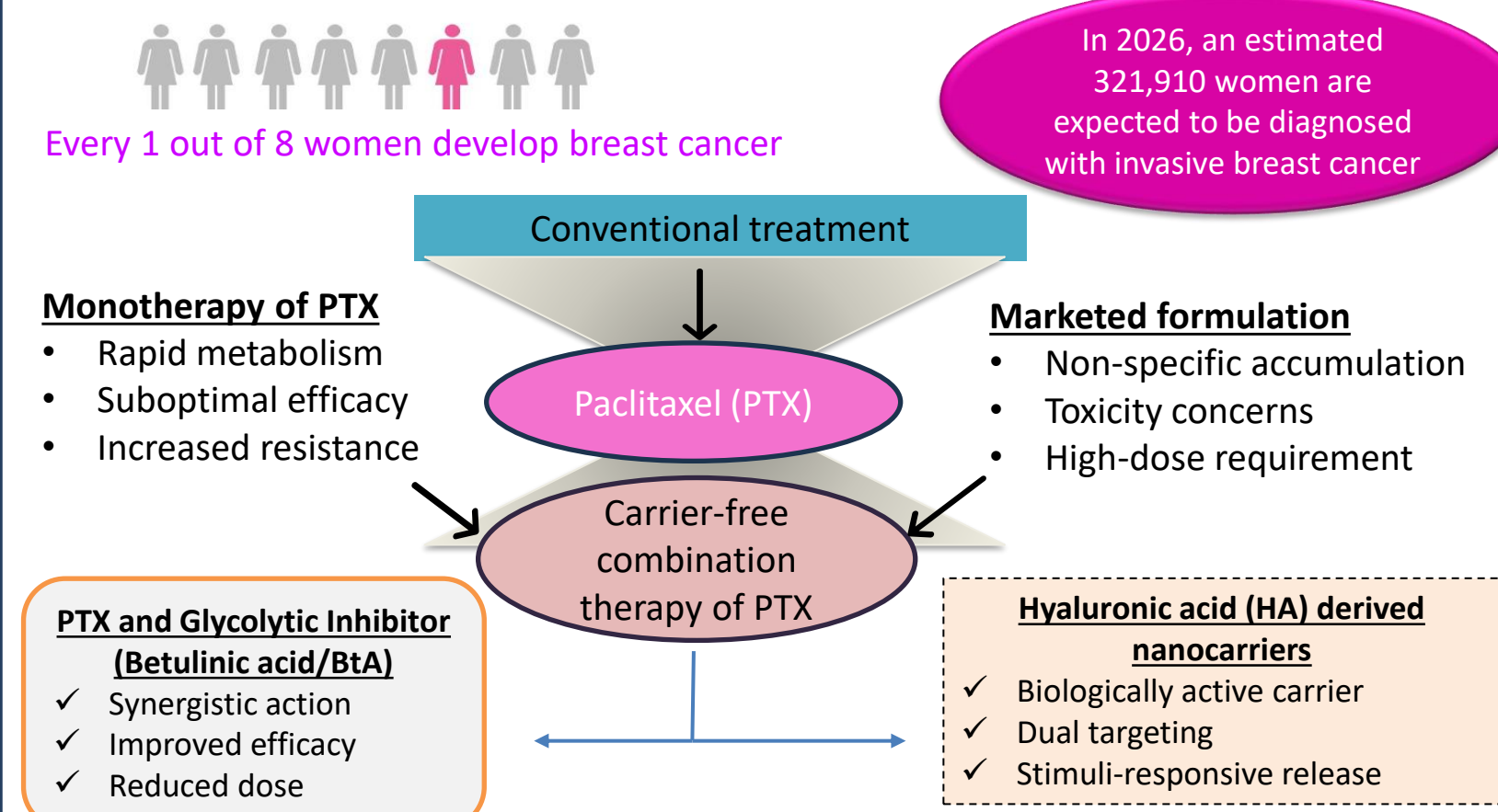
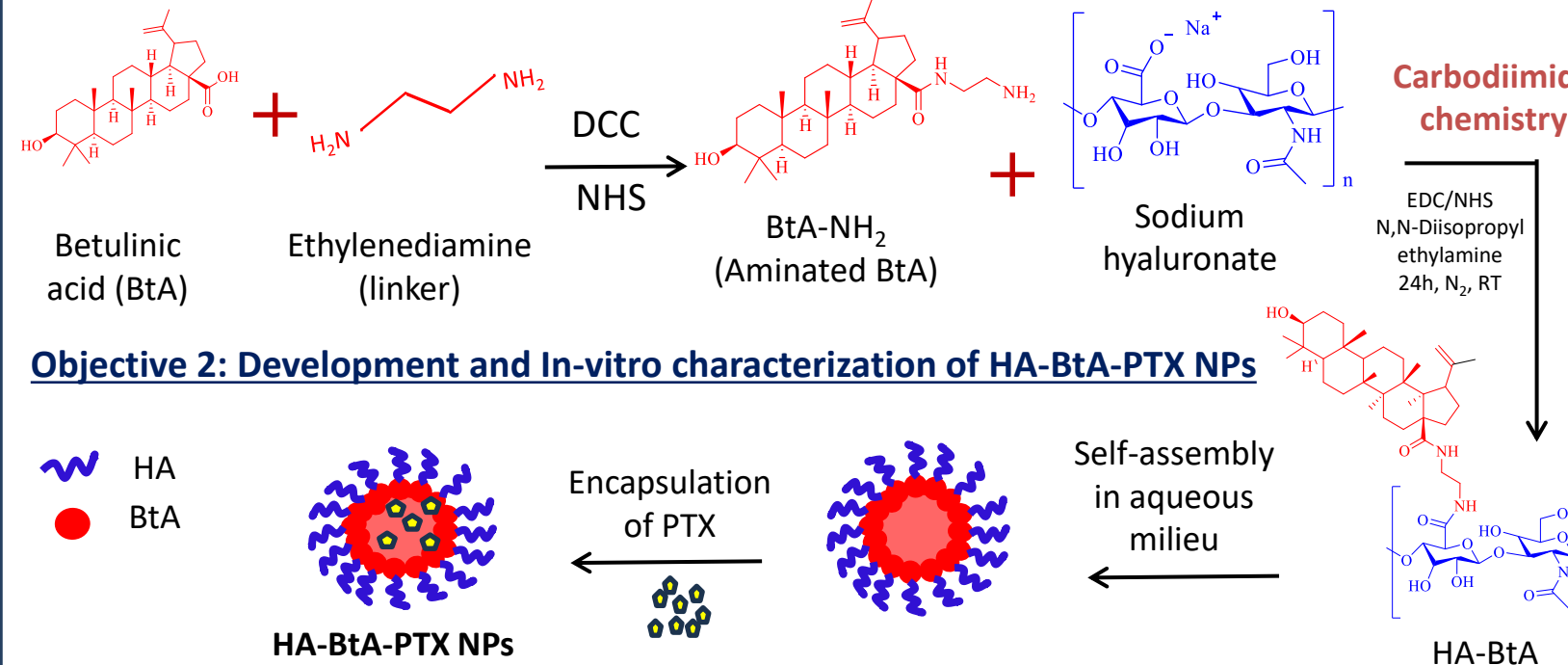


