Experiment Number: S0571
Route: IV
Species/Strain: Mouse/B6C3F1

Toxicokinetics Data Summary
Test Compound: Naphthalene
CAS Number: 91-20-3

Date Report Requested: 12/27/2016
Time Report Requested: 11:26:45
Lab: Research Triangle Institute

	Male					
	Treatment Groups (mg/kg)					
	3 IV [a]	3 IV [b]	10 IV [a]	10 IV [b]	30 IV [a]	30 IV [b]
	Whole Blood					
Alpha (minute^-1)	0.590 ± 0.14		0.360 ± 0.067		0.199 ± 0.019	
Beta (minute^-1)	0.104 ± 0.021	0.0647	0.0578 ± 0.0089	0.0590	0.0292 ± 0.0086	0.0190
$t_{1/2(Beta)}$ (minute)	6.65 ± 1.3	10.7	12.0 ± 1.9	11.8	23.8 ± 7.0	36.5
k_{10} (minute^-1)	0.407 ± 0.072		0.282 ± 0.050		0.172 ± 0.013	
k_{12} (minute^-1)	0.136 ± 0.054		0.0617 ± 0.016		0.0226 ± 0.0067	
k_{21} (minute^-1)	0.151 ± 0.040		0.0737 ± 0.013		0.0338 ± 0.011	
Cl (mL/min/kg)		104		98.9		64.0
Cl_1 (mL/min/kg)	109 ± 8.3		100 ± 13		74.8 ± 4.0	
V_1 (L/kg)	0.268 ± 0.063		0.354 ± 0.11		0.436 ± 0.050	
V_{ss} (L/kg)	0.509 ± 0.085	0.481	0.650 ± 0.162	0.591	0.727 ± 0.11	0.532
MRT (minute)	4.67 ± 0.59	4.63	6.50 ± 0.88	5.98	9.72 ± 1.4	8.31
AUC_{inf} (ug*min/mL)	38.0 ± 2.9	39.9	96.3 ± 12	97.4	372 ± 20	435

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	Female					
	Treatment Groups (mg/kg)					
	3 IV [a]	3 IV [b]	10 IV [a]	10 IV [b]	30 IV [a]	30 IV [b]
	Whole Blood					
Alpha (minute^-1)	0.371 ± 0.022		0.367 ± 0.38		0.321 ± 0.058	
Beta (minute^-1)	0.0659 ± 0.014	0.082	0.0521 ± 0.0046	0.0511	0.0505 ± 0.0086	0.0421
$t_{1/2(Beta)}$ (minute)	10.5 ± 2.2	8.46	13.3 ± 1.2	13.6	13.7 ± 2.3	16.4
k_{10} (minute^-1)	0.324 ± 0.014		0.287 ± 0.030		0.244 ± 0.040	
k_{12} (minute^-1)	0.0377 ± 0.0072		0.0656 ± 0.0089		0.0614 ± 0.017	
k_{21} (minute^-1)	0.0755 ± 0.017		0.0666 ± 0.0065		0.0666 ± 0.013	
Cl (mL/min/kg)		129		121		81.5
Cl_1 (mL/min/kg)	137 ± 3.3		118 ± 9.0		87.8 ± 9.3	
V_1 (L/kg)	0.423 ± 0.023		0.413 ± 0.073		0.360 ± 0.095	
V_{ss} (L/kg)	0.633 ± 0.051	0.531	0.819 ± 0.12	0.808	0.692 ± 0.15	0.576
MRT (minute)	4.63 ± 0.37	4.13	6.92 ± 0.58	6.68	7.88 ± 1.1	7.07
AUC_{inf} (ug*min/mL)	30.4 ± 0.73	32.4	79.9 ± 6.1	78.2	319 ± 34	344

LEGEND

Data are displayed as mean ± SEM

MODELING METHOD & BEST FIT MODEL

[a] Data were analyzed using a 2-compartment model (Model 8, WinNonlin, Version 1.0 (SCI Software, Morrisville, NC). Blood concentration data were weighted as 1/YHAT, where YHAT is the predicted value of blood concentration at a given time; Best fit two compartment model (WinNonlin, Model 8) with 1/YHAT weighting. Mouse parameter estimates had low standard errors, which indicated that these were relatively stable estimates .

[b] Data were analyzed using a noncompartmental model for iv dosing (Model 201, WinNonlin, Version 1.0 (SCI Software, Morrisville, NC); Not best fit. Noncompartmental analysis 3 mice/dose/sex over 10 time points.

ANALYTE

Naphthalene

TK PARAMETERS

Alpha = Hybrid rate constant of the alpha phase

Beta = Hybrid rate constant of the beta phase

$t_{½(beta)}$ = Half-life for the beta phase

k_{10} = Elimination rate constant from the central compartment also k_e or k_{elim}

k_{12} = Distribution rate constant from first to second compartment etc.

k_{21} = Distribution rate constant from second to first compartment etc.

Cl = Clearance, includes total clearance

Cl_1 = Clearance of central compartment, Cl_{app} or apparent clearance for intravenous groups

V_1 = Volume of distribution of the central compartment, includes V_d and V_{volume} of distribution, V_z apparent volume of distribution NCA, V_{app} apparent volume of distribution for intravenous studies

V_{ss} = Volume of distribution at steady state

MRT = Mean residence time

AUC_{inf} = Area under the plasma concentration versus time curve, AUC, extrapolated to time equals infinity

** END OF REPORT **