

REPORT TITLE

Endosulfan-14C (Code: AE F002671001E) Toxicokinetics in the Rat Following Repeated daily Oral Administration of 1 mg/kg Bodyweight for up to 28 Days

DATA REQUIREMENT

EPA/OPPTS: 870.7485

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PURPOSE OF SUBMISSION

Data in support of the
Reregistration of Endosulfan

SUBMISSION VOLUME

Volume 2 of 3

STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS

No claim of confidentiality is made for any information contained in this study on the basis of its falling within the scope of FIFRA §10(d)(1)(A), (B), or (C).

Company: Aventis CropScience USA LP

Aventis Representative: Nang-Ly Chow, Ph.D.

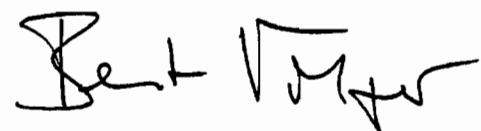
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Date: October 19, 2001

GOOD LABORATORY PRACTICE COMPLIANCE STATEMENT

This study was conducted in compliance with the *Principles of Good Laboratory Practice* as adopted by the Council of OECD on 12 May 1981 [C(81)30 (final)] and implemented at the national level.

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Submitter:

Bert Volger, Ph. D.
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Date:

October 22, 2001

QUALITY ASSURANCE STATEMENT

Inspections were made by the Quality Assurance Unit (QAU) of AgrEvo UK Limited at intervals adequate to ensure the integrity of the study. In the case of repetitive continuing operations, "process-based" inspections of critical procedures relevant to this study type were carried out. The findings of these inspections were reported promptly to the Study Director and to Management.

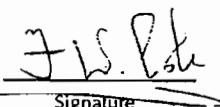
The final report has been audited by the QAU of AgrEvo UK Limited and so far as can be reasonably established, the methods described and the results incorporated accurately reflect the raw data produced during the study.

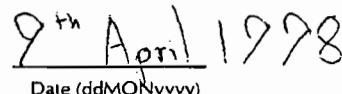
The dates on which the inspections and the audits were made and the dates on which the findings were reported to the Study Director and to Management are given below:

Date of Inspection/Audit	Date of Report to Study Director and Management
18.06.97	18.06.97
03.11.97	03.11.97
04.11.97	04.11.97
05.11.97	05.11.97
02.12.97	03.12.97
05.12.97	05.12.97
09.03.98 to 23.03.98	23.03.98
08.04.98 to 09.04.98	09.04.98

Quality Assurance
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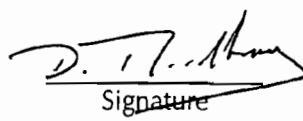

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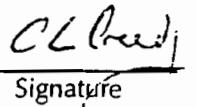
APPROVALS PAGE

Author(s)

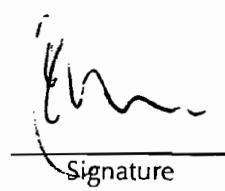
Study Director D Needham


Signature8th April 1998,
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C L Creedy


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SUMMARY

Endosulfan-[C¹⁴]

Code : AE F002671

Toxicokinetics in the rat following repeated daily oral administration of 1 mg/kg bodyweight
for up to 28 days

Objective

This study was designed to determine the effect of repeat daily oral dosing on the concentration of endosulfan residues in the tissues of male and female rats; on the excretion/balance profile of endosulfan; and to determine the maximum concentration of endosulfan residues that was produced in the blood of the animals. The study was conducted in accordance with current international guidelines.

Procedure

Male and female rats were dosed daily with 1 mg endosulfan/kg bodyweight for up to 28 days. Groups of 4 males + 4 females were killed 24 hours after receiving 1,10,16,22 and 28 doses and at necropsy whole tissues or representative samples of epididymal, subcutaneous and renal fat, kidney, liver, testes (including epididymus, seminal vesicles and prostate), uterus, ovaries, blood and plasma were removed and analysed for radioactive content. An additional group of rats were killed 2 days after receiving the last of 28 doses.

A further group of rats (4 males + 4 females) were placed into metabowls after receiving 28 doses of endosulfan and urine and faeces were collected over the next 4 days. At necropsy whole tissues or representative samples of the adrenals, blood, bone, brain, eyes, lungs, heart, kidney, liver, muscle, ovaries, plasma, renal fat, skin, spleen, testes (including epididymus, seminal vesicles and prostate), thyroid, subcutaneous fat, uterus, epididymal fat and residual carcass were removed and analysed for radioactive content.

The final group of 4 male + 4 female rats also received 28 daily doses of endosulfan. Blood samples were then removed 0.5, 1, 1.5, 2, 4, 6, 8, 12, 24, 30, 48, 72, 96 and 120 hours after termination of dosing and the radioactive content was determined. At necropsy (5 days after final dose) whole tissues or representative samples of epididymal, subcutaneous and renal fat, kidney, liver, testes (including epididymus, seminal vesicles and prostate), uterus, ovaries, blood and plasma were removed and analysed for radioactive content.

Results

a) Tissue residues

The results show that there was an increase in the concentration of residues in the tissues of male and female rats following repeated daily oral dosing of 1 mg endosulfan/kg bodyweight. In most tissues the residues reached a maximum value by day 23 with the greatest

concentration of radioactivity being found in the kidney (42.7 mg/kg in males and 31.6 mg/kg in females). The concentrations of endosulfan residues in the liver peaked at 4.200 and 6.878 mg/kg in males and females respectively, but in the remainder of the tissues, the concentration of endosulfan residues were much lower and peaked at 0.244-1.211 mg/kg in the case of the male rats, and at 0.298-3.044 mg/kg in the case of the female rats. Following a 5 day depuration phase, the concentration of residues fell significantly to levels similar to those seen 24 hours after a single oral dose for most tissues.

Examination of the residues in the fat and kidney showed that endosulfan sulfate was the major component in the fat and that all of the residue in the kidney was associated with polar compounds.

b) Excretion profile

The overall recovery if radioactivity, based on the total radioactivity administered over 28 days, was $9.253 \pm 0.486\%$ in the case of the male rats and $9.794 \pm 0.352\%$ in the case of the female rats. The kidney and liver contained the greatest amount of dosed radioactivity, equivalent to 0.578 - 0.789 and 0.294 - 0.499% respectively of the total dose.

Following normalisation of the results to convert all recoveries to a percentage of the recovered radioactivity, $12.7 \pm 1.7\%$ of the recovered radioactivity was found in the urine and $65.5 \pm 3.5\%$ in the faeces. Overall when compared to the previous results obtained after the administration of a single oral dose, the route and rate of excretion was not significantly affected by the previous repeated administration of endosulfan though the percentage of the radioactivity excreted in the faeces was reduced due to the considerable amount of endosulfan residues still present in the gastrointestinal tract and tissues at necropsy.

The highest concentrations of radioactivity found in the tissues 4 days after the final dose (Day 32) were in the kidneys with mean values of 25.4 and 19.1 mg/kg for males and females respectively. The majority of the other tissues contained concentrations of residues below 1.0 mg/kg. These values were 20 - 30 times higher than the equivalent residue concentrations previously measured 4 days after the administration of a single oral dose of endosulfan.

c) Blood pharmacokinetics

Examination of the concentration of radioactive residues in the blood of rats after receiving the last of 28 daily doses of 1 mg endosulfan/kg bodyweight showed that the maximum levels were found 6 - 8 hours after administration of the final dose. There was a sex difference seen with the maximum residue concentration found in the blood of male rats being higher than in the case of female rats (1.48 - 2.05 mg/kg for males and 0.649 - 0.748 mg/kg for females), and this is supported by a slower terminal elimination half life in the male than in the female rats (128.2 - 184.8 h compared with 91.49 - 111.9 h).

CONCLUSIONS

Following repeated daily oral dosing of 1 mg endosulfan/kg bodyweight the concentration of radioactive residues in all tissues increased with increasing dosing and reached a maximum value within 22 doses in the case of most of the tissues examined (i.e. the subcutaneous, renal and epididymal fat, the uterus, plasma, blood, liver, kidney, ovaries and testes)

Apart from the liver and kidney (the organs of metabolism and excretion) the concentration of endosulfan residues peaked at 0.244-1.211 mg/kg in the case of the male rats, and at 0.298-3.044 mg/kg in the case of the female rats.

