Efficacy of a repeat dose injection of CLR 131 (I-131-CLR1404) in U87-MG tumor-bearing athymic nude mice.

Authors:
Katherine Oliver, Jarrod Longcor, Irawati Kandela; Cellectar Biosciences, Madison, WI

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 repeat dose intravenous injection in U87-MG tumor bearing mice. Malign[illegible] Print gliomas are associated with a low survival rate, and treatment with chemotherapy, external beam radiation, or surgery have shown limited effectiveness. In this study, therapeutic effect was evaluated by measurement of tumor volume increase and by survival of CLR 131 treated animals compared to animals dosed with a I-127-CLR1404 control.

Methods:
The U87-MG cell line (human glioma) was purchased from American Type Culture Collection (ATCC, Rockville, MD) and maintained in MEM media supplemented with 10% fetal bovine serum. Twenty female athymic nude mice (Harlan, Indianapolis, IN) weighing between 16-20 g were anaesthetized with isofluorene and inoculated subcutaneously in the right flank with 1 x 10^6 U87-MG tumor cells suspended in 50 µL PBS. 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, with the addition of 0.4% (w/v) sweetener (Sweet and Low) to aid palatability, three days prior to injection and continuing through two weeks post injection. Doses of 95.7µCi and 109.0 µCi of CLR 131were given at Day 0 and Day 7 (N = 8 per group). Control doses of I-127-CLR1404 were given at the indicated dose and was injected via tail vein on Day 0 and Day 7.

Results:
The control group's tumors increased 25-fold over a period of four weeks and the treatment group's tumors increased 12-fold over the same period. There was a significant difference between the control

and treatment tumor volumes. Mean survival time was 24.5 days and 31.9 days post injection, respectively.

Conclusions:

CLR 131 represents a unique, first in class targeted radiotherapeutic currently in clinical development. This study shows that CLR 131 dosed twice provides significant inhibition of tumor growth in a U87-MG tumor model which is known for very aggressive growth. Additionally, CLR 131 provided an overall survival benefit over the control group.