INTRODUCTION & BACKGROUND



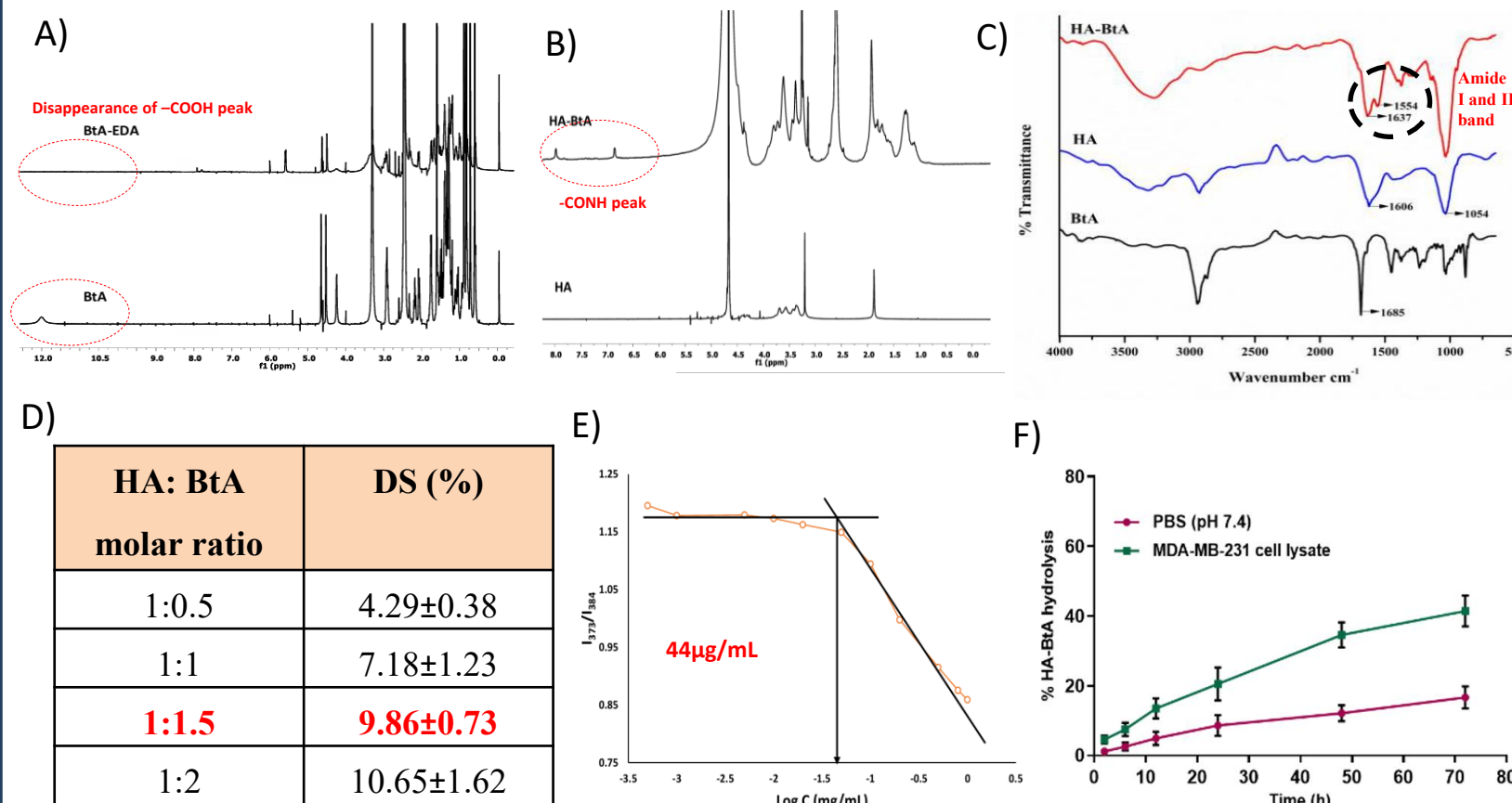
OBJECTIVE(S) & METHOD(S)

