



Liposomes Targeted by Anti-EGFR scFv Human Antibody for Treatment of Squamous Cell Carcinoma of Head and Neck

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Experience:

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Market Needs:

Our Technology:

In this study, we generated fully human anti-EGFR scFv-conjugated ligand-targeting liposomes (LTL) containing doxorubicin and vinorelbine and tested their anti-neoplastic efficacy in vitro and in vivo. Our LTL enhanced endocytosis and reduced the half maximal inhibitory concentrations of therapeutic payloads when compared to non-targeting liposomal counterparts in SCCHN cell lines. Furthermore, median survival time was significantly prolonged in subcutaneous and orthotopic SCCHN xenograft murine models treated with our LTL formulation than those treated with non-targeting counterpart (94 days versus 60 days and 72 days versus 56 days, respectively) without evident increased systemic toxicity. These data indicated the therapeutic index of the chemotherapeutic payloads was augmented by our EGFR-targeting LTL formulation and they are warranted for further development and preclinical trial.

Strength:

1. The anti-EGFR scFv is from the naïve human scFv library. This will evade human anti-mouse antibody (HAMA) immune response.
2. Novel CDRs sequence will be patentable.
3. The anti-EGFR scFv can direct chemotherapeutic drugs to high EGFR-expressing tumor tissue in vivo, improving therapeutic efficacy and reducing toxicity for normal tissue compared to conventional chemotherapy.
4. Targeting to EGFR can apply for multiple types of cancer.
5. The scFv can be engineered to intact therapeutic human IgG.
6. The anti-EGFR scFv can cross-react to mouse EGFR and is good for evaluation of side effects.

Competing Products:

Intellectual Properties:

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