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Chlorotoxin Modified Morusin-PLGA Nanoparticles for Targeted Glioblastoma Therapy

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SUPPLEMENTARY INFORMATION

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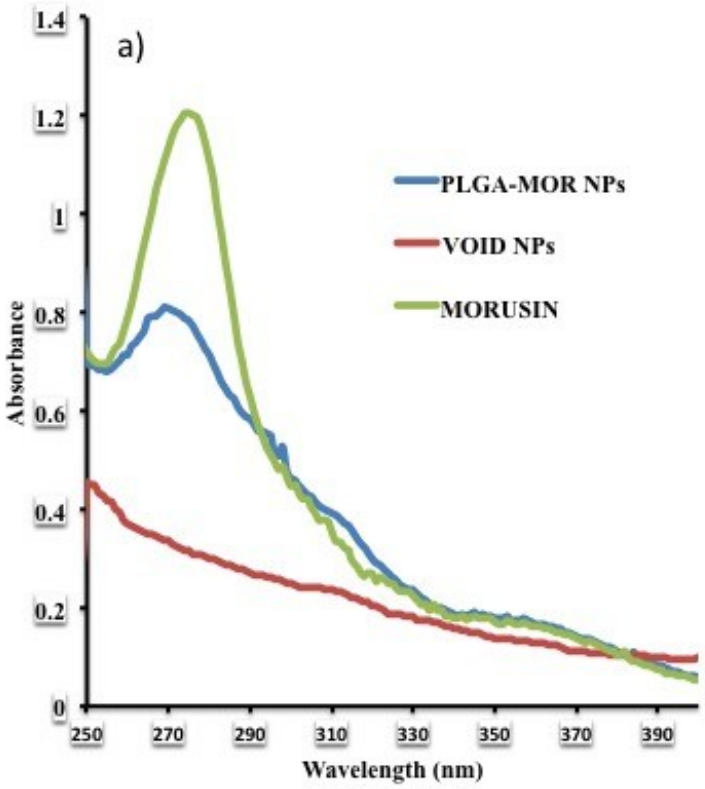

Figure S1. Encapsulation of morusin inside PLGA-MOR NPs carried out by UV-Vis spectroscopy. The supernatant of PLGA-MOR NPs dispersed in ethyl acetate was subjected to wavelength scan and the signature peak of morusin at 269 nm verified the presence of morusin in the NPs.

Supplementary Table 1. Physiochemical characterization of void PLGA and PLGA-MOR NPs after a period of 1 month

Characterization Parameter	Void PLGA NPs	PLGA-MOR NPs
Z average Diameter (nm)	175.81	242.9
Poly dispersity index (PDI)	0.125	0.209
Zeta potential (mV)	-21.7	-15.8
Entrapment Efficiency	-	97% ± 0.35