Objective 1: Synthesis of HA-BtA amphiphilic conjugate



RESULTS & DISCUSSION

Figure 1. panel depicts ¹H NMR spectra of A) BtA-NH₂ and B) HA-BtA conjugate, C) FT-IR spectra of HA-BtA conjugate; D) Determination of degree of substitution, E) Critical aggregation concentration, F) Hydrolytic stability of HA-BtA



FORMULATION DEVELOPMENT

Figure 2. A) Formulation development B) Optimization of HA-BtA-PTX NPs C) Optimized parameters and quality attributes D) Morphological assessment E) Dilution study

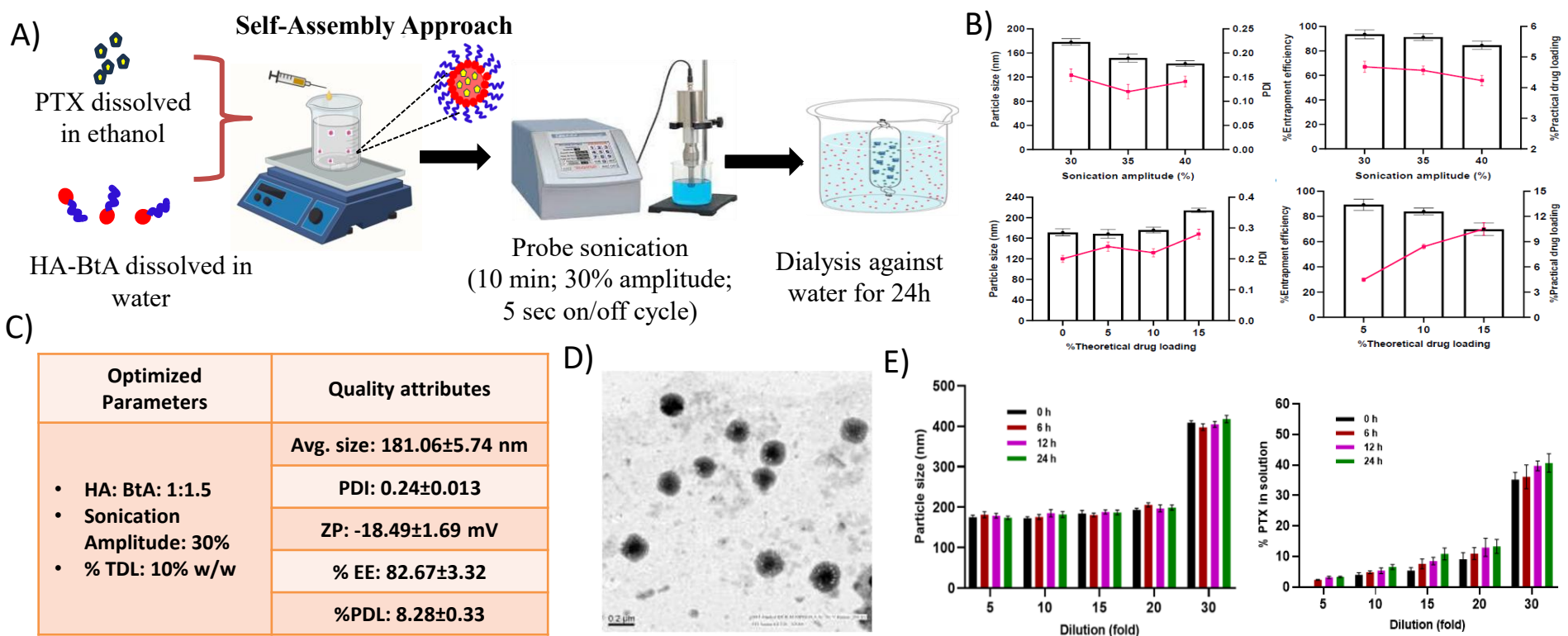


Figure 3. A) In-vitro release and B) Stability Evaluation of optimized HA-BtA-PTX NPs

