

Self-Immunomodulatory Nanoparticles for the Locoregional Treatment of Glioblastoma

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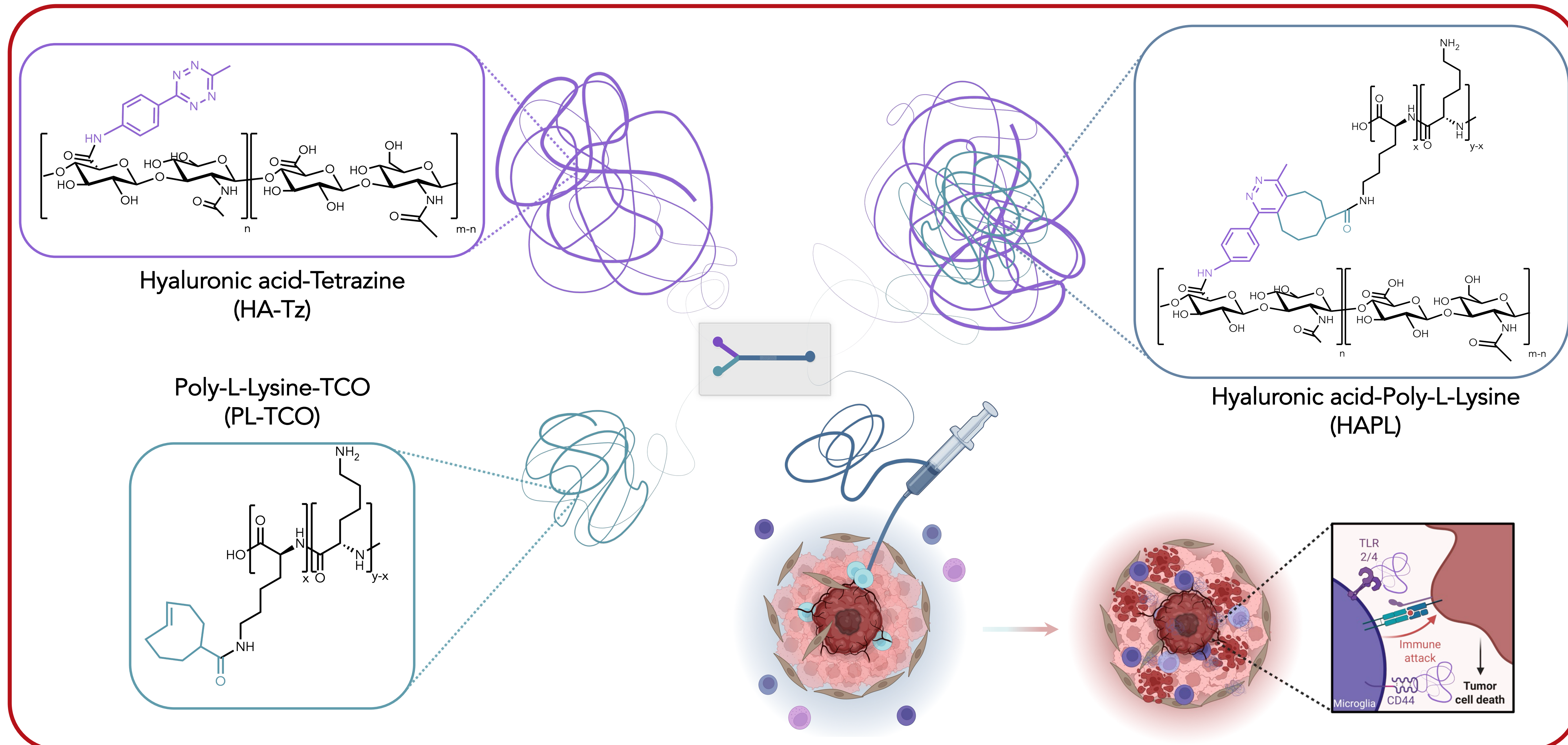
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Introduction