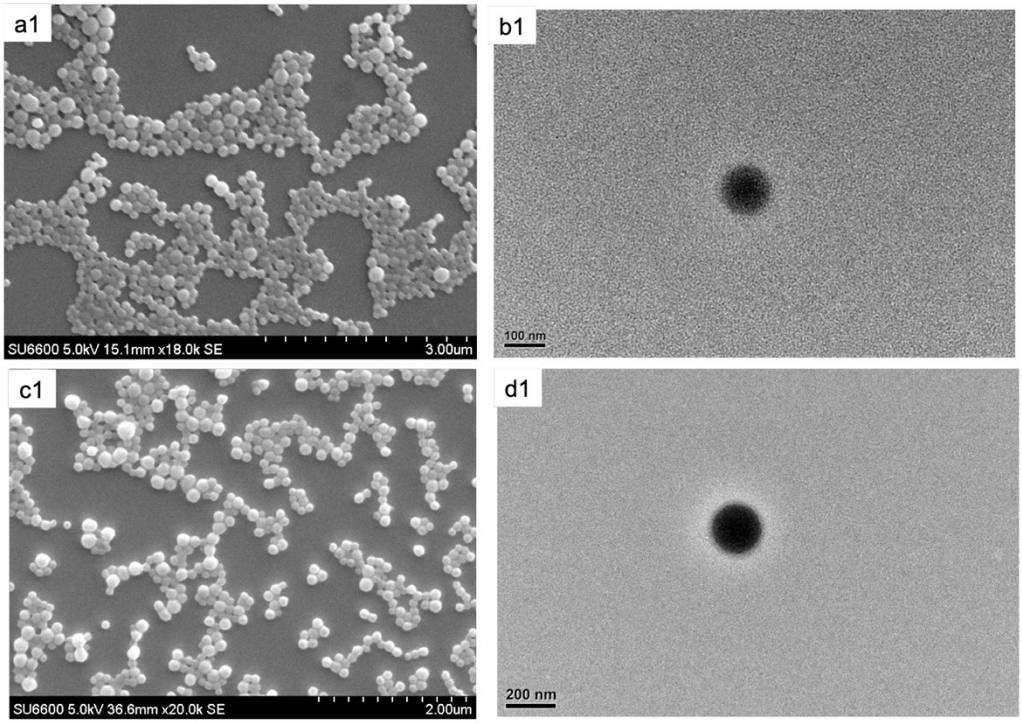

Figure S2. Characterization of Void PLGA and PLGA-MOR NPs by Electron Microscopy: a1, c1) SEM images of Void PLGA and PLGA-MOR NPs (At scale 3 µm & 2 µm). b, d) TEM images of Void PLGA and PLGA-MOR NPs (At scale 100 nm and 200 nm).

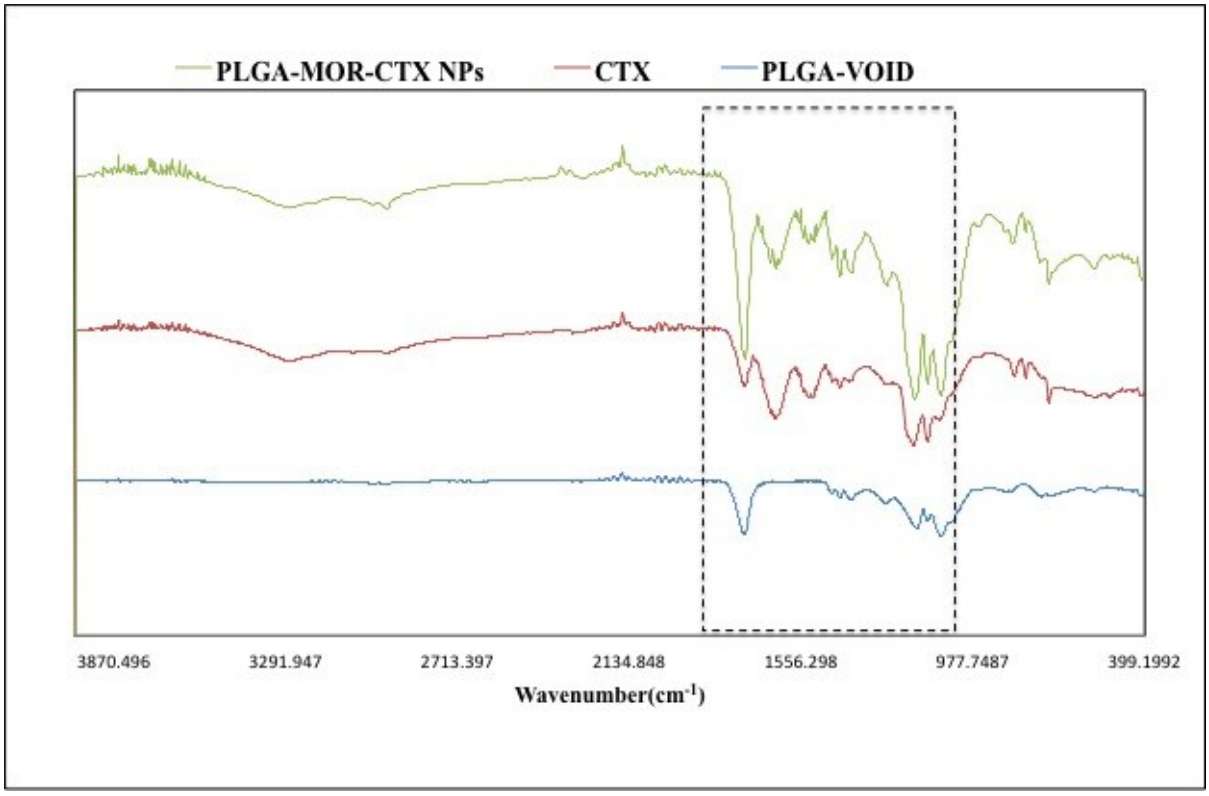

Figure S3. ATR-FTIR analysis of free CTX, PLGA-VOID and PLGA-MOR CTX NPs confirming the conjugation of CTX to NPs.