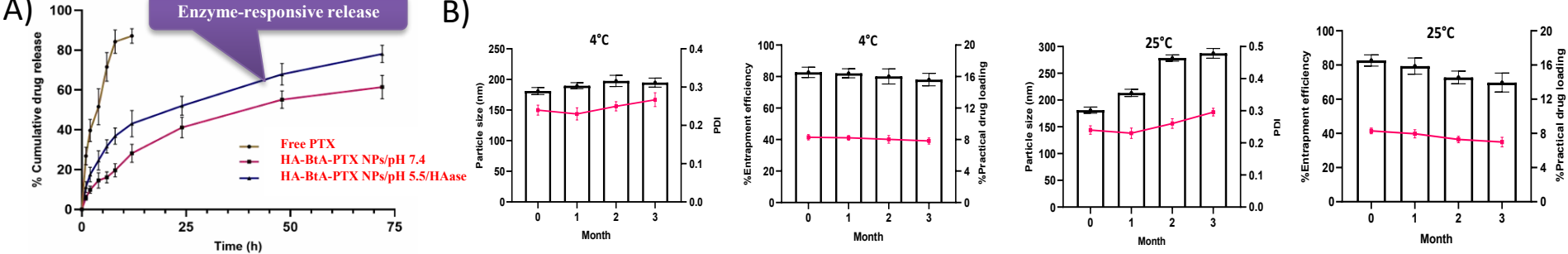


Figure 4. A) Determination of synergism and B) Qualitative cellular uptake in TNBC Cells

