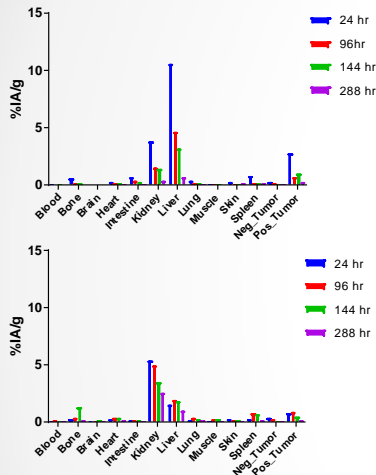
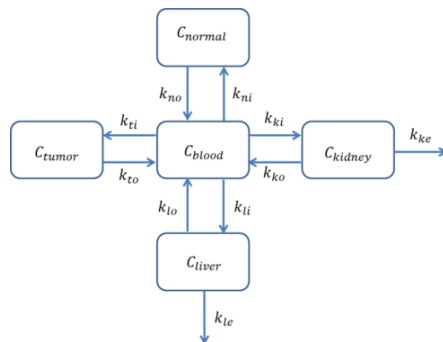


# BIODISTRIBUTION AND PHARMACOKINETIC ANALYSIS OF A TARGETED ALPHA PARTICLE THERAPY



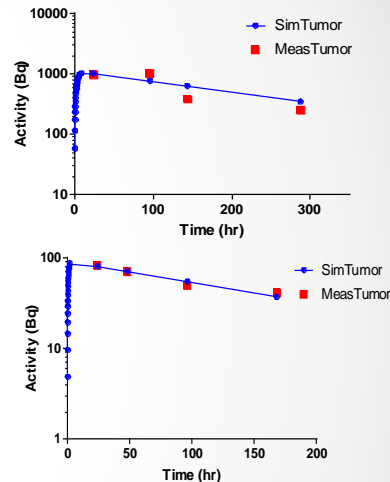
Biodistribution data for two versions of the radiopharmaceutical under development



Schematic of the multi-compartmental pharmacokinetic model

$$\begin{aligned} \frac{dC_{tumor}}{dt} &= k_{ti}C_{blood} - k_{to}C_{tumor} \\ \frac{dC_{normal}}{dt} &= k_{ni}C_{blood} - k_{no}C_{normal} \\ \frac{dC_{kidney}}{dt} &= k_{ki}C_{blood} - k_{ko}C_{kidney} - k_{ke}C_{kidney} \\ \frac{dC_{liver}}{dt} &= k_{li}C_{blood} - k_{lo}C_{liver} - k_{le}C_{liver} \\ \frac{dC_{blood}}{dt} &= -(k_{ti}C_{blood} - k_{to}C_{tumor}) - \\ &\quad (k_{ni}C_{blood} - k_{no}C_{normal}) - \\ &\quad (k_{ki}C_{blood} - k_{ko}C_{kidney} - k_{ke}C_{kidney}) - \\ &\quad (k_{li}C_{blood} - k_{lo}C_{liver} - k_{le}C_{liver}) \end{aligned}$$

System of ordinary differential equations describing the model



Optimized fitting of compartment solutions

PRESENTED BY CHRISTOPHER TICHACEK, M.S.

BRACHYTHERAPY AND RADIONUCLIDE THERAPY

WEDNESDAY, AUGUST 1, 2018, 7:30AM – 9:30AM

DAVIDSON BALLROOM A