

Experiment Number: C06100

Route: Gavage, IV

Species/Strain: Rat/Harlan Sprague-Dawley

Toxicokinetics Data Summary

Test Compound: Perfluorohexane-1-Sulphonic Acid - Potassium Salt

CAS Number: 3871-99-6

Date Report Requested: 01/09/2017

Time Report Requested: 11:25:37

Lab: Battelle Columbus

Male

Treatment Groups (mg/kg)

| | 16 ^a | 16 ^a | 16 ^a | 4 ^b |
|---------------------------------------|-----------------|-----------------|-----------------|--------------------|
| | Brain | Kidney | Liver | Plasma |
| C _{max(pred)} (ng/mL) | | | | 32200 ± 2900 |
| T _{max(pred)} (hour) | | | | 6.90 ± 1.26 |
| C _{max(obs)} (ng/g) | 1800 | 38,100 | 76,700 | |
| T _{max(obs)} (hour) | 12.0 | 12.0 | 6.00 | |
| t _{1/2} (hour) | 184 | 508 | 639 | |
| t _{1/2(Alpha)} (hour) | | | | |
| t _{1/2(Beta)} (hour) | | | | |
| k ₀₁ (hour ⁻¹) | | | | 0.919 ± 0.204 |
| t _{1/2(k01)} (hour) | | | | 0.755 ± 0.168 |
| k ₁₀ (hour ⁻¹) | | | | 0.00164 ± 1.6E-4 |
| t _{1/2(k10)} (hour) | | | | 423 ± 42 |
| k ₁₂ (hour ⁻¹) | | | | |
| k ₂₁ (hour ⁻¹) | | | | |
| Cl ₁ (mL/hr/kg) | | | | |
| Cl _{1(F)} (mL/hr/kg) | | | | 0.201 ± 0.016 |
| V ₁ (mL/kg) | | | | |
| V ₂ (mL/kg) | | | | |
| V _{1(F)} (mL/kg) | | | | 123 ± 11 |
| MRT (hour) | | | | |
| AUC _{0-t} (ng/mL*hr) | | | | 14400000 |
| AUC _{inf} (ng/mL*hr) | | | | 19900000 ± 1600000 |
| F (percent) | | | | 98.0 |

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| | Treatment Groups (mg/kg) | | | | | |
|---------------------------------------|--------------------------|-----------|-----------------|-----------|-------------------|-----------|
| | 16 ^b | | 32 ^b | | 4 IV ^c | |
| | Plasma | | | | | |
| C _{max(pred)} (ng/mL) | 116000 | ± 8000 | 165000 | ± 14000 | 45300 | ± 2600 |
| T _{max(pred)} (hour) | 5.89 | ± 0.82 | 5.28 | ± 0.99 | | |
| C _{max(obs)} (ng/g) | | | | | | |
| T _{max(obs)} (hour) | | | | | | |
| t _{1/2} (hour) | | | | | | |
| t _{1/2(Alpha)} (hour) | | | | | 13.0 | ± 3.8 |
| t _{1/2(Beta)} (hour) | | | | | 811 | ± 154 |
| k ₀₁ (hour ⁻¹) | 1.09 | ± 0.19 | 1.22 | ± 0.28 | | |
| t _{1/2(k01)} (hour) | 0.632 | ± 0.107 | 0.567 | ± 0.129 | | |
| k ₁₀ (hour ⁻¹) | 0.00175 | ± 1.2E-4 | 0.00196 | ± 1.5E-4 | 0.00223 | ± 2.6E-4 |
| t _{1/2(k10)} (hour) | 397 | ± 27 | 354 | ± 28 | 311 | ± 36 |
| k ₁₂ (hour ⁻¹) | | | | | 0.0314 | ± 0.0095 |
| k ₂₁ (hour ⁻¹) | | | | | 0.0204 | ± 0.0070 |
| Cl ₁ (mL/hr/kg) | | | | | 0.197 | ± 0.019 |
| Cl _{1(F)} (mL/hr/kg) | 0.239 | ± 0.014 | 0.376 | ± 0.027 | | |
| V ₁ (mL/kg) | | | | | 88.4 | ± 5.1 |
| V ₂ (mL/kg) | | | | | 136 | ± 27 |
| V _{1(F)} (mL/kg) | 137 | ± 9 | 192 | ± 17 | | |
| MRT (hour) | | | | | 1140 | ± 210 |
| AUC _{0-t} (ng/mL*hr) | 54000000 | | 72900000 | | 14200000 | |
| AUC _{inf} (ng/mL*hr) | 66800000 | ± 3800000 | 85100000 | ± 6000000 | 20300000 | ± 1990000 |
| F (percent) | 82.3 | | 52.4 | | | |

