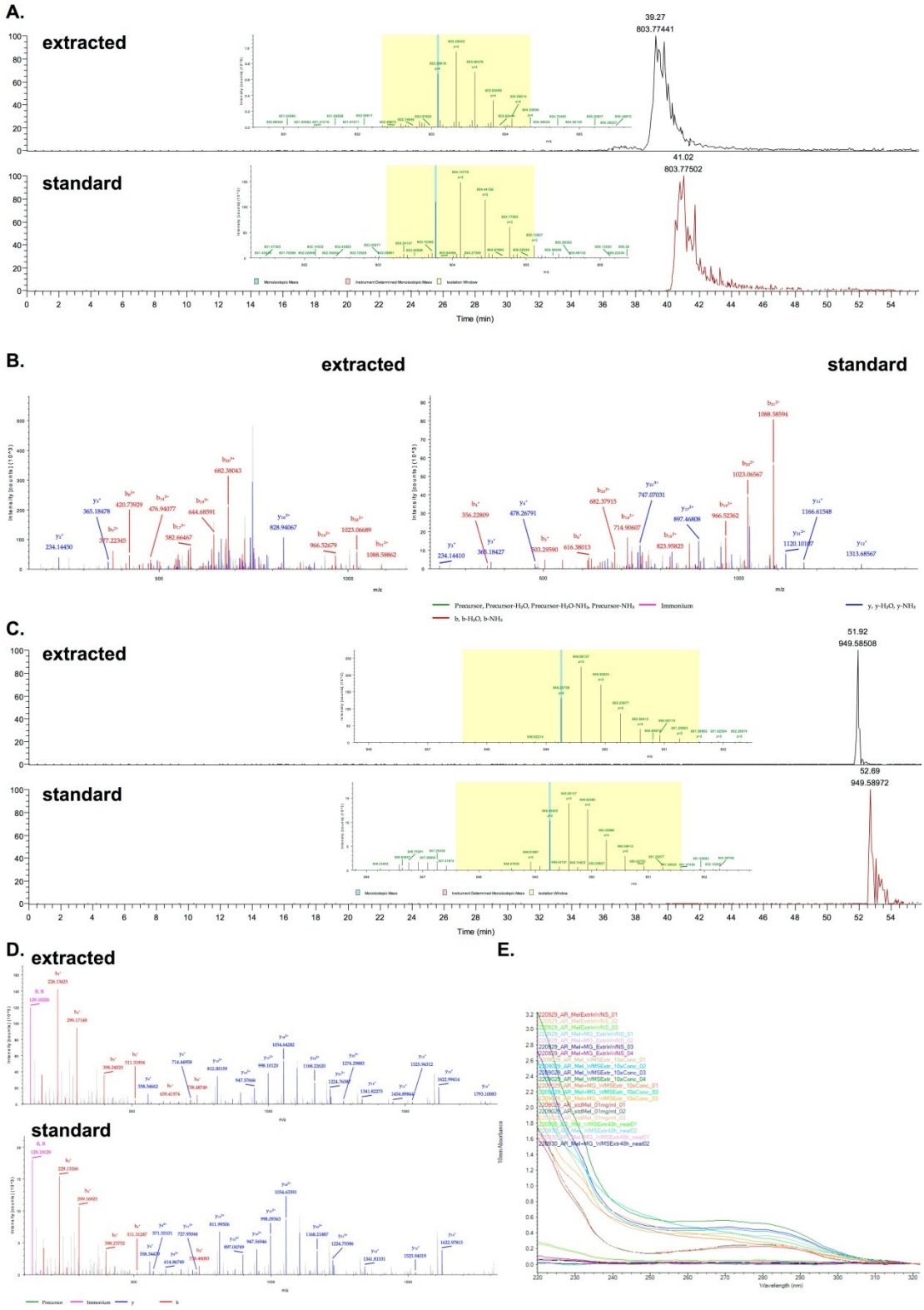


Fig.S6 Histogram profile of cell cycle phases after treatment for 24h with co-polymer matrix eluates