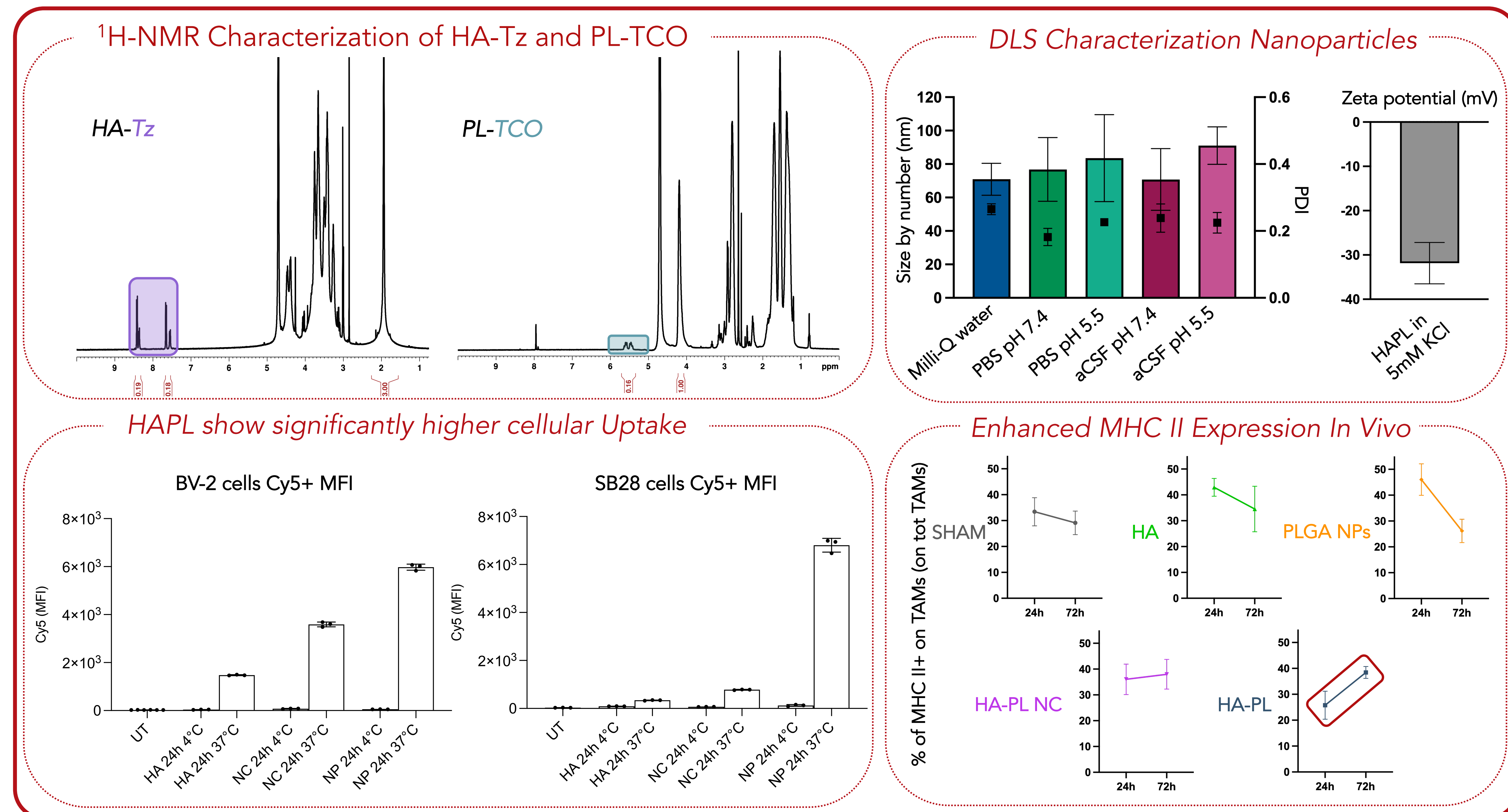
Glioblastoma (GBM) is the most common primary malignant brain tumor in adults and remains associated with poor prognosis and limited treatment options. A major obstacle to therapy is the immunosuppressive tumor immune microenvironment (TIME), enriched in M2-like tumor-associated macrophages (TAMs) [1].

To overcome this challenge, we developed crosslinked hyaluronic acid/poly-L-lysine nanoparticles (HAPL) for local drug delivery in GBM. Beyond drug delivery, these NPs may exert intrinsic immunomodulatory activity through HA-mediated CD44/TLR2/4 signaling and enhanced brain penetration promoted by poly-L-lysine [2,3].

AIM and methods



Results



Conclusions

HAPL nanoparticles represent a stable and reproducible platform for local GBM treatment with intrinsic immunomodulatory potential. In vivo studies in SB28 tumor-bearing mice demonstrated their ability to modulate the tumor microenvironment, supporting their therapeutic relevance in GBM. Future work will investigate drug-loaded HAPL NPs to further improve antitumor efficacy.

References

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Acknowledgments

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