

Efficacy of a single-dose injection of CLR 131 (1-131-CLR1404) in a Caki-2 athymic nude mouse model.

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Abstract Disclosures

Background:

CLR 131 is a novel radioiodinated therapeutic that exploits the selective uptake and retention of phospholipid ethers (PLEs) by malignant cells. Study was to evaluate the therapeutic effect of CLR 131 when administered as a single dose intravenous injection in Caki-2 tumor bearing mice. Caki-2 cell line is a human clear cell renal cell carcinoma (CCRCC). Print

Methods:

The Caki-2 cell line (human clear cell carcinoma) was purchased from American Type Culture Collection (ATCC, Rockville, MD) and maintained in McCoy's 5a media supplemented with 10% fetal bovine serum. Female athymic nude mice (Hsd: Athymic Nude-Foxn1nu); 4-5 weeks of age, 16-18 g (Harlan, Indianapolis, IN) were injected subcutaneously with 1×10^6 viable cells (in 100 μ L Dulbecco's PBS) into the right flank. The study was initiated when tumor size had reached a pre-determined size (100-250 mm^3). The mice were given potassium iodide at a concentration of 0.1% in their drinking water to block possible free iodide in the drug formulation. A single dose of $\sim 110 \mu\text{Ci}$ of CLR 131 was given at Day 0 (N = 6 per group). A control dose of I-127-CLR1404 was given at $\sim 110 \mu\text{Ci}$ dose and was injected via tail vein on Day 0.

Results:

Tumor growth of the treatment group was significantly inhibited. The control group showed exponential growth after day 20 post-injection while the treatment group maintained the initial tumor volume up to day 75 post injection. By day 65, the control group increased 10.75-fold compared to the treatment group in average tumor volume. CLR 131 provides survival benefit for Caki-2 bearing mice. Kaplan Meier survival showed significant survival benefit with this model.

Conclusions:

The results of the study indicate that a single dose of CLR 131 on Caki-2 tumor bearing model showed a significant inhibition of tumor growth as well as significant survival benefit.

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