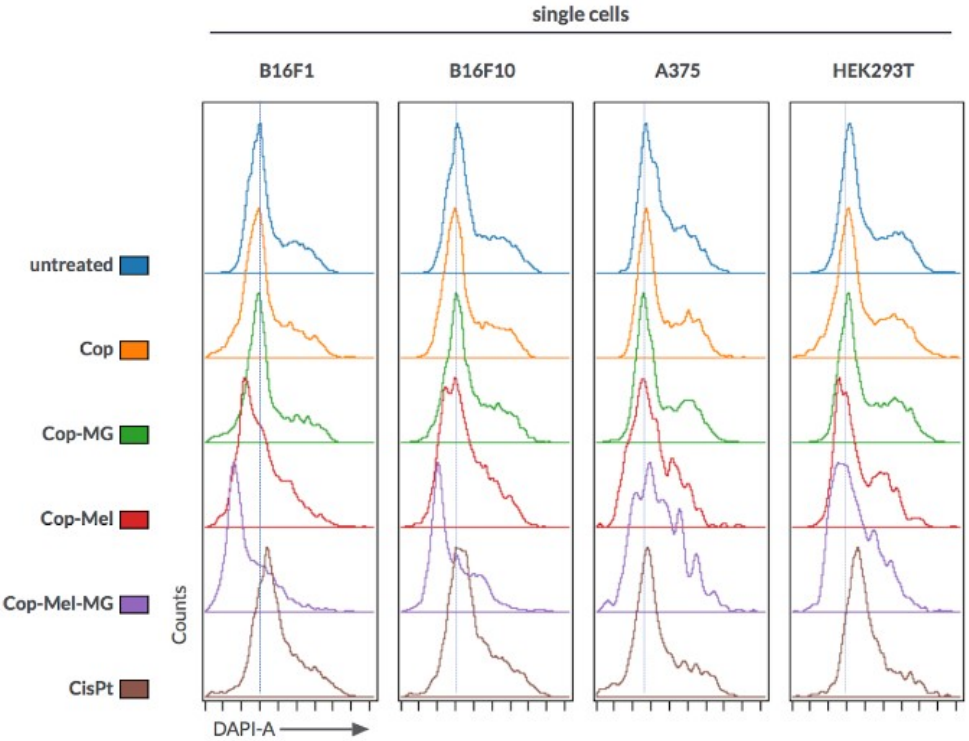


Fig. S~~5~~7: Flow cytometry scattergram depicting variations in forward and side scatter pulse areas (FSC-A and SSC-A) reflecting the impact of treatments on cell size and granularity. Mathematical gates were drawn to select for intact cell populations and to exclude debris before cell cycle profile analysis. The ~~table~~ figure presents the percent of intact cells in each sample. Relative size variation (FSC profile)