The reproductive organs did not contain residue levels greater than the general tissues, neither did they display a greater degree of accumulation of endosulfan residues.

Following cessation of dosing the concentration of radioactive residues in all of the tissues fell significantly over the next 5 days to levels that for most tissues were similar to those seen 24 hours after a single oral dose.

The mean maximum concentration of endosulfan residues in the blood were found to be 1.64 and 0.685 mg/kg for male and female rats respectively 6 - 8 hours after receiving the last dose. The terminal half-life in the blood was found to be 97.75 hours for female rats and 146.6 hours for males.

The profile of excretion of dosed radioactivity did not appear to be significantly affected by repeated daily administration of endosulfan.

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1 INTRODUCTION

Endosulfan is a synthetic cyclodiene non-systemic insecticide and acaracide with both contact and stomach activity. It is widely used in agriculture to control a range of insects and mites on a broad spectrum of crops.

The present study has been designed to examine the toxicokinetics of endosulfan in the rat following repeated daily dosing, and to determine:-

- a) the changes in the concentration of endosulfan residues in tissues following repeat daily dosing,
- b) the effect of repeat dosing on the excretion profile of endosulfan in comparison to a single oral dose (Needham and Giulianotti⁽¹⁾), and
- c) the peak concentration and pharmacokinetic parameters of endosulfan residues in the blood following repeated dosing.

The animal model used for these studies is the laboratory rat, the rodent species conventionally used as a primary model for safety evaluation studies. Key dates for the study are shown in Appendix 1.

In a previous study by Dorrough *et al*⁽²⁾ the profile of a single dose of endosulfan in the blood of the rat was determined. Using this data and extrapolating to simulate repeat daily dosing, it was calculated that 28 daily doses would be required to ensure that the concentration of endosulfan residues in the tissues had reached a plateau. This was therefore set as the duration of this study.

2 MATERIALS AND METHODS

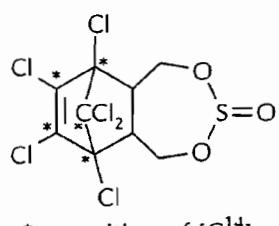
2.1 Test material

2.1.1 General information

Chemical name : α,β-6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3-oxide
Molecular formula : C₉H₆Cl₆O₃S
Molecular weight : 406.9
Physical state : White powder

2.1.2 Radiolabelled test material

Structural formula :



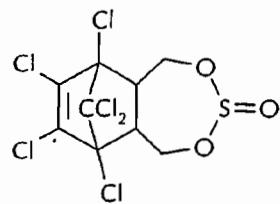
* = position of [C¹⁴]

Common Name : Endosulfan (AE F002671)
Batch number : Z27052-0
Source : HMR, Preclinical Development, Pharmacokinetics,
Frankfurt FRG
Specific activity : 53.083 mCi/g
Radiolabel : 6,7,8,9,10-¹⁴C
Stability : Stable under conditions of storage
Storage : Deep freeze (approx.-20°C)
Purity : 98.26% by radiodetection on HPLC (see Appendix 2)
Isotope ratio (α/β) : 63:37

2.1.3 Technical Endosulfan

Chemical name : 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepin-3-oxide

Structural formula :



Code number : AE F002671 00 ZD99 0008
Batch number : C02351156
Source : AgrEvo, Produktanalytik, Frankfurt
Stability : Stable under conditions of storage
Storage : 25°C ± 5°C
Purity : 98.6% w/w.

2.2 Apparatus and reagents

Scintillation counters : LKB Wallac 1410 and Wallac-Berthold 1409
Sample oxidiser : Packard 307 with Oximate 80 robot
Scintillation cocktail : Starscint, Carbosorb and Permafluor E+ (Packard).
Solubiliser (SHT) : A mixture of 10N sodium hydroxide (200 ml), Triton X-450 (100 ml), methanol (300 ml) and water (400 ml).
HPLC equipment
Pump : Merck Hitachi L6200
UV Detector : Merck Hitachi L4000
Radiodetector : Reeve Analytical 9701 fitted with a heterogeneous flow cell (200 µl) and a series 27000 data system

Database : DEBRA 5.1a database (Lablogic Ltd.) running on a Novell Netware network consisting of Compaq Pentium computers

2.3 Animal source, specification and identification

Young adult male and female Wistar Crl (W1) BR rats of approximately 5-6 weeks of age were obtained from Charles River, Margate, Kent, UK. Body weights ranged from 135-160 g at receipt. Animals were allocated randomly into the required groups and identified by ear marking and/or tail marking at the time of receipt. All animals appeared in good health at the commencement of the study.

2.4 Animal husbandry

All animals were housed in Toxicology animal room 5 in PSL 3 at Chesterford Park, Saffron Walden, Essex, UK. The room was maintained at $21 \pm 2^\circ\text{C}$ and automatically illuminated with a continuous 12 hour photoperiod of fluorescent lighting from 7:30 am to 7:30 pm.

During acclimatisation and during treatment with the radiolabelled test material, the rats were housed in single sex groups of 4 rats in plastic holding cages with wire mesh and paper trays underneath to catch the droppings. This caging regime was used as rats are coprophagic and this prevented re-absorption of excreted radioactivity. For the rats used for the balance study, after the 28 th dose with the radiolabelled test material the animals were transferred to individual all-glass metabolism cages which enabled the separate collection of urine and faeces.

The animals were allowed free access to food (powdered laboratory rodent diet, SDS-RMI(E)SQCFGPL), throughout the study except for the animals of Group 6 who were starved overnight prior to receiving the last dose and then for their time in the metabolism cages when pellet diet (Harlam Teklad TRM) was provided. Daily animal observations were carried out and recorded in the log. A certificate of analysis for the nutrient and contaminant levels in the diet was provided by the manufacturer.

The animals were allowed free access to water from the mains water supply from bottles attached to the cages. Quality control analytical reports on the water are periodically obtained. The criteria for acceptable levels of contaminants in food and water are principally the analytical specifications established by the USEPA Proposed TSCA Health Effects Test Standards and the WHO and European Council Standards considered in conjunction with internal policy and other published standards. None of the contaminants found to be present in the diet or water were capable of interfering with the purpose or conduct of the study at the permitted levels.

2.5 Dose preparation, purity and stability (Appendix 2)

Due to the duration of the study and the large volume of dose required, two doses were prepared for this study. Dose 1 was used from day 0 - 9 and dose 2 from day 10 - 28. The doses were prepared by dissolving accurately weighed amounts of

radiolabelled endosulfan and technical endosulfan in corn oil at a nominal concentration of 0.4 mg/ml. The mean actual concentration achieved was 0.406 mg/ml with a specific activity of 18.8095 mCi/g; 695.952 Mbq/g for dose 1 and 19.1687 mCi/g; 709.242 Mbq/g for dose 2.

The radiochemical purity was determined by HPLC using system 1 or 2. The result gave a purity of $97.42 \pm 0.71\%$ for dose 1 and $97.80 \pm 0.47\%$ for dose 2 (Appendix, 2 section 3). In order to establish the stability of endosulfan in the dose medium, a sample dose of radiolabelled endosulfan was dissolved in corn oil prior to the start of the study and examined over a 76 day period by HPLC analysis. The findings confirmed that the compound did not degrade to any significant extent, the radiochemical purity being found to be $97.75 \pm 1.27\%$ over the 76 day period.

2.6 Dosing

The 64 rats (32 males and 32 females) were dosed orally by gavage once daily with a corn oil solution nominally containing 0.4 mg endosulfan/ml. Each animal received 2.5 ml of the dose solution/kg bodyweight corresponding to a nominal dose level of 1 mg endosulfan /kg bodyweight. The actual dosing data is shown in Appendix 3. Groups of 4 males and 4 females were killed 24 hours after receiving 1, 10, 16, and 22 daily doses. The remaining animals all received 28 doses.

