Experiment Number: K08624
Route: IV
Species/Strain: Mice/B6C3F1

Toxicokinetics Data Summary
Compound: Thiodiglycolic Acid / **Analyte:** Thiodiglycolic Acid
CAS Number: 123-93-3

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

Male

	Treatment Group (mg/kg)			
	50 IV Plasma[a]	**50 IV Heart[b]**	**50 IV Thymus[b]**	**50 IV Liver[b]**
Cmax_pred (ug/mL)	124 ± 18			
Cmax_obs (ug/g)		40.4	23.9	78.3
Tmax_obs (min)		3.76	6.93	16.3
Half-Life (min)		92.8	128	51.1
Alpha Half-life (min)	3.80 ± 0.33			
Beta Half-life (min)	72.1 ± 8.1			
k10 (min^{-1})	0.140 ± 0.013			
k10 Half-life (min)	4.97 ± 0.46			
k12 (min^{-1})	0.0399 ± 0.0045			
k21 (min^{-1})	0.0126 ± 0.0014			
Cl (mL/min/kg)	56.3 ± 4.0			
V1 (mL/kg)	403 ± 58			
V2 (mL/kg)	1280 ± 230			
MRT (min)	29.9 ± 3.6			
AUC_0-T (ug/mL*min)	888 ± 63			

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Female

	Treatment Group (mg/kg)			
	50 IV Plasma[a]	**50 IV Heart[b]**	**50 IV Thymus[b]**	**50 IV Liver[b]**
Cmax_pred (ug/mL)	111 ± 11			
Cmax_obs (ug/g)		37.9	38.9	96.6
Tmax_obs (min)		3.89	3.89	16.6
Half-Life (min)		73.4	181	52.0
Alpha Half-life (min)	4.43 ± 0.32			
Beta Half-life (min)	72.2 ± 5.7			
k10 (min^{-1})	0.111 ± 0.008			
k10 Half-life (min)	6.23 ± 0.45			
k12 (min^{-1})	0.0414 ± 0.0041			
k21 (min^{-1})	0.0135 ± 0.0012			
Cl (mL/min/kg)	50.2 ± 2.3			
V1 (mL/kg)	451 ± 46			
V2 (mL/kg)	1380 ± 160			
MRT (min)	36.6 ± 2.9			
AUC_0-T (ug/mL*min)	997 ± 46			

LEGEND

MODELING SOFTWARE

WinNonlin Version 5.0.1

MODELING METHOD & BEST FIT MODEL

[a]WinNonlin, Version 5.0.1, Pharsight Corporation, Mountain View, CA, Two-compartment model with bolus input, first order output, and 1/Yhat2 weighting

[b]Non-compartment model with bolus input, first order output, and uniform weighting.

ANALYTE

Thiodiglycolic Acid

TK_PARMETERS

Cmax = Observed or Predicted Maximum plasma (or tissue) concentration
Tmax = Time at which Cmax predicted or observed occurs
Half-Life = Non-compartmental analysis (NCA) terminal elimination rate constant, NCA ke or kelim
Alpha Half-life = Half-life for the alpha phase
Beta Half-life = Half-life for the beta phase
k10 = Elimination rate constant from the central compartment also ke or kelim
k10 Half-life = Half-life for the elimination process from the central compartment
k12 = Distribution rate constant from first to second compartment
k21 = Distribution rate constant from second to first compartment
Cl = Clearance, includes total clearance

TK PARAMETERS PROTOCOL

TK_PARAMETERS (cont'd)

V1 = Volume of distribution of the central compartment, includes Vd and V volume of distribution, Vz apparent volume of distribution NCA, Vapp apparent volume of distribution for intravenous studies
V2 = Volume of distribution for the peripheral compartment
MRT = Mean Residence Time
AUC_0-T = Area under the plasma concentration versus time curve, AUC, from time ti (initial) to tf (final), AUClast

ANALYSIS METHOD

Following blood collection, each animals was terminated with CO2 and the heart, thymus, and liver were collected. Blood collection time points for this group are 2, 5, 10, 15, 30, 45, 60, 90, 120, 180, and 240 minutes. Parameter estimates are reported to three significant figures. Non-compartmental analysis does not calculate a standard error.

TK_IV PLASMA

50 mg/kg Male and Female

Animals were given a single bolus injection of Thiodiglycolic acid (TDGA) through a jugular catheter. Concentrations time data sets were evaluated using non-compartmental analysis and, when possible, compartmental models. WinNonlin, Version 5.0.1, Pharsight Corporation, Mountain View, CA

TK PARAMETERS PROTOCOL (cont'd)

TK_IV HEART

50 mg/kg Male and Female

Animals were given a single bolus injection of Thiodiglycolic acid (TDGA) through a jugular catheter. Concentrations time data sets were evaluated using non-compartmental analysis and, when possible, compartmental models. WinNonlin, Version 5.0.1, Pharsight Corporation, Mountain View, CA

TK_IV LIVER

50 mg/kg Male and Female

Animals were given a single bolus injection of Thiodiglycolic acid (TDGA) through a jugular catheter. Concentrations time data sets were evaluated using non-compartmental analysis and, when possible, compartmental models. WinNonlin, Version 5.0.1, Pharsight Corporation, Mountain View, CA

TK_IV THYMUS

50 mg/kg Male and Female

Animals were given a single bolus injection of Thiodiglycolic acid (TDGA) through a jugular catheter. Concentrations time data sets were evaluated using non-compartmental analysis and, when possible, compartmental models. WinNonlin, Version 5.0.1, Pharsight Corporation, Mountain View, CA