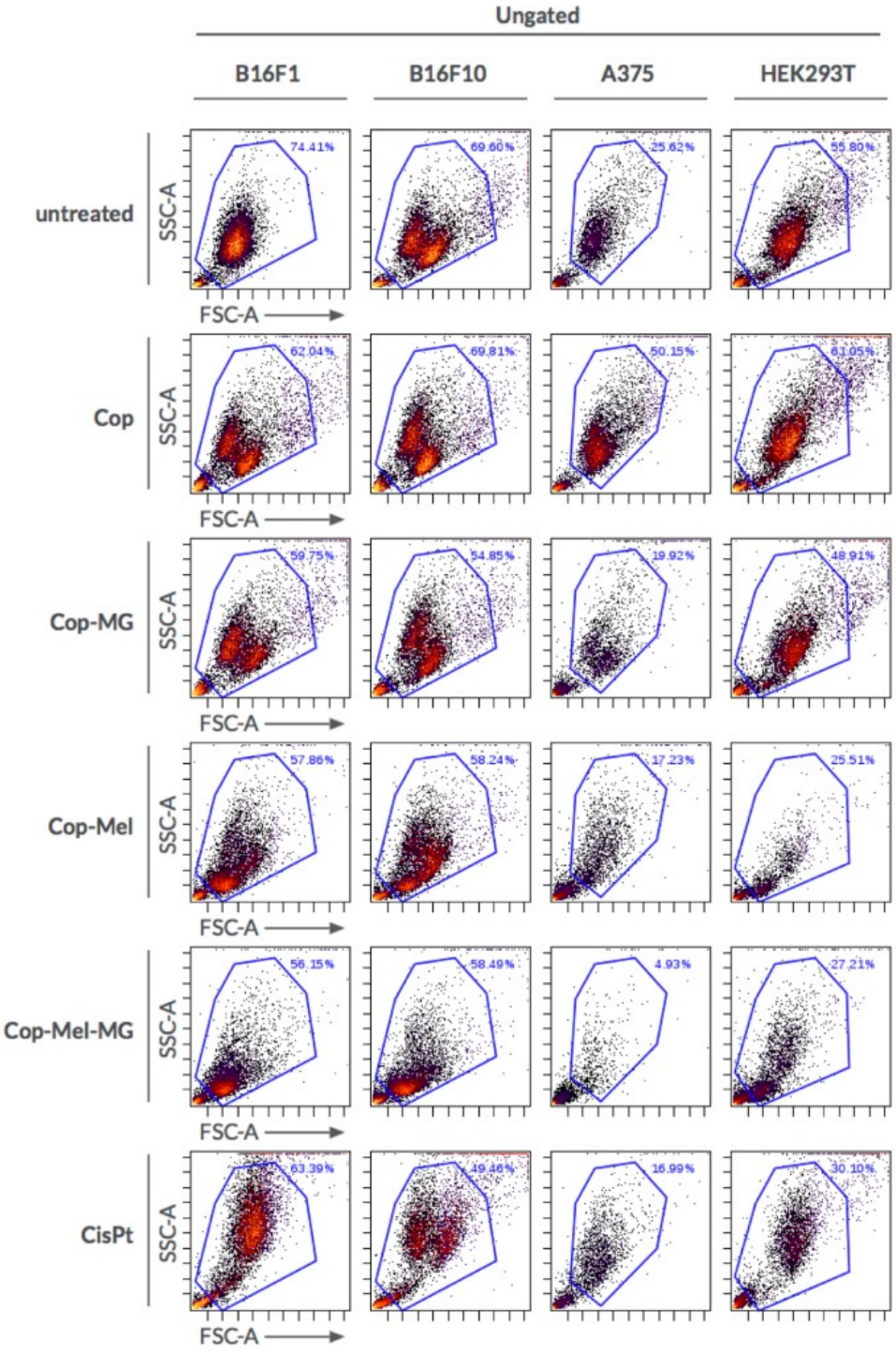
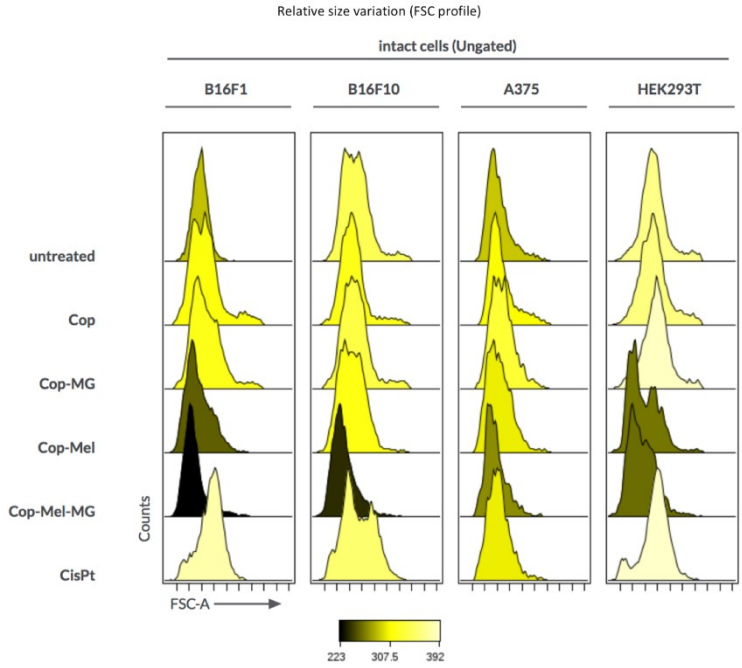