Group	Study type	Days dosed	Necropsy Day	Analysis
1	Tissue residue	1	2	Tissues
2	Tissue residue	10	11	Tissues
3	Tissue residue	16	17	Tissues
4	Tissue residue	22	23	Tissues
5	Tissue residue	28	29	Tissues
6	Excretion profile	28	32	Excreta/tissues
7	Blood profile	28	33	Blood/tissues
8	Tissue residue	28	30	Tissues

The mean actual dose received by the rats was 1.026 ± 0.000 and 1.031 ± 0.023 mg/kg bodyweight for males and females in Groups 1 - 5 plus 8; 1.012 ± 0.02 and 1.027 ± 0.02 mg/kg bodyweight for males and females from Group 6 and 1.010 ± 0.027 and 1.033 ± 0.023 mg/kg bodyweight for males and females in Group 7.

2.7 Sample collection, necropsy and storage

2.7.1 Tissue residue study (Groups 1-5 and 8)

Groups of 4 males and 4 female rats (Groups 1-5) were killed by aortic bleeding under deep isoflurane anaesthesia on days 2, 11, 17, 23 and 29, at 24 hours after receiving 1, 10, 16, 22 or 28 daily doses. A further group (Group 8) were killed on day 30, 2 days after the 28th daily dose. A sample of the blood was retained for analysis and the rest was centrifuged to produce plasma. The following

tissues/organs were removed for analysis : liver, kidney, ovaries, uterus, testes (including epididymis, seminal vesicles and prostate), epididymal fat, subcutaneous fat and renal fat.

If they were not processed immediately, all tissues were stored under deep freeze conditions until analysed.

2.7.2 Excretion/balance study (Group 6)

Following administration of the 28th dose 4 male and 4 female rats were placed in metabowls. Urine and faeces were separately collected at the following times after dosing : 6 and 12 hours (urine only), 24, 48, 72 and 96 hours. At each sample collection the metabolism cages were rinsed down with water. The cage washings were analysed separately. Following the end of the study the cages were thoroughly washed with a mixture of ethanol and water (2 : 1 v/v) in order to maximise the recovery of radioactivity.

At 4 days following dose administration (day 32), the animals were killed by aortic bleeding under deep isoflurane anaesthesia. A sample of the blood was retained for analysis and the rest was centrifuged to produce plasma. The following tissues/organs were removed for analysis : liver, kidney, spleen, heart, lung, brain, muscle, ovaries, uterus, testes (including epididymis, seminal vesicles and prostate), thyroid, eyes, adrenals, bone, epididymal fat, renal fat, subcutaneous fat, skin and the residue carcass.

If they were not processed immediately, all tissues were stored under deep freeze conditions until analysed.

2.7.3 Blood pharmacokinetics (Group 7)

Following administration of the 28th dose 4 male and 4 female rats were used to determine the profile of endosulfan residue in the blood in order to determine the maximum level of endosulfan residues that the rats would be exposed to following repeated daily dosing. Samples (approximately 100 µl) were collected by tail snip for the first 12 hours and then by puncture of a superficial tail vein at the following times:- 0.5, 1, 1.5, 2, 4, 6, 8, 12, 24, 30, 48, 72, 96 and 120 hours after termination of dosing. At necropsy on day 33 (120 hours after dosing) the same tissues were removed as in groups 1-5.

If they were not processed immediately, all tissues were stored under deep freeze conditions until analysed.

2.8 Analytical methods

2.8.1 Preparation of samples for quantification of radioactivity

Samples of all excreta, cage washes and tissue were prepared for analysis in triplicate where possible. The following methods were used :-

i) **Urine (diluted with water when necessary) cage wash and plasma**

Aliquots (0.1-0.5 ml) were added directly to Starscint scintillant for liquid scintillation counting.

ii) **Bone and blood**

Weighed samples of bone (approximately 0.1 g) and aliquots of blood (up to 0.25 ml) were combusted in a sample oxidiser and the $^{14}\text{CO}_2$ trapped in Carbosorb/Permafluor (Packard Instruments) for measurement of radioactivity.

iii) **Adrenals, eyes, ovaries, thyroid, muscle, skin and fat**

Whole organs or weighed aliquots were taken and solubilised in SHT (1 ml) at approximately 50°C, acidified with acetic acid (1 M, 1 ml) and mixed with Starscint scintillant.

iv) **Faeces**

Faeces was extracted with hexane (80 : 20 v/w) and centrifuged. The hexane was removed and aliquots (0.5 - 1 ml) were added directly to scintillant. The residual pellet was then homogenised in water (10 : 1 v/w) and aliquots (0.5 ml) were taken, solubilised in SHT and prepared for scintillation counting as in (iii) above.

v) **Carcass (including gastro-intestinal tract)**

The carcass was digested in sodium hydroxide (>10 M) at approximately 50°C for up to 10 days. After homogenisation samples (1 ml) were removed, acidified with acetic acid (1M, 2 ml) and mixed with Starscint scintillant.

vi) **Other tissues**

The total sample was homogenised in water (10 : 1 v/w) and weighed aliquots (0.25-1.0 ml) were taken, solubilised and prepared for scintillation counting as in (iii) above.

2.8.2 Quantification of radioactivity in excreta and tissues

Radioactivity was measured by liquid scintillation counting with automatic external standard quench correction. Corrected dpm of less than the background cpm were considered to be below the limit of quantification.

Calculation of the concentration of radioactivity in each sample, and the percentage of the dose administered were made by the DEBRA database from the sample weights and dpm in the samples.

2.8.3 Analysis of dose using high performance liquid chromatography (HPLC)

Instrumentation

Pump	:	Merck Hitachi L6200
UV detector	:	Merck Hitachi L4000
Sample injector	:	Rheodyne 7125
Radioactive monitor	:	Reeve 9701
FDSK & DSK - integration and data handling	:	Reeve 27000 series
Column	:	Hypersil ODS 5μ (250 x 4.6 mm)
Chart recorder	:	Servigor 102

Solvent system 1

Solvent A = Water : Acetonitrile : glacial acetic acid (90 : 10 : 0.1 v/v)

Solvent B = Water : Acetonitrile : glacial acetic acid (10 : 90 : 0.1 v/v)

Solvent flow rate = 1 ml/min

Solvent gradient :-

Time (mins)	%A	%B
0	50	50
5	20	80
10	18	82
20	18	82
22	10	90
25	10	90
28	50	50

Solvent system 2

Solvent A = Methanol : Water (80 : 20 v/v)

Solvent B = Methanol : Water (70 : 30 v/v)

Flow rate 1 ml/minute

Solvent gradient :-

Time (mins)	%A	%B
0	0	100
10	100	0
30	100	0
35	0	100

U. V. Wavelength = 224 nm

2.8.4 Analysis of residues in kidney and fat

The residues present in the kidney and fat were analysed by HPLC following solvent extraction. The homogenised kidney from Group 5 rats killed 24 hours after receiving 28 doses of endosulfan was extracted with a mixture of acetonitrile and water (50 :50 v/v). The extract contained 23.7 - 29.4% of the radioactive residue, and this was concentrated before being analysed by HPLC using system 1. The results (Figure 5) showed that all of the radioactivity was associated with polar compounds which ran at the solvent front.

Fat samples from rats of Groups 5 were extracted with hexane by continuous stirring over low heat followed end over end mixing. The hexane extract was back extracted with acetonitrile which contained 56 - 65.2% of the radioactive residue. This was reduced in volume and examined by HPLC using system 1. The results (Figure 6) showed that endosulfan sulfate was the only significant compound present.

2.9 Data handling

2.9.1 Data capture

Excretion/balance and tissue residue study

Weights (pots, tissues, homogenates, aliquots) were either captured directly from balances into the database and weight reports, or recorded manually onto raw data sheets, and then edited onto the system or manually entered via a keyboard directly onto the database. Scintillation counts were manually entered via a keyboard into the database. Print-outs from balances and scintillation counts were retained as raw data.

2.9.2 Data processing and statistics

Elimination/tissue residue studies (Groups 1-5, 6 and 8)

Percentage dose present and concentration in all samples were calculated by the DEBRA database. Means and standard deviations for each analysis and for individual values in each group were also calculated. The percentages of dose present in samples where it was not possible to remove the whole tissue were calculated using the data in Appendix 4.

Blood profile study (Group 7)

Percentage dose present and concentration in all samples were calculated by the DEBRA database. Means and standard deviations for each analysis and for individual values in each group were also calculated. The pharmacokinetic parameters were calculated using the Topfit 2 programme.