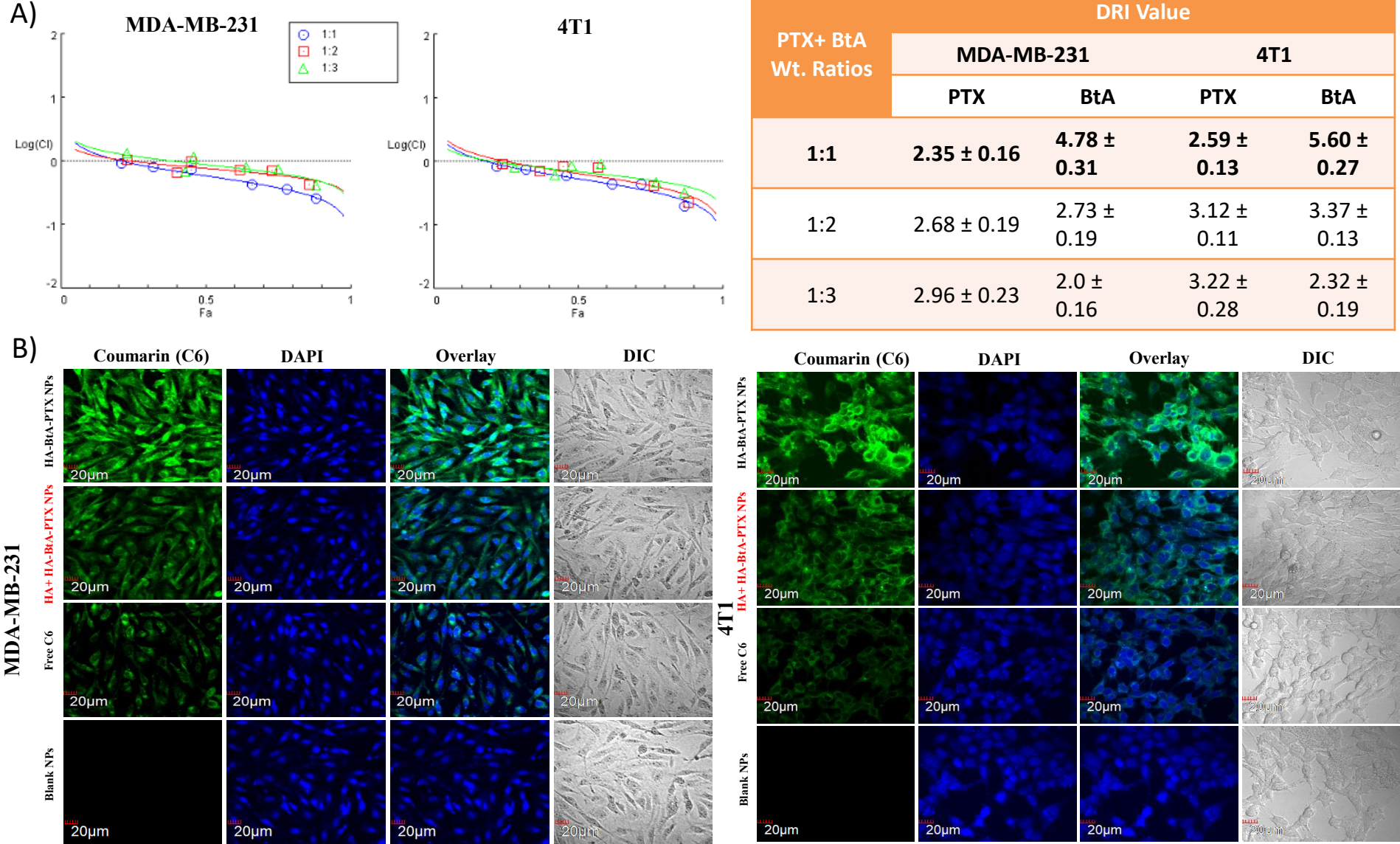


Figure 5. Quantitative uptake

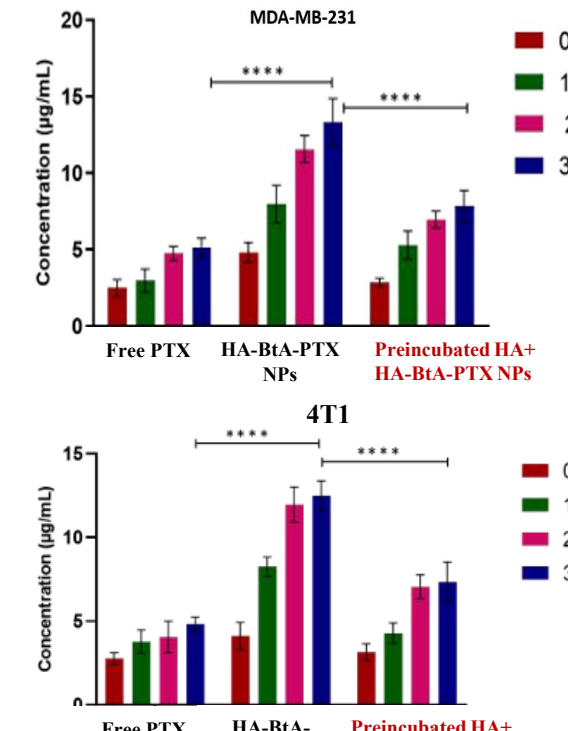
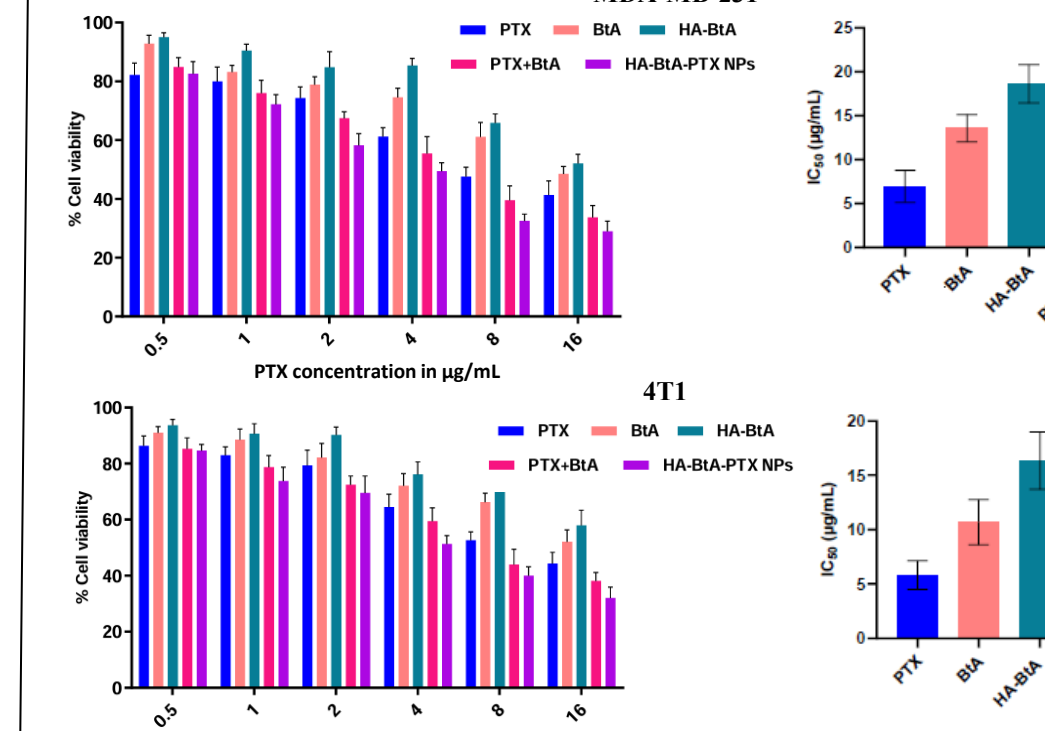


Figure 6. Cytotoxicity study and determination of IC₅₀



CELL CULTURE STUDIES

Figure 7. A) Apoptosis assay and B) Mitochondrial membrane potential (JC-1) assay