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Female

Treatment Groups (mg/kg)

| | Treatment Groups (mg/kg) | | | |
|---------------------------------------|--------------------------|-----------------|-----------------|-----------------|
| | 16 ^a | 16 ^a | 16 ^a | 4 ^b |
| | Brain | Kidney | Liver | Plasma |
| C _{max(pred)} (ng/mL) | | | | 24900 ± 1300 |
| T _{max(pred)} (hour) | | | | 2.81 ± 0.38 |
| C _{max(obs)} (ng/g) | 1360 | 37,500 | 53,700 | |
| T _{max(obs)} (hour) | 3.00 | 6.00 | 3.00 | |
| t _{1/2} (hour) | 32.9 | 55.5 | 45.2 | |
| t _{1/2(Alpha)} (hour) | | | | |
| t _{1/2(Beta)} (hour) | | | | |
| k ₀₁ (hour ⁻¹) | | | | 1.78 ± 0.30 |
| t _{1/2(k01)} (hour) | | | | 0.389 ± 0.066 |
| k ₁₀ (hour ⁻¹) | | | | 0.0124 ± 3.0E-4 |
| t _{1/2(k10)} (hour) | | | | 55.9 ± 1.6 |
| k ₁₂ (hour ⁻¹) | | | | |
| k ₂₁ (hour ⁻¹) | | | | |
| Cl ₁ (mL/hr/kg) | | | | |
| Cl _{1(F)} (mL/hr/kg) | | | | 1.92 ± 0.09 |
| V ₁ (mL/kg) | | | | |
| V ₂ (mL/kg) | | | | |
| V _{1(F)} (mL/kg) | | | | 155 ± 9 |
| MRT (hour) | | | | |
| AUC _{0-t} (ng/mL*hr) | | | | 2160000 |
| AUC _{inf} (ng/mL*hr) | | | | 2080000 ± 90000 |
| F (percent) | | | | 142 |

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Female

| | Treatment Groups (mg/kg) | | | | | |
|---------------------------------------|--------------------------|----------|-----------------|----------|-------------------|----------|
| | 16 ^b | | 32 ^b | | 4 IV ^c | |
| | Plasma | | | | | |
| C _{max(pred)} (ng/mL) | 83400 | ± 6000 | 118000 | ± 8000 | 60300 | ± 7000 |
| T _{max(pred)} (hour) | 2.24 | ± 0.48 | 1.87 | ± 0.43 | | |
| C _{max(obs)} (ng/g) | | | | | | |
| T _{max(obs)} (hour) | | | | | | |
| t _{1/2} (hour) | | | | | | |
| t _{1/2(Alpha)} (hour) | | | | | 0.699 | ± 0.311 |
| t _{1/2(Beta)} (hour) | | | | | 37.4 | ± 1.0 |
| k ₀₁ (hour ⁻¹) | 2.32 | ± 0.62 | 2.84 | ± 0.81 | | |
| t _{1/2(k01)} (hour) | 0.299 | ± 0.079 | 0.244 | ± 0.070 | | |
| k ₁₀ (hour ⁻¹) | 0.0132 | ± 4.0E-4 | 0.0145 | ± 4.0E-4 | 0.0412 | ± 0.0050 |
| t _{1/2(k10)} (hour) | 52.6 | ± 1.4 | 47.6 | ± 1.2 | 16.8 | ± 2.0 |
| k ₁₂ (hour ⁻¹) | | | | | 0.522 | ± 0.272 |
| k ₂₁ (hour ⁻¹) | | | | | 0.446 | ± 0.177 |
| Cl ₁ (mL/hr/kg) | | | | | 2.73 | ± 0.13 |
| Cl _{1(F)} (mL/hr/kg) | 2.46 | ± 0.15 | 3.84 | ± 0.24 | | |
| V ₁ (mL/kg) | | | | | 66.3 | ± 7.6 |
| V ₂ (mL/kg) | | | | | 77.6 | ± 10.8 |
| V _{1(F)} (mL/kg) | 186 | ± 14 | 264 | ± 20 | | |
| MRT (hour) | | | | | 52.7 | ± 1.3 |
| AUC _{0-t} (ng/mL*hr) | 6510000 | | 8260000 | | 1500000 | |
| AUC _{inf} (ng/mL*hr) | 6520000 | ± 410000 | 8340000 | ± 520000 | 1460000 | ± 70000 |
| F (percent) | 112 | | 71.4 | | | |

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LEGEND

Data are displayed as mean \pm SEM

MODELING METHOD & BEST FIT MODEL

^a WinNonlin, Version 5.0.1, Pharsight Corporation, Mountain View, CA; NCA model with first order input, first order output, and uniform weighting.

^b WinNonlin, Pharsight Corporation, Mountain View, CA; One-compartment model with first order input, first order output, and 1/Yhat2 weighting.

^c WinNonlin, Pharsight Corporation, Mountain View, CA; Two-compartment model with bolus input, first order output, and 1/Yhat2 weighting.

ANALYTE

Perfluorohexane-1-Sulphonic Acid – Potassium Salt

TK PARAMETERS

C_{max} = Observed or Predicted Maximum plasma (or tissue) concentration

T_{max} = Time at which C_{max} predicted or observed occurs

$t_{1/2}$ = λ_{z} half-life, $t_{1/2}$, the terminal elimination half-life based on non-compartmental analysis

$t_{1/2(\alpha)}$ = Half-life for the alpha phase

$t_{1/2(\beta)}$ = Half-life for the beta phase

k_{01} = Absorption rate constant, k_a

$t_{1/2(k01)}$ = Half-life of the absorption process to the central compartment

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

$t_{1/2(k10)}$ = Half-life for the elimination process from the central compartment

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

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

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

$Cl_{1(F)}$ = Apparent clearance of the central compartment, also $Cl_{(F)}$ for gavage groups in non-compartmental model

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_2 = Volume of distribution for the peripheral compartment

$V_{1(F)}$ = Apparent volume of distribution for the central compartment includes $V_{d(F)}$, $V_{(F)}$ for oral groups, and $V_{c(F)}$

MRT = Mean residence time

AUC_{0-t} = Area under the plasma concentration versus time curve, AUC, from time t_i (initial) to t_f (final), AUC_{last}

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

F = Bioavailability, absolute bioavailability

**** END OF REPORT ****