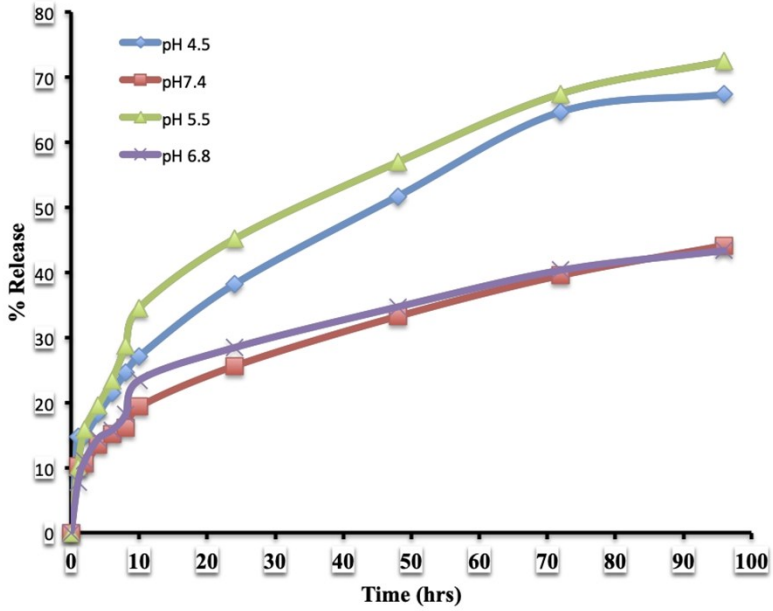

Figure S4. Drug release studies. *In vitro* drug release of morusin from PLGA-MOR-CTX NPs in pH 4.5, 5.5, 6.8 and 7.4 PBS buffer, 37°C for 96 h time period.