2.10 Records and archiving

This work was carried out between August 1997 and March 1998 in the Toxicology Function of AgrEvo UK Ltd, at Chesterford Park, Saffron Walden, Essex. All raw data relating to these studies and print-outs of data capture by the DEBRA system are retained under study number TOX97099 in the Archive of AgrEvo UK Limited, Chesterford Park, Saffron Walden, Essex, UK. DEBRA computer protocols and magnetic data will be retained in the database until archived onto optical or magnetic media which will then be stored with the paper data for these studies.

3 RESULTS AND DISCUSSION

Throughout this report, the concentration of endosulfan residues in tissue and excreta are given as "mg equivalents of endosulfan/kg tissue". For ease of use this will be expressed as "mg/kg tissue".

3.1 Tissue residue study

All of the data in this section of the study was derived from groups of 4 individual males and 4 females which for convenience are shown as mean results. The data from the individual animals are shown in Tables 1 - 8.

The concentration of endosulfan residues in the tissues of male and female rats killed 24 hours following the administration of 1, 10, 16, 22 or 28 oral doses of endosulfan (i.e. on day 2, 11, 17, 23 and 29) are shown in Tables 1-5. Tables 6-8 show the concentration of residues 2, 4 and 5 days after receiving the last of 28 daily doses (i.e. on day 30, 32 and 33) and demonstrate the depuration of endosulfan residues from the tissues. These results were obtained from the rats in Group 8 which received 28 daily doses of endosulfan and were then killed 2 days (day 30) after the final dose; the animals used in the balance study (Group 6) which received 28 daily doses and were then placed in metabowls for 4 days before being killed (day 32); and the animals used to obtain the blood profile (Group 7) which were killed 5 days (day 33) after receiving the last of 28 daily doses. The overall mean values of the tissue residue concentrations and effect of the depuration phase are shown in Tables 9 and 10 and the results are displayed graphically in Figures 1-4.

The data show that for all tissues the concentration of endosulfan residues increased with repeated dosing, and reached a plateau level during the study. For most tissues this plateau level was reached by the 22nd dose. However in the 5 day depuration phase following the last dose, all tissue residue concentrations fell considerably and in most tissues the final concentrations were similar to those seen in the Group 1 rats which were killed 24 hours after a single oral dose. The highest residue concentrations were seen in the kidney and liver (the organs of excretion and metabolism) of both male and female rats. The tissue concentrations in the kidney were significantly greater than in all other tissues reaching 42.668 and 31.616 mg/kg in male and female rats respectively, an increase of 10.4 and 19.4 times the residue concentrations seen after a single oral dose. The concentrations of endosulfan residues in the liver peaked at 4.200 and 6.878 mg/kg in males and females respectively, an increase of 6.0 and 10.8 times the concentrations found after a

after a single dose. However, following cessation of dosing the concentrations of residues in the kidney fell to 63 and 79% of the maximum values and the concentration of residues in the liver fell to 40 and 47% of the maximum detected values by the end of the depuration phase 5 days after the administration of the final dose. There was a slight increase seen in the concentration of residues in the liver and kidney between the tissues analysed on day 33 and 32. This was probably due to the fact that the animals killed on day 32 had been in metabowls for 4 days and, due to the design of the cages, tend to eat less and drink more than animals housed in standard holding cages. This would tend to increase slightly the urinary clearance of polar metabolites from the kidney and liver hence lowering the concentration of endosulfan residues in these tissues.

The nature of the kidney residues was examined by extraction with a 50 : 50 mixture of acetonitrile/water, which released 24.7 - 29.2% of the radioactive residue, followed by HPLC. The results (Figure 5) showed that the extracted material was shown to be polar in nature and did not contain detectable amounts of the apolar metabolites.

In the remainder of the tissues, the concentration of endosulfan residues remained low throughout the study. In the tissues of male rats the residue levels peaked at 0.244-1.211 mg/kg, and in the case of the female rats at 0.298-3.044 mg/kg. The results show that the concentration of endosulfan residues in the blood and plasma and kidney were generally higher in the male than in the female, but the residue concentrations in the subcutaneous and renal fat and other tissues were generally higher in the female than the male (Table 9 and 10; Figures 1 and 2).

The maximum mean concentration of endosulfan residues were found to be 4.8 - 6.5 times greater in females than in males in the case of the subcutaneous and renal fat (3.044 cf 0.636 and 3.960 cf 0.610 mg/kg respectively). The maximum mean residue in epididymal fat was 0.737 mg/kg. These concentrations were 2.5 - 3.3 times greater than those seen on day 2 after a single oral dose of endosulfan. These residues were rapidly cleared following cessation of dosing and at the end of the 5 day depuration phase (day 33) the concentrations of endosulfan residues in the fat were 21 - 31% of the maximum concentrations. Extraction of the residues in the fat by with hexane released 56 -65 % of the radioactive residue virtually all of which (94 - 100%) was identified by HPLC as endosulfan sulfate (Figure 6).

Determination of residue concentrations from the reproductive organs (testes, uterus and ovaries) showed that in these tissues the level endosulfan residues were generally lower than other organs in the case of the testes (mean maximum concentration of 0.244 mg/kg) and only slightly higher than the plasma and blood in the case of the ovaries and uterus (mean maximum concentrations of 0.796 and 1.219 mg/kg respectively). The residue concentration in these organs reached a plateau level within 22 doses in the case of the testes and ovaries and by 28 days in the case of the uterus. Following cessation of dosing and at the end of the 5 day depuration phase (day 33) the concentrations of endosulfan residues fell by 50% in the case of the testes, 57.3% in the case of the ovaries and 84.5% in the case of the uterus.

The concentration of radioactive endosulfan residues in the blood and plasma of the rats remained low throughout the study and were shown to have reached a plateau and peaked at mean values of 1.211 and 0.473 mg/kg in the case of male rats and 0.505 and 0.298 mg/kg in the case of female rats (Figures 1 and 2). These residue concentrations were lower than the administered dose level of 1 mg/kg with the exception of the male blood. At the end of the depuration phase the concentrations of endosulfan residues in the blood were 70.7 and 52.1% of the maximum value and the concentrations in the plasma had fallen to 17.1 and 23.8% of the maximum residue levels for males and females respectively.

Overall it was found that whilst the concentration of endosulfan residues in the tissues of male and female rats increased with repeated daily dosing of 1 mg/kg bodyweight, the residues levels in all tissues reached a plateau concentration by the 28 th dose. The maximum residue concentrations were generally low with the exception of the liver and kidney, the organs of metabolism and excretion. Following cessation of dosing the residue concentrations fell rapidly and within 5 days were at the level seen 24 hours after a single oral dose for most tissues

3.2 Excretion/balance (Group 6)

The excretion of endosulfan in the urine and faeces of male and female rats over a 4 day period following the administration of the last of 28 daily oral doses of 1 mg endosulfan/kg bodyweight is shown in Table 11. The amount excreted has been quantified against the total radioactivity administered to the rats over the whole 28 days. The overall recovery was therefore well below 100% as the excreta was only collected after the administration of the final dose. In order to compare the excretion profile with that found after a single dose, the excretion data have been normalised in Table 12 by converting the values to a percentage of the recovered radioactivity rather than dosed radioactivity. This enables the rate and route of excretion to be more easily compared to the results previously obtained for the excretion following a single oral dose.

The results show that the overall recovery, based on the total dose given, was $9.253 \pm 0.486\%$ in the case of the male rats and $9.794 \pm 0.352\%$ in the case of the female rats. The individual tissues which contained the greatest amount of dosed radioactivity were found to be the kidney and liver which contained the equivalent of 0.578 - 0.789 and 0.294 - 0.499% respectively of the total dose administered. The portion of radioactivity in the tissues of the rats is shown in Table 13. In the case of tissues where the whole organ was not removed (e.g. skin, muscle etc.) a factor was used based on the % bodyweight as shown in Appendix 4 to enable the radioactivity in the total tissue to be assessed. The value for fat was obtained by meaning the results obtained for the residue concentrations in the renal, subcutaneous and epididymal fat where appropriate.

