The majority of anticancer drugs in clinical use have their ability limited by their toxicity to all proliferating cells and/or the inability to exert their effect on all of the tumor cells. Novel agents continue to be developed with unique mechanisms of action meant to provide increased targeting, however, many of these compounds still lack absolute tumor selectivity and continue to be limited in their therapeutic utilization due to off-target effects. Phospholipid ether delivery vehicle shows specificity for a broad range of tumor cells and provides a novel and improved approach for targeted therapy.

CONCLUSIONS

Prodrug phospholipid ether molecules demonstrate ability to target a wide range of tumors.
- PDCs show ability to achieve uptake of 20-50% of exposed drug into tumor cells.
- PDC uptake has been confirmed to be linked to lipid rafts on tumor cell membrane.
- Various tumor cell lines were incubated with different PDCs and then detected with an Alexa-Fluor 488 filter.
- PDC uptake initiating within 30 mins. 20-50% of payload released in media within 24 hrs.

REFERENCES

2. Propantheline.
3. et al. J. of Pharma & Exp. Thera. 2018
4. et al. Bioscience Reports. 2019
6. Both PDCs showed good plasma stability in human plasma.
7. PDC-SM3 showed some instability in mouse plasma which could result in some toxicity.
8. In vivo Efficacy with Cytotoxic Payloads

In vivo Tolerability with Cytotoxic Payloads

In vitro Efficacy with Cytotoxic Payloads

In vitro Uptake & Release with Cytotoxic Payload

In vitro Uptake & Release Results (Fluorescent PDCs)

In vitro Targeting Results (Fluorescent PDCs)

In vivo Targeting Results (Fluorescent PDCs)

ABSTRACT

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