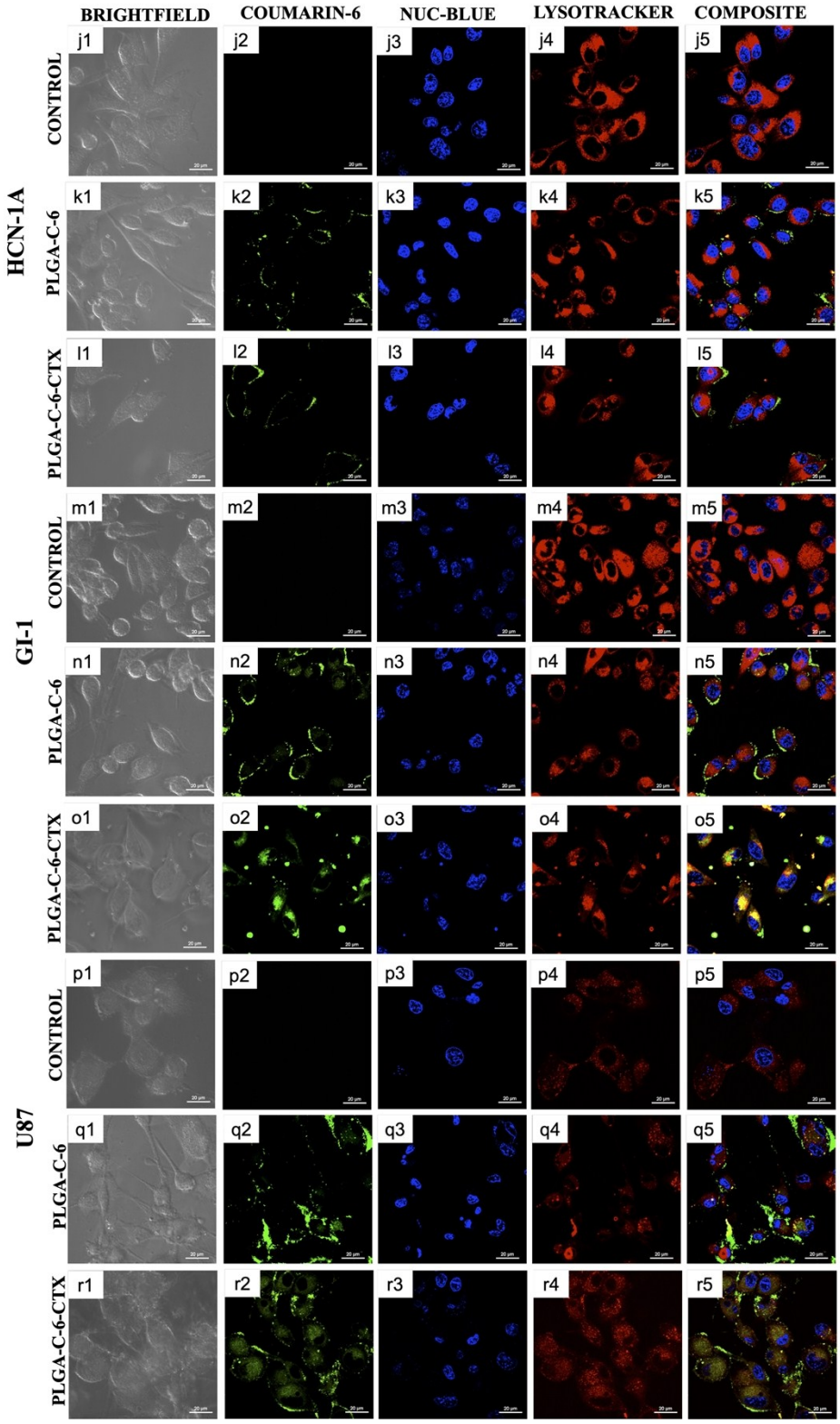

Figure S5. CLSM images representing whether the excreted MMPs influence the GBM cell targeting capacity of CTX modified nanoparticles. Nuclei were stained using NucBlue and lysosomes using lysotracker deep red to display nanoparticles co-localization. Scale bars represent 20 µm.

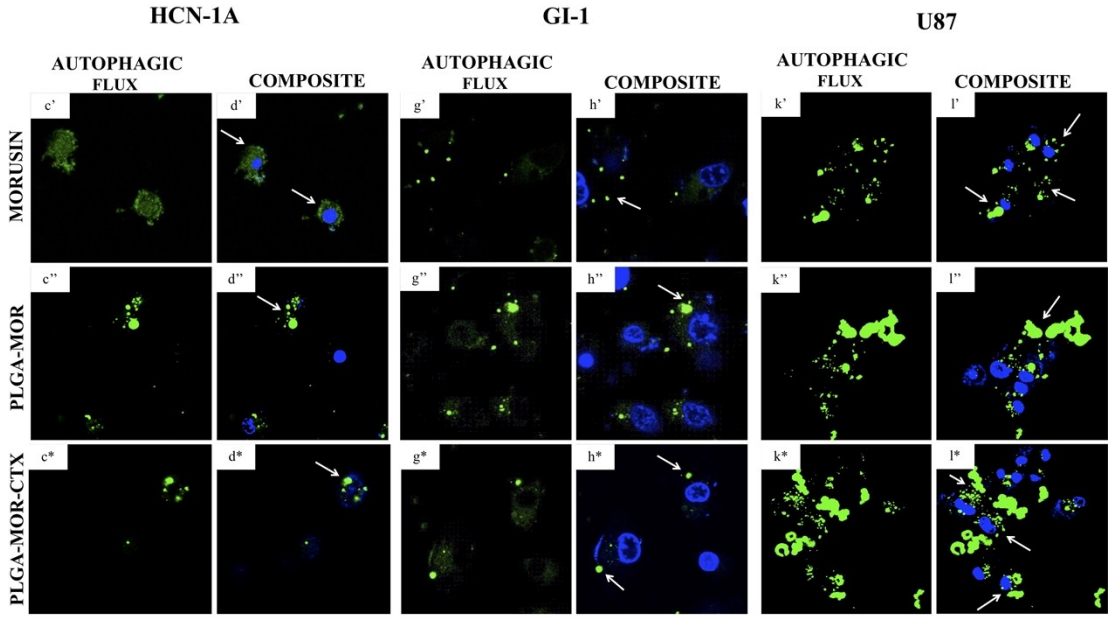

Figure S6. Magnified images for figure 12. autophagy analysis. Autophagic flux and autophagosome formation as pointed by arrows in HCN-1A, GI-1 and U87 cells.