Following normalisation of the excretion results (Table 12) it can be seen that $12.7 \pm 1.7\%$ of the excreted radioactivity was found in the urine and $65.5 \pm 3.5\%$ in the faeces. The results for the urinary excretion are similar to those found previously following the administration of a single oral dose though the percentage of the

radioactivity excreted in the faeces has been reduced due to the endosulfan residues present in the gastrointestinal tract and tissues (Needham and Julianotti, 1997⁽¹⁾).

The concentration of endosulfan residues in the tissues of the rats are shown in Table 7. The highest concentrations of radioactivity were found in the kidneys with mean values of 25.4 and 19.1 mg/kg for males and females respectively. All other tissues contained concentrations of residues below 1 mg/kg except for the spleen and liver (1.393 and 1.707 mg/kg respectively) of male rats and the renal fat, lungs and liver (1.670, 1.023 and 3.158 mg/kg respectively) in the case of female rats. The concentration of residues found in the tissues are 20 - 30 times higher than the equivalent residue concentrations measured also 4 days after a single oral dose (Needham and Julianotti, 1997⁽¹⁾).

Overall the results for the excretion balance study show that the route and rate of excretion of endosulfan residues was not significantly altered following multiple oral dosing with endosulfan.

3.3 Blood pharmacokinetics (Group 7)

Following the last of 28 daily doses of 1 mg endosulfan/kg bodyweight the concentration of radioactive residues was determined in the blood of 4 male and 4 female rats over a period of 120 hours (5 days). The results for the individual animals are presented in Table 14 and is shown in Figure 7. The pharmacokinetic parameters determined from the data are given in Table 15.

The maximum residue levels (Cmax) were reached 4 - 8 hours after dosing (Tmax), and the findings show that following the administration of endosulfan there a sex difference in the maximum concentration of endosulfan residues found in the blood of rats after repeated daily dosing with the concentrations being 1.48 - 2.05 mg/kg in the case of male rats and 0.649 - 0.748 mg/kg in the case of female rats. The male rats also had a slower terminal elimination half life (128.2 - 184.8 h) when compared with female rats (91.49 - 111.9 h).

4 CONCLUSIONS

- 4.1 Following repeated daily oral dosing of 1 mg endosulfan/kg bodyweight the concentration of radioactive residues in all tissues increased with increasing dosing and reached a maximum value within 22 doses in the case of most of the tissues examined (i.e. the subcutaneous, renal and epididymal fat, the uterus, plasma, blood, liver, kidney, ovaries and testes)
- 4.2 Apart from the liver and kidney (the organs of metabolism and excretion) the concentration of endosulfan residues peaked at 0.244-1.211 mg/kg in the case of the male rats, and at 0.298-3.044 mg/kg in the case of the female rats.
- 4.3 The reproductive organs did not contain residue levels greater than the general tissues, neither did they display a greater degree of accumulation of endosulfan residues.

- 4.4 Following cessation of dosing the concentration of radioactive residues in all of the tissues fell significantly over the next 5 days to levels that for most tissues were similar to those seen 24 hours after a single oral dose.
- 4.5 The mean maximum concentration of endosulfan residues in the blood were found to be 1.64 and 0.685 mg/kg for male and female rats respectively 6 - 8 hours after receiving the last dose. The terminal half-life in the blood was found to be 97.75 hours for female rats and 146.6 hours for males.
- 4.6 The profile of excretion of dosed radioactivity did not appear to be significantly affected by repeated daily administration of endosulfan.

5 REFERENCES

No.	Document No.	Report No.	Author(s)
			Title
1	A59694	TOX/97/142-4	Needham, D. and Giulianotti, L.G., (1997) Endosulfan-[C ¹⁴] : Distribution, metabolism and excretion in the rat following a single oral administration of 1 or 6 mg/kg bodyweight.
2	A14276		Dorough, H.W, Huhtanen, K., Marshall, T.C. and Bryant, H.E. (1978) Fate of endosulfan in rats and toxicological considerations of apolar metabolites. Pest. Biochem. Physiol. 241-252

**Concentration of radiolabelled residues in male and female rats 24 hours after receiving a single oral dose of
1mg Endosulfan /kg bodyweight (Group 1; Day 2)**

Table 1

Tissue	Concentration in tissues (mg equivalents/kg)											
	Male			Female								
	001M	002M	003M	004M	SD	005F	006F	007F	008F	Mean	SD	
Subcut fat	0.222	0.186	0.235	0.198	0.210	0.023	0.901	1.353	1.010	1.194	1.114	0.200
Uterus	-	-	-	-	-	0.273	0.156	0.386	0.298	0.278	0.095	
Epidid fat	0.226	0.195	0.267	0.206	0.223	0.032	-	-	-	-	-	-
Plasma	0.123	0.100	0.138	0.097	0.114	0.019	0.047	0.073	0.042	0.056	0.055	0.014
Blood	0.172	0.132	0.168	0.154	0.157	0.018	0.051	0.075	0.043	0.055	0.056	0.014
Renal fat	0.223	0.201	0.234	0.208	0.216	0.015	0.918	2.009	1.151	1.398	1.369	0.470
Liver	0.721	0.618	0.792	0.684	0.704	0.073	0.514	0.930	0.518	0.594	0.639	0.197
Kidney	4.098	3.678	4.508	4.189	4.118	0.342	1.397	2.444	1.185	1.494	1.630	0.558
Ovaries	-	-	-	-	-	-	0.110	0.146	0.212	0.196	0.166	0.047
Testes	0.049	0.045	0.056	0.039	0.047	0.007	-	-	-	-	-	-

Table 2
Concentration of radiolabelled residues in male and female rats 24 hours after receiving the last of 10 single oral daily doses of 1mg Endosulfan /kg bodyweight (Group 2; Day11)

Tissue	Male						Female					
	009M	010M	011M	012M	Mean	SD	013F	014F	015F	016F	Mean	SD
Subcut fat	0.410	0.470	0.593	0.675	0.537	0.119	4.426	3.194	2.250	2.305	3.044	1.018
Uterus	-	-	-	-	-	-	0.821	0.854	0.716	1.041	0.858	0.136
Epidid fat	0.456	0.629	0.686	0.764	0.634	0.131	-	-	-	-	-	-
Plasma	0.301	0.267	1.084	0.242	0.473	0.408	0.266	0.209	0.220	0.243	0.234	0.025
Blood	0.697	0.629	0.629	0.527	0.621	0.070	0.333	0.266	0.301	0.303	0.301	0.027
Rcnal fat	0.355	0.560	0.485	0.664	0.516	0.130	5.763	3.497	3.360	3.219	3.960	1.207
Liver	2.055	2.372	2.171	2.336	2.234	0.148	3.888	3.586	1.152	4.367	3.248	1.434
Kidney	27.057	24.404	21.447	22.179	23.772	2.526	16.928	14.069	17.570	18.707	16.818	1.975
Ovaries	-	-	-	-	-	-	0.790	0.751	0.672	0.820	0.758	0.064
Testes	0.183	0.179	0.202	0.254	0.205	0.035	-	-	-	-	-	-

Concentration of radiolabelled residues in male and female rats 24 hours after receiving the last of 16 daily oral doses of 1mg Endosulfan/kg bodyweight (Group 3; Day 17)

Table 3

Tissue	Concentration in tissues (mg equivalents/kg)						Female				
	Male			Female			Mean	SD	SD	Mean	SD
	017M	018M	020M	Mean	SD	021F	022F	023F	024F	Mean	SD
Subcut fat	0.501	0.530	0.735	0.651	0.604	0.109	3.330	3.094	2.608	2.658	2.923
Uterus	-	-	-	-	-	0.296	0.298	0.179	0.413	0.296	0.095
Epidid fat	0.581	0.693	0.915	0.742	0.733	0.139	-	-	-	-	-
Plasma	0.243	0.252	0.244	0.299	0.260	0.026	0.278	0.272	0.211	0.280	0.260
Blood	0.608	0.758	0.817	0.879	0.766	0.116	0.434	0.413	0.196	0.399	0.360
Renal fat	0.482	0.623	0.752	0.583	0.610	0.112	3.897	3.617	3.204	2.202	3.230
Liver	2.903	2.301	2.833	3.588	2.906	0.528	5.367	4.777	5.447	4.001	4.898
Kidney	25.409	30.375	29.534	32.076	29.349	2.831	21.361	27.519	16.951	24.420	22.563
Ovaries	-	-	-	-	-	0.876	0.936	0.447	0.727	0.746	0.218
Testes	0.189	0.206	0.200	0.183	0.194	0.010	-	-	-	-	-