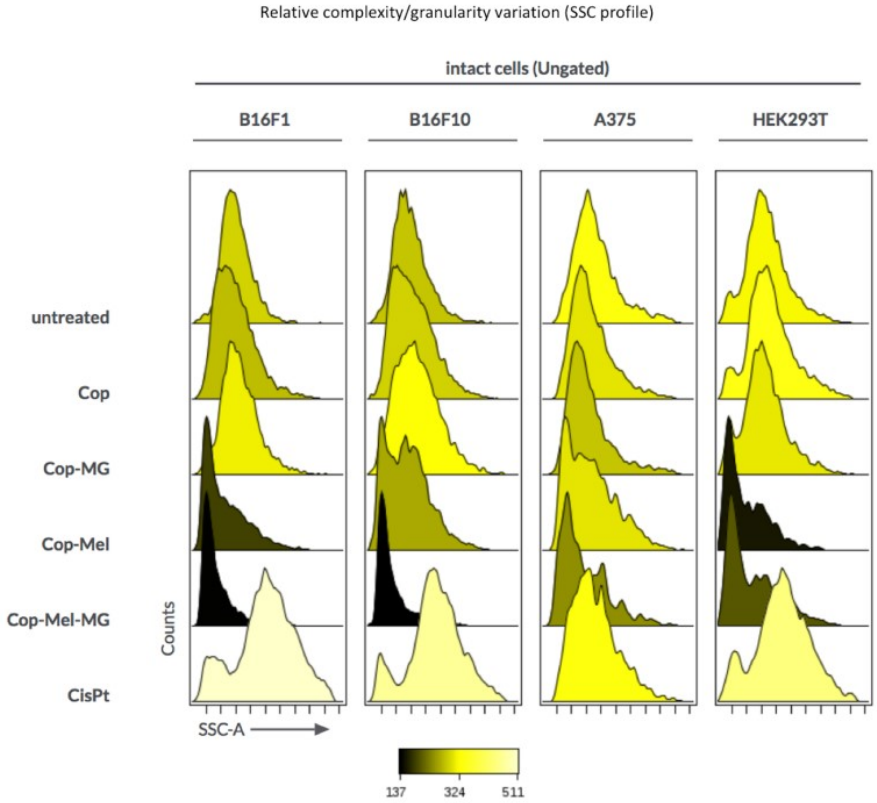
Fig.S68: Flow cytometry histograms depicting relative size variation (FSC profile) in cells treated with co-polymer matrix eluates, cisplatin or left untreated. Histogram color becomes lighter with increase in signal. Table presents median relative size values for intact cells.



Displaying Raw Median of X channel FSC-A

	intact cells (Ungated)			
	B16F1	B16F10	A375	HEK293T
untreated	287	343	289	364
Cop	313	317	307	361
Cop-MG	317	337	330	389
Cop-Mel	254.5	315	302	262
Cop-Mel-MG	223	238	270	259
CisPt	380	354	302	392

Fig. S~~7~~9: Flow cytometry histograms depicting relative complexity/granularity variation (SSC profile) in cells treated with co-polymer matrix eluates, cisplatin or left untreated. Histogram color becomes lighter with increase in signal. Table presents median relative complexity values for intact cells.



Displaying Raw Median of X channel SSC-A

	intact cells (Ungated)			
	B16F1	B16F10	A375	HEK293T
untreated	292	282	336.5	320
Cop	276	291	305	343
Cop-MG	313	325	281.5	308
Cop-Mel	185	261	305	155
Cop-Mel-MG	139	137	242	201
CisPt	511	466	336	441