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COPOLYMER DRUG DELIVERY SYSTEM FOR ANTIANGIOGENETIC THERAPIES

THERAPEUTICS

Angiogenesis inhibitors conjugated to polymers that are useable as a therapy for breast or prostate cancer.

TECHNOLOGY TYPE

Drug Delivery
Small Molecule
Oncology
Combined Therapy

STAGE OF DEVELOPMENT

Feasibility has been demonstrated in cell culture systems.

IP PROTECTION

Nationalized PCT Issued in the United States

Conjugate of a polymer, an anti-angiogenesis agent, and a targeting moiety, and uses thereof in treatment of bone related angiogenesis conditions
US8703114B2

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Reference Number: U-4413

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TECHNOLOGY SUMMARY

Recent studies show that amino bisphosphonates, such as alendronate (ALN), inhibit angiogenesis. Additionally, polymer-drug conjugates have been shown to increase the half-life of low molecular weight drugs, water solubility, and tumor accumulation.

The proposed technology is a combined targeted therapy made by conjugating angiogenesis inhibitors ALN and TNP-470 to a copolymer backbone. In vitro studies provide evidence that this copolymer-drug conjugate targets both tumor epithelial and endothelial compartments. These results indicate that the proposed technology represents a promising therapy for osteosarcomas and bone metastases.

FEATURES AND BENEFITS

- Increases half-life and tumor accumulation of cancer fighting drugs.
- Reduces side effects.
- Decreases required dose necessary to treat the tumor.
- Shows potential for use as a conjugate for other drugs to the same polymer.

RECENT PUBLICATIONS

Yang, J., Zhang, R., Pan, H., Li, Y., Fang, Y., Zhang, L., Kopecek, J. (2017). Backbone degradable n-(2-hydroxypropyl)methacrylamide copolymer conjugates with gemcitabine and paclitaxel: impact of molecular weight on activity toward human ovarian carcinoma xenografts. *Molecular Pharmaceutics*. 14(5):1384-1394. doi: [10.1021/acs.molpharmaceut.6b01005](https://doi.org/10.1021/acs.molpharmaceut.6b01005).

INVENTOR PROFILE

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