Table 4
Concentration of radiolabelled residues in male and female rats 24 hours after receiving the last of 22 daily oral doses of 1mg Endosulfan/kg bodyweight (Group 4; Day 23)

Tissue	Male						Female					
	025M	026M	027M	028M	Mean	SD	029F	030F	031F	032F	Mean	SD
Subcut fat	0.673	0.597	0.726	0.550	0.636	0.079	2.794	3.203	3.589	2.262	2.962	0.569
Uterus	-	-	-	-	-	-	0.460	0.275	0.290	0.185	0.303	0.115
Epidid fat	0.746	0.637	0.984	0.581	0.737	0.178	-	-	-	-	-	-
Plasma	0.437	0.395	0.399	0.385	0.404	0.023	0.359	0.255	0.328	0.251	0.298	0.054
Blood	1.334	1.150	1.255	1.103	1.211	0.104	0.544	0.425	0.507	0.417	0.473	0.062
Renal fat	0.618	0.416	0.672	0.494	0.550	0.116	3.269	3.675	4.649	2.379	3.493	0.942
Liver	4.454	3.500	4.694	4.150	4.200	0.517	6.214	4.840	10.355	6.104	6.878	2.400
Kidney	45.617	49.796	40.559	34.698	42.668	6.519	34.538	28.714	38.537	23.270	31.265	6.684
Ovaries	-	-	-	-	-	-	0.852	0.504	1.034	0.797	0.796	0.220
Testes	0.280	0.245	0.242	0.209	0.244	0.029	-	-	-	-	-	-

**Concentration of radiolabelled residues in male and female rats 24 hours after receiving last of 28 daily oral doses
of 1mg Endosulfan/kg bodyweight (Group 5; Day 29)**

Table 5

Tissue	Concentration in tissues (mg equivalents/kg)						Female					
	Male			Female			Mean	SD	037F	038F	039F	040F
	033M	034M	035M	036M	Mean	SD	037F	038F	039F	040F	Mean	SD
Subcut fat	0.471	0.543	0.479	0.516	0.502	0.034	2.769	2.576	2.033	3.489	2.717	0.602
Uterus	-	-	-	-	-	-	0.261	2.050	1.642	0.923	1.219	0.790
Epidid fat	0.505	0.529	0.557	0.595	0.546	0.039	-	-	-	-	-	-
Plasma	0.286	0.296	0.315	0.281	0.295	0.015	0.294	0.255	0.245	0.278	0.268	0.022
Blood	1.207	1.215	1.125	1.274	1.205	0.061	0.513	0.485	0.466	0.556	0.505	0.039
Renal fat	0.439	0.455	0.462	0.486	0.461	0.019	3.820	3.259	3.892	4.758	3.932	0.619
Liver	3.615	3.054	3.048	3.754	3.368	0.370	6.666	5.364	5.198	5.859	5.772	0.659
Kidney	49.396	39.823	33.614	39.732	40.641	6.520	30.812	31.269	31.841	32.541	31.616	0.747
Ovaries	-	-	-	-	-	-	0.582	0.555	0.663	0.604	0.601	0.046
Testes	0.255	0.222	0.189	0.225	0.223	0.027	-	-	-	-	-	-

Concentration of radiolabelled residues in male and female rats 48 hours after receiving the last of 28 daily oral doses of 1mg Endosulfan/kg bodyweight (Group 8; Day 30)

Table 6

Tissue	Concentration in tissues (mg equivalents/kg)					
	057M	058M	059M	060M	Mean	SD
Subcut fat	0.440	0.429	0.356	0.546	0.443	0.078
Uterus	-	-	-	-	0.282	0.307
Epidid fat	0.727	0.489	0.463	0.698	0.594	0.137
Plasma	0.178	0.203	0.195	0.207	0.196	0.013
Blood	0.983	0.921	1.147	1.167	1.055	0.121
Renal fat	0.524	0.325	0.364	0.439	0.413	0.088
Liver	3.481	2.460	2.895	2.780	2.904	0.426
Kidney	30.056	31.336	49.70	41.588	38.188	9.288
Ovaries	-	-	-	-	0.754	0.529
Testes	0.225	0.140	0.210	0.205	0.195	0.038

Table 7

Concentration of radiolabelled residues in male and female rats 4 days after receiving the last of 28 daily oral doses of 1mg Endosulfan/kg bodyweight (Group 6; Day 32))

Tissue	Male						Female					
	041M	042M	043M	044M	Mean	SD	045F	046F	047F	048F	Mean	SD
Carc/GIT	0.166	0.185	0.163	0.145	0.164	0.016	0.168	0.215	0.254	0.230	0.217	0.036
Subcut fat	0.277	0.307	0.207	0.190	0.245	0.056	0.972	0.761	0.936	0.947	0.904	0.096
Skin	0.270	0.278	0.241	0.226	0.254	0.025	0.218	0.247	0.204	0.258	0.232	0.025
Uterus	-	-	-	-	-	-	0.221	0.386	0.308	0.533	0.362	0.132
Epidid fat	0.282	0.508	0.315	0.341	0.361	0.100	-	-	-	-	-	-
Plasma	0.120	0.141	0.125	0.134	0.130	0.009	0.099	0.116	0.113	0.122	0.113	0.010
Blood	0.956	0.946	1.001	0.866	0.942	0.056	0.319	0.344	0.361	0.354	0.345	0.018
Eyes	0.069	0.107	0.101	0.072	0.087	0.019	0.062	0.050	0.071	0.052	0.058	0.010
Brain	0.150	0.160	0.142	0.141	0.148	0.009	0.144	0.148	0.148	0.159	0.155	0.007
Ren fat	0.254	0.340	0.186	0.164	0.236	0.079	1.324	1.499	2.254	1.601	1.670	0.406
Heart	0.299	0.216	0.305	0.265	0.271	0.041	0.168	0.155	0.204	0.075	0.150	0.054
Lungs	0.624	0.505	0.647	0.523	0.575	0.071	0.881	0.972	1.173	1.067	1.023	0.125
Spleen	2.044	1.177	1.368	0.982	1.393	0.462	0.987	0.711	0.851	0.811	0.840	0.114
Liver	1.353	1.996	1.404	2.077	1.707	0.382	3.293	2.850	3.448	3.040	3.158	0.266
Kidney	19.074	29.919	32.446	20.247	25.422	6.749	19.956	18.584	16.325	21.679	19.136	2.262
Thyroid	0.298	0.302	0.412	0.369	0.345	0.055	0.287	0.346	0.311	0.248	0.298	0.041
Ovaries	-	-	-	-	-	-	0.341	0.466	0.470	0.489	0.442	0.068
Testes	0.176	0.189	0.143	0.119	0.157	0.032	-	-	-	-	-	-
Adrenal	1.266	0.571	0.374	0.454	0.666	0.408	0.488	0.513	0.658	0.549	0.552	0.075
Muscle	0.097	0.084	0.118	0.091	0.097	0.015	0.093	0.084	0.090	0.069	0.084	0.010
Bone	0.142	0.141	0.130	0.180	0.148	0.022	0.070	0.082	0.091	0.079	0.080	0.009

Table 8

Concentration of radiolabelled residues in male and female rats 5 days after receiving the last of 28 daily oral doses of 1mg Endosulfan/kg bodyweight (Group 7; Day 33))

Tissue	Male						Female					
	049M	050M	051M	052M	Mean	SD	053F	054F	055F	056F	Mean	SD
Subcut fat	0.237	0.237	0.154	0.158	0.196	0.047	0.468	0.783	0.627	1.076	0.739	0.259
Uterus	-	-	-	-	-	-	0.231	0.223	0.204	0.098	0.189	0.062
Epid. fat	0.233	0.196	0.161	0.259	0.213	0.043	-	-	-	-	-	-
Plasma	0.089	0.076	0.066	0.093	0.081	0.012	0.056	0.080	0.065	0.084	0.071	0.013
Blood	1.088	0.754	0.804	0.777	0.856	0.156	0.263	0.246	0.285	0.258	0.263	0.016
Renal fat	0.134	0.150	0.113	0.120	0.129	0.016	0.847	0.990	0.956	1.575	1.092	0.328
Liver	1.591	2.310	1.606	1.227	1.683	0.453	2.524	2.607	4.132	3.544	3.202	0.774
Kidney	30.560	24.940	26.080	26.530	27.028	2.448	28.631	23.857	23.481	22.911	24.720	2.636
Ovaries	-	-	-	-	-	-	0.290	0.289	0.388	0.390	0.340	0.057
Testes	0.158	0.108	0.103	0.118	0.122	0.025	-	-	-	-	-	-

Table 9

The mean concentrations of residues in the tissues of male and female rats following repeat daily oral administration of 1 mg Endosulfan/kg bodyweight for up to 28 days

Tissue	Day	Concentration in males (mg equivalents/kg tissue)							
		2	11	17	23	29	30	32	33
Subcutaneous fat	0.210	0.537	0.604	0.636	0.502	0.443	0.245	0.196	
Epididymal fat	0.223	0.634	0.733	0.737	0.546	0.594	0.361	0.213	
Plasma	0.114	0.473	0.260	0.404	0.295	0.196	0.130	0.081	
Blood	0.157	0.621	0.766	1.211	1.205	1.055	0.942	0.856	
Renal fat	0.216	0.516	0.610	0.550	0.461	0.413	0.236	0.129	
Liver	0.704	2.234	2.906	4.200	3.368	2.904	1.707	1.683	
Kidney	4.118	23.772	29.349	42.668	40.641	38.188	25.422	27.028	
Testes	0.047	0.205	0.194	0.244	0.223	0.195	0.157	0.122	
Concentration in females (mg equivalents/kg tissue)									
Tissue	Day	2	11	17	23	29	30	32	33
		1.114	3.044	2.923	2.962	2.717	1.786	0.904	0.739
Subcutaneous fat	0.278	0.858	0.296	0.303	1.219	0.305	0.362	0.189	
Uterus	0.055	0.234	0.260	0.298	0.268	0.181	0.113	0.071	
Plasma	0.056	0.301	0.360	0.473	0.505	0.447	0.345	0.263	
Blood	1.369	3.960	3.230	3.493	3.932	2.815	1.670	1.092	
Renal fat	0.639	3.248	4.898	6.878	5.772	4.623	3.158	3.202	
Liver	1.630	16.818	22.563	31.265	31.616	29.648	19.136	24.720	
Kidney	0.166	0.758	0.746	0.796	0.601	0.651	0.442	0.340	

Table 10

Concentration of endosulfan residues in the tissues of rats following repeated daily dosing with endosulfan and the degree of depuration following cessation of dosing.

Tissue	Concentration 24 hours after a single dose (Csingle* mg/kg)	Maximum residue concentration (Cmax mg/kg)	Ratio Cmax/Csingle	Concentration after 5 days depuration** (mg/kg)	% decrease from Cmax after 5 days depuration
Males					
Subcut fat	0.210	0.636	3.029	0.196	69.2
Epidid fat	0.223	0.737	3.305	0.213	71.1
Plasma	0.114	0.473	4.149	0.081	82.9
Blood	0.157	1.211	7.713	0.856	29.3
Renal fat	0.216	0.610	2.824	0.129	78.9
Liver	0.704	4.200	5.966	1.683	59.9
Kidney	4.118	42.668	10.361	27.028	36.7
Testes	0.047	0.244	5.191	0.122	50.0
Females					
Subcut fat	1.114	3.044	2.732	0.739	75.7
Uterus	0.278	1.219	4.385	0.189	84.5
Plasma	0.055	0.298	5.418	0.071	76.2
Blood	0.056	0.505	9.018	0.263	47.9
Renal fat	1.369	3.960	2.893	1.092	72.4
Liver	0.639	6.878	10.764	3.202	53.4
Kidney	1.630	31.616	19.396	24.720	21.8
Ovaries	0.166	0.796	4.795	0.340	57.3

* Mean residue concentrations of Group 1 rats (001M - 008F).

** Mean residue concentrations of Group 7 rats (049M - 056F)

Table 11

Percentage of the total of 28 daily oral daily doses of 1 mg endosulfan/kg bodyweight, excreted by male and female rats following administration of the last dose

Sample	Time	Cumulative excretion of radioactivity (expressed as % of total dose)											
		Males					Females						
		041M	042M	043M	044M	Mean	SD	045F	046F	047F	048F	Mean	SD
URINE	6h	0.214	0.198	0.172	0.221	0.201	0.022	0.232	0.214	0.208	0.280	0.233	0.033
URINE	12h	0.378	0.370	0.295	0.385	0.357	0.042	0.498	0.393	0.441	0.468	0.450	0.044
URINE	24h	0.520	0.571	0.430	0.659	0.545	0.096	0.754	0.608	0.697	0.758	0.704	0.070
URINE	48h	0.719	0.823	0.649	0.906	0.774	0.113	1.006	0.824	1.087	1.082	1.000	0.123
URINE	72h	0.877	1.027	0.816	1.084	0.951	0.125	1.159	1.020	1.327	1.290	1.199	0.139
URINE	96h	0.989	1.180	0.934	1.205	1.077	0.136	1.260	1.170	1.512	1.433	1.344	0.156
FAECAL EXT	24h	0.124	0.294	0.246	0.461	0.322	0.092	0.264	0.717	0.162	0.291	0.358	0.245
FAECAL EXT	48h	0.354	0.323	0.268	0.507	0.363	0.102	0.296	0.738	0.198	0.223	0.389	0.239
FAECAL EXT	72h	0.358	0.328	0.271	0.513	0.367	0.103	0.302	0.750	0.209	0.332	0.398	0.240
FAECAL EXT	96h	0.361	0.313	0.273	0.516	0.371	0.104	0.307	0.757	0.216	0.338	0.404	0.241
FAECAL RES	24h	4.579	4.334	4.230	4.570	4.428	0.174	4.162	4.297	3.583	3.215	3.814	0.516
FAECAL RES	48h	5.603	5.331	4.974	5.775	5.421	0.349	5.250	5.280	5.057	4.565	5.038	0.310
FAECAL RES	72h	5.848	5.632	5.214	6.077	5.693	0.367	5.694	5.778	5.604	5.107	5.546	0.301
FAECAL RES	96h	6.004	5.851	5.369	6.245	5.867	0.370	5.907	6.092	5.922	5.452	5.843	0.274
CAGE WASH	6h	0.043	0.055	0.071	0.019	0.047	0.022	0.045	0.051	0.047	0.030	0.043	0.009
CAGE WASH	12h	0.034	0.079	0.110	0.033	0.069	0.033	0.077	0.092	0.069	0.073	0.078	0.010
CAGE WASH	24h	0.115	0.110	0.170	0.059	0.113	0.045	0.154	0.144	0.169	0.126	0.148	0.018
CAGE WASH	48h	0.150	0.146	0.199	0.109	0.151	0.037	0.230	0.246	0.292	0.192	0.240	0.041
CAGE WASH	72h	0.170	0.171	0.218	0.122	0.170	0.039	0.273	0.300	0.369	0.235	0.294	0.056
CAGE WASH	96h	0.197	0.193	0.244	0.145	0.195	0.040	0.322	0.340	0.424	0.277	0.341	0.062
SUBTOTAL		7.551	7.557	6.82	8.111	7.510	0.530	7.796	8.359	8.074	7.500	7.932	0.369
CARCASS	96h	0.598	0.690	0.620	0.552	0.615	0.057	0.566	0.731	0.381	0.802	0.745	0.134
Other tissues	96h	0.975	1.341	1.182	1.015	1.128	0.168	1.099	1.022	1.128	1.217	1.117	0.081
TOTAL		9.124	9.588	8.622	9.678	9.253	0.496	9.461	10.112	10.083	9.519	9.74	0.352

Table 12

Excretion of radiolabelled dose, as a percentage of recovered radioactivity, from rats following the last of 28 daily oral doses of 1 mg endosulfan/kg bodyweight.