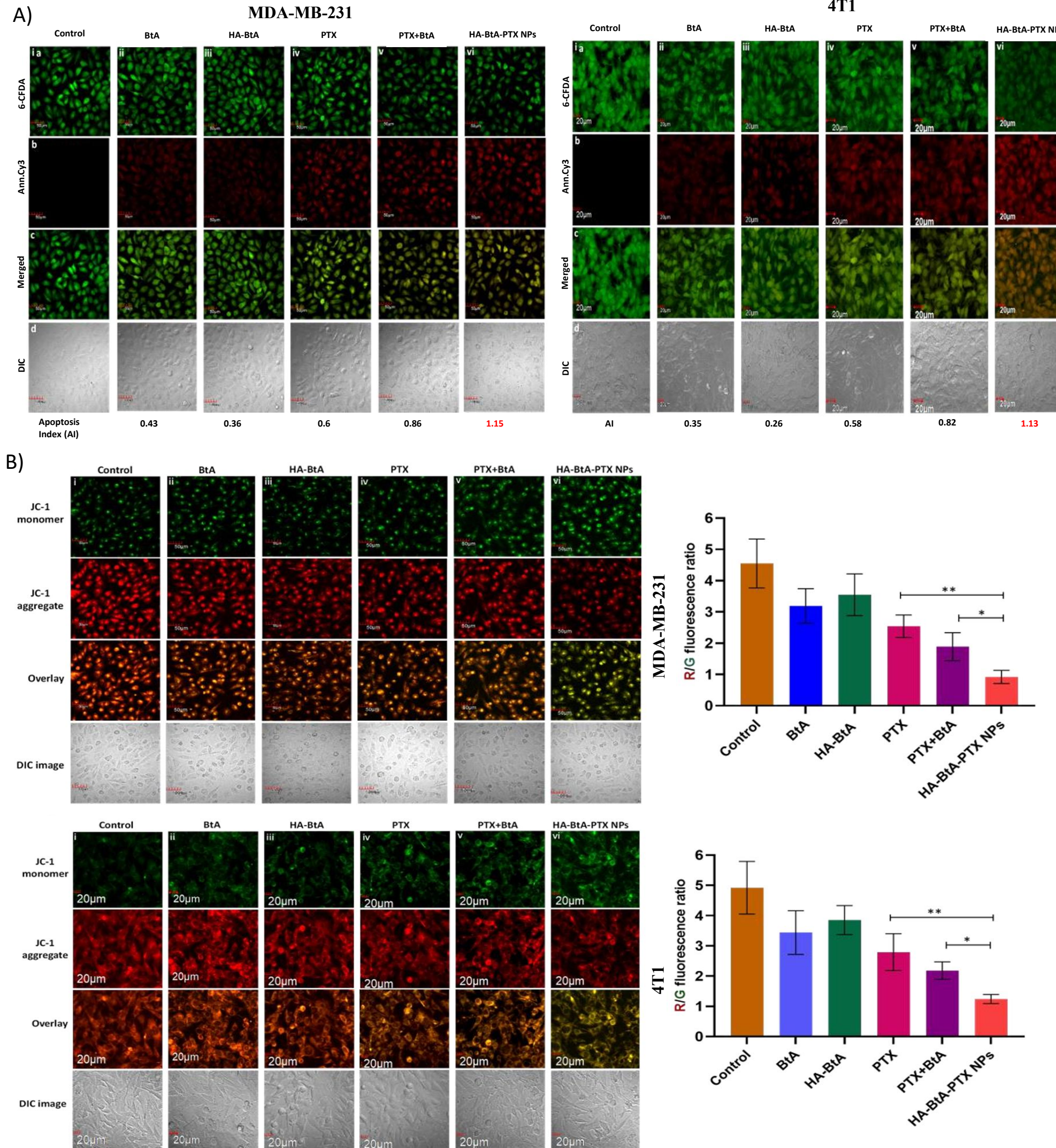
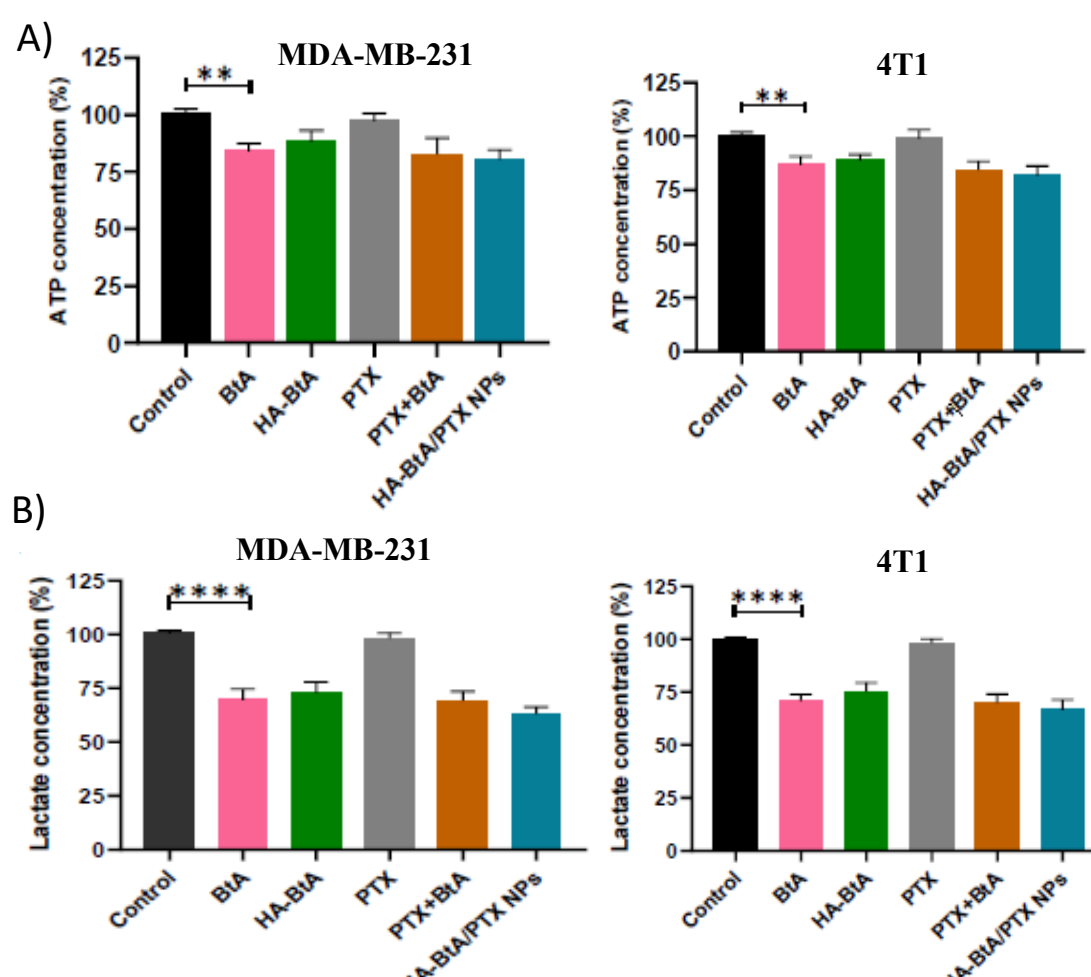


