Experiment Number: K3056175
Route: Gavage
Species/Strain: Mouse/C57BL/6J

Toxicokinetics Data Summary
Compound: 2',3'-Didehydro-3'-deoxythymidine
Analyte: 2',3'-Didehydro-3'-deoxythymidine
CAS Number: 3056-17-5

Request Date: 7/11/2023
Request Time: 10:03:16
Lab: RTI

Female

Treatment Group (mg/kg)

500 Gavage Plasma[a]

C_0min_pred (%Dose/mL)	6.674 ± 2.216
Cmax_pred (%Dose/mL)	4.066
Tmax_pred (minute)	16.26
Cmax_obs (%Dose/mL)	5.731
Tmax_obs (minute)	18.00
Half-life (minute)	33.75
k01 ($minute^{-1}$)	0.1375 ± 0.0646
k10 ($minute^{-1}$)	0.02054 ± 0.00739

LEGEND

MODELING SOFTWARE

ADAPT II

MODELING METHOD & BEST FIT MODEL

[a]ADAPT II running on a VAXstation 3100 Model 48, one-compartment open model with first order absorption

ANALYTE

2',3'-Didehydro-3'-deoxythymidine

TK PARAMETERS

C_0min_pred = Fitted plasma concentration at time zero (IV only)
Cmax = Observed or Predicted Maximum plasma (or tissue) concentration
Tmax = Time at which Cmax predicted or observed occurs
Half-life = Lambda z Half life, t 1/2, the terminal elimination half-life based on non-compartmental analysis
k01 = Absorption rate constant, ka
k10 = Elimination rate constant from the central compartment also ke or kelim

TK PARAMETERS PROTOCOL

ANALYSIS METHOD

The plasma concentration data were analyzed using ADAPT II running on a VAXstation 3100 Model 48. A one-compartment open model with first order absorption was fit to the plasma concentrations expressed as percent of dose per milliliter of plasma (%dose/mL). The mathematical form of this model is Ct=C0 times (e^-kelt - e^-kalphat). Time of maximum concentrations was calculated from fitted parameters as tmax=[ln(kel)-ln(kalpha)]/(kel-kalpha). Cmax was calculated by substituting tmax into the first equation. The elimination half-life (t1/2) was calculated by t1/2=ln(2)/kel.

TK_GAVAGE PLASMA

500 mg/kg Female

Female C57BL/6J mice approximately 8-9 weeks old were administered a single gavage dose of approximately 500 mg/kg (average actual dose was 488.32 plus or minus 7.02 mg) of 3'-Deoxy-2',3'-didehydrothymidine (d4T). Blood was collected pre and post-dose (0 minutes (before dosing), 5, 10, 12, 14, 15, 16, 18, 20, 25, 30, 35, 40, 50, 60, 75, 90, and 120 minutes after dosing n=2 except for 14 and 18 minutes which had n=3). Plasma samples were analyzed by a validated method using HPLC with UV detection (265 nm) and 2',3'-dideoxyuridine as internal standard. Estimated limit of detection is 0.14 ug/mL. Food and water were given ad libitum.