Sample	Excretion of radioactivity (as % of recovered radioactivity)							
	Males				Females			
	041M	042M	043M	044M	045F	046F	047F	048F
Urine								
6h	2.345	2.064	1.990	2.286	2.445	2.110	2.059	2.942
12h	1.798	1.795	1.431	1.692	2.808	1.775	2.306	1.966
24h	1.549	2.096	1.564	2.828	2.707	2.120	2.542	3.045
48h	2.175	2.622	2.541	2.547	2.653	2.134	3.854	3.398
72h	1.731	2.123	1.931	1.838	1.613	1.932	2.382	2.179
96h	1.229	1.599	1.369	1.248	1.070	1.487	1.835	1.499
Total	10.83	12.30	10.83	12.44	13.30	11.56	14.98	15.03
Faecal organic extract								
24h	3.549	3.069	2.855	4.760	2.787	7.078	1.600	3.055
48h	0.324	0.295	0.249	0.472	0.336	0.215	0.365	0.334
72h	0.045	0.055	0.037	0.061	0.069	0.114	0.106	0.091
96h	0.035	0.048	0.019	0.039	0.050	0.068	0.067	0.065
Total	3.953	3.467	3.160	5.332	3.242	7.475	2.138	3.545
Faecal aqueous residue (None organic extractable)								
12h	50.135	45.171	49.022	47.172	43.920	42.433	35.482	33.724
48h	11.212	10.388	8.622	12.443	11.473	9.714	14.594	14.164
72h	2.686	3.137	2.778	3.115	4.684	4.913	5.418	5.686
96h	1.709	2.279	1.800	1.740	2.253	3.102	3.150	3.614
Total	65.74	60.97	62.22	64.47	62.33	60.16	58.65	57.19
Cage wash								
6h	0.467	0.573	0.825	0.197	0.478	0.506	0.468	0.311
12h	0.125	0.249	0.453	0.139	0.330	0.406	0.211	0.450
24h	0.663	0.320	0.691	0.271	0.820	0.509	0.990	0.556
48h	0.388	0.376	0.331	0.516	0.796	1.012	1.220	0.695
72h	0.213	0.260	0.225	0.137	0.455	0.527	0.762	0.455
96h	0.300	0.232	0.298	0.238	0.513	0.400	0.547	0.432
Total	2.156	2.010	2.823	1.496	3.392	3.360	4.198	2.899
Carcass	6.553	7.190	7.182	5.697	5.968	7.223	8.725	8.413
Tissues	10.77	14.06	13.81	10.62	11.77	10.23	11.32	12.92
Overall Total	100.00	100.03	100.02	100.06	100.00	100.00	100.01	100.00

Table 13

Tissue residue levels expressed as percentage of cumulative radiolabelled dose, administered as single oral daily doses of 1mg endosulfan/kg bodyweight for 28 days, present 96 hours following administration of the final dose

TISSUE	Male						Female					
	041M	042M	043M	044M	Mean	SD	045F	046F	047F	048F	Mean	SD
CARCASS/GIT	0.598	0.690	0.620	0.552	0.615	0.057	0.566	0.731	0.881	0.892	0.745	0.134
FAT**	0.078	0.116	0.067	0.067	0.082	0.023	0.304	0.296	0.419	0.340	0.340	0.056
SKIN*	0.197	0.212	0.174	0.166	0.194	0.019	0.146	0.164	0.136	0.168	0.154	0.015
UTERUS	-	-	-	-	-	-	0.001	0.003	0.002	0.004	0.003	0.001
PLASMA*	0.019	0.024	0.020	0.022	0.021	0.002	0.015	0.017	0.018	0.017	0.017	0.001
BLOOD*	0.271	0.280	0.281	0.247	0.270	0.016	0.083	0.089	0.094	0.093	0.090	0.005
EYES	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BRAIN	0.004	0.004	0.003	0.003	0.003	0.000	0.005	0.004	0.004	0.004	0.004	0.000
HEART	0.005	0.003	0.004	0.004	0.004	0.001	0.002	0.002	0.003	0.001	0.002	0.001
LUNGS	0.011	0.009	0.012	0.013	0.011	0.002	0.018	0.019	0.023	0.022	0.021	0.002
SPLEEN	0.015	0.014	0.014	0.011	0.014	0.002	0.011	0.006	0.009	0.007	0.008	0.002
LIVER	0.260	0.334	0.246	0.337	0.294	0.048	0.474	0.432	0.569	0.520	0.499	0.059
KIDNEY	0.664	0.963	0.890	0.637	0.789	0.162	0.587	0.554	0.515	0.656	0.578	0.060
THYROID	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OVARIES	-	-	-	-	-	-	0.001	0.001	0.002	0.002	0.001	0.000
TESTES	0.016	0.014	0.012	0.010	0.013	0.003	-	-	-	-	-	-
ADRENAL	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.000
MUSCLE*	0.178	0.161	0.215	0.168	0.181	0.024	0.158	0.141	0.151	0.119	0.142	0.017
BONE*	0.031	0.033	0.028	0.040	0.033	0.005	0.014	0.017	0.018	0.016	0.016	0.002

* these values were calculated using total tissue weights obtained from literature. See Appendix 4

** The values for the fat were calculated from the mean dpm/g tissue for each type of fat associated with that animal.

Table 14

Concentration of radiolabelled residues in the blood of male and female rats after receiving the last of 28 single daily oral doses of Endosulfan at 1mg/kg/day (Group 7).

Time after dosing	Concentration of radioactive residues in the blood (mg equivalents of endosulfan/kg)						Female					
	Male			Female			Mean	SD	Mean	SD		
	049M	050M	051M	052M	Mean	SD	053F	054F	055F	056F		
0.5 h	1.677	1.150	1.287	1.260	1.344	0.230	0.505	0.523	0.544	0.599	0.543	0.041
1.0 h	1.777	1.203	1.357	1.315	1.413	0.251	0.525	0.566	0.588	0.622	0.575	0.040
1.5 h	1.785	1.171	1.367	1.289	1.403	0.267	0.526	0.574	0.593	0.645	0.584	0.049
2.0 h	1.768	1.135	1.378	1.292	1.393	0.269	0.523	0.566	0.616	0.677	0.596	0.066
4.0 h	1.856	1.207	1.413	1.508	1.496	0.271	0.554	0.652	0.634	0.632	0.618	0.044
6.0 h	2.049	1.453	1.496	1.549	1.637	0.277	0.595	0.640	0.725	0.730	0.673	0.066
8.0 h	1.908	1.475	1.526	1.574	1.621	0.196	0.649	0.644	0.748	0.700	0.685	0.049
12.0 h	1.914	1.296	1.447	1.433	1.523	0.270	0.637	0.557	0.633	0.665	0.623	0.046
24.0 h	1.772	1.185	1.302	1.330	1.397	0.268	0.505	0.480	0.536	0.562	0.521	0.036
30.0 h	1.583	1.143	1.246	1.274	1.312	0.190	0.484	0.480	0.507	0.574	0.512	0.043
48.0 h	1.391	0.996	1.114	1.175	1.169	0.166	0.446	0.386	0.437	0.451	0.430	0.030
72.0 h	1.364	0.907	0.999	0.954	1.056	0.209	0.344	0.335	0.376	0.376	0.358	0.022
96.0 h	1.247	0.866	0.930	0.938	0.995	0.171	0.323	0.303	0.335	0.326	0.322	0.013
120.0 h	1.088	0.754	0.804	0.777	0.856	0.156	0.263	0.246	0.285	0.258	0.263	0.016

Table 15

Pharmacokinetic data from male and female rats following the last of 28 daily doses of 1 mg endosulfan/kg bodyweight.

Sex	Animal number	Cmax (mg/kg)	Tmax (h)	Half-life t _{1/2} (h)
Male	49M	2.05	6.00	184.8
	50M	1.48	8.00	155.4
	51M	1.53	8.00	144.8
	52M	1.57	8.00	128.2
Combined Data*		1.64	6.00	146.6
Female	53F	0.649	8.00	102.6
	54F	0.652	4.00	100.5
	55F	0.748	8.00	111.9
	56F	0.730	6.00	91.49
Combined Data*		0.685	8.00	97.75

* These results have been obtained by entering the mean data from each timepoint into the pharmacokinetic programme to get a combined result rather than meaning the individual values of Cmax, Tmax and t_{1/2}.

Figure 1.

The concentration of radioactive residues in the tissues of male rats following repeated daily administration of 1 mg endosulfan/kg bodyweight for 28 days.