Figure 8. Assessment of glycolytic inhibition A) ATP levels and B) Lactate levels



IN-VIVO ASSESSMENT

Figure 10. Anti-cancer efficacy study in 4T1-based TNBC Model

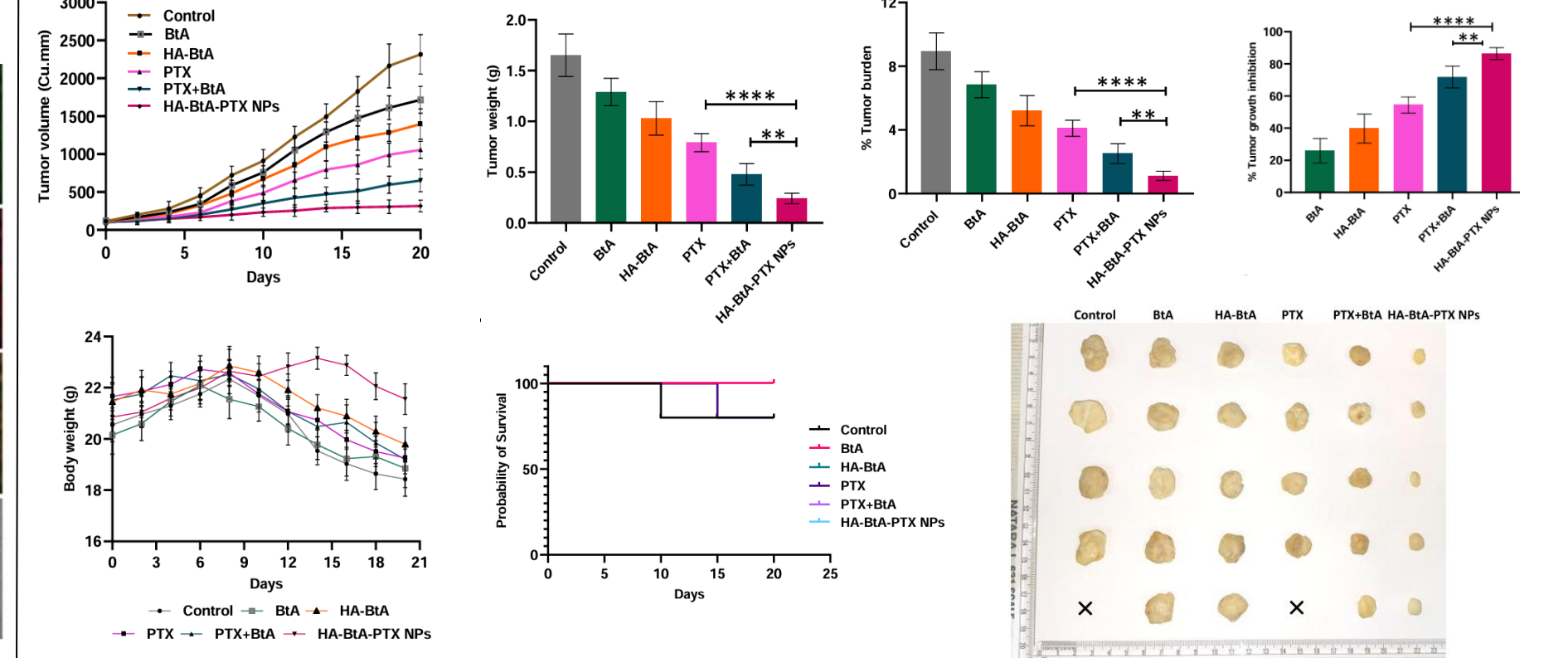
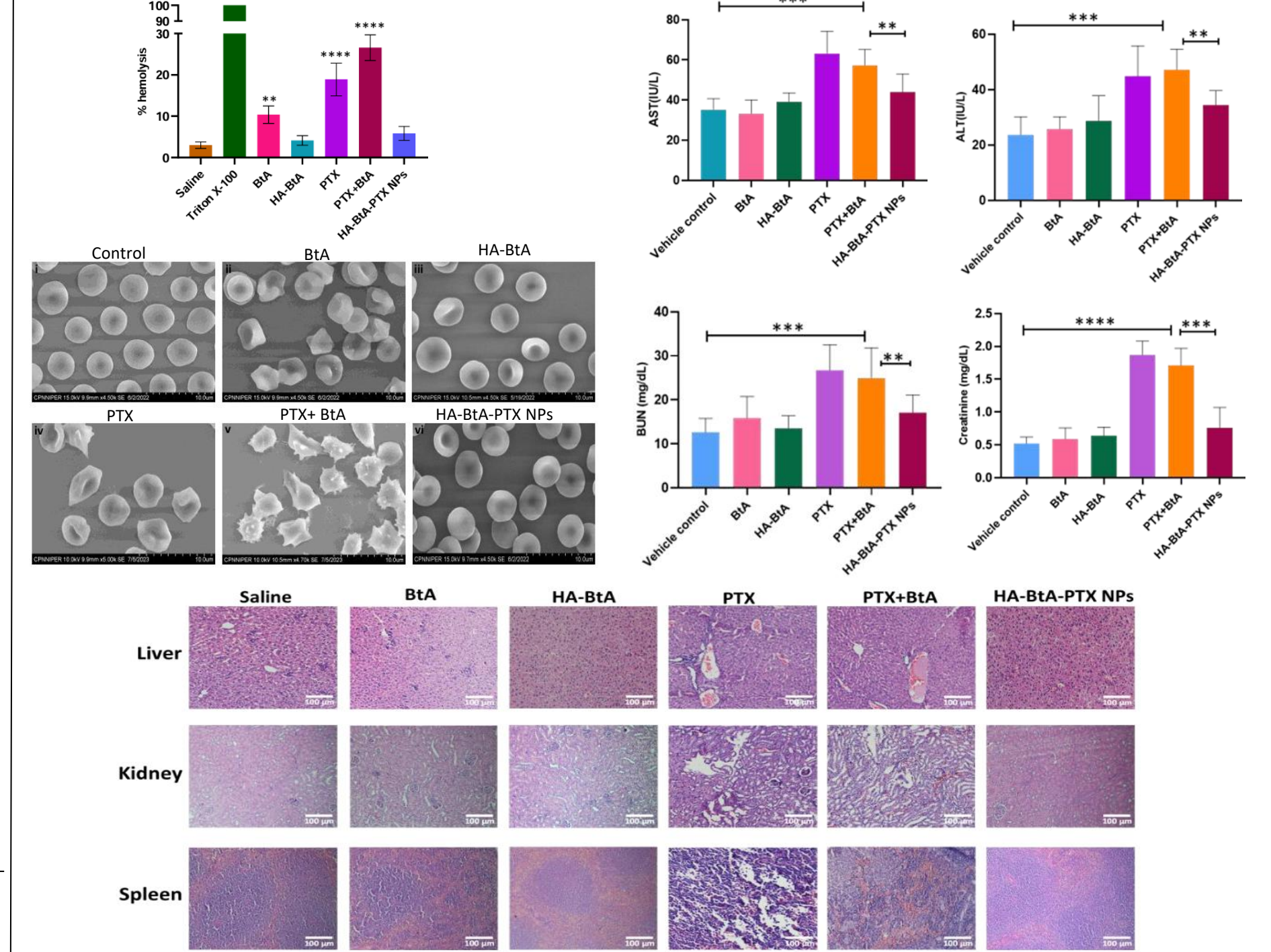


Figure 11. In-vitro and in-vivo toxicity study



Key Findings

- ❖ Synergistic PTX-BtA combination enhanced anticancer efficacy
- ❖ Bioactive HA-BtA served as both carrier and therapeutic
- ❖ HA-BtA-PTX NPs displayed CD-44-based targeting and stimuli-responsive behaviour
- ❖ Carrier-free self-assembled nanoplatform reduced excipient burden
- ❖ Potential to improve the therapeutic index of chemotherapeutics and serve as a promising platform for translational cancer nanotherapy

References & Acknowledgement

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Lee et al. Acta Biomater. 2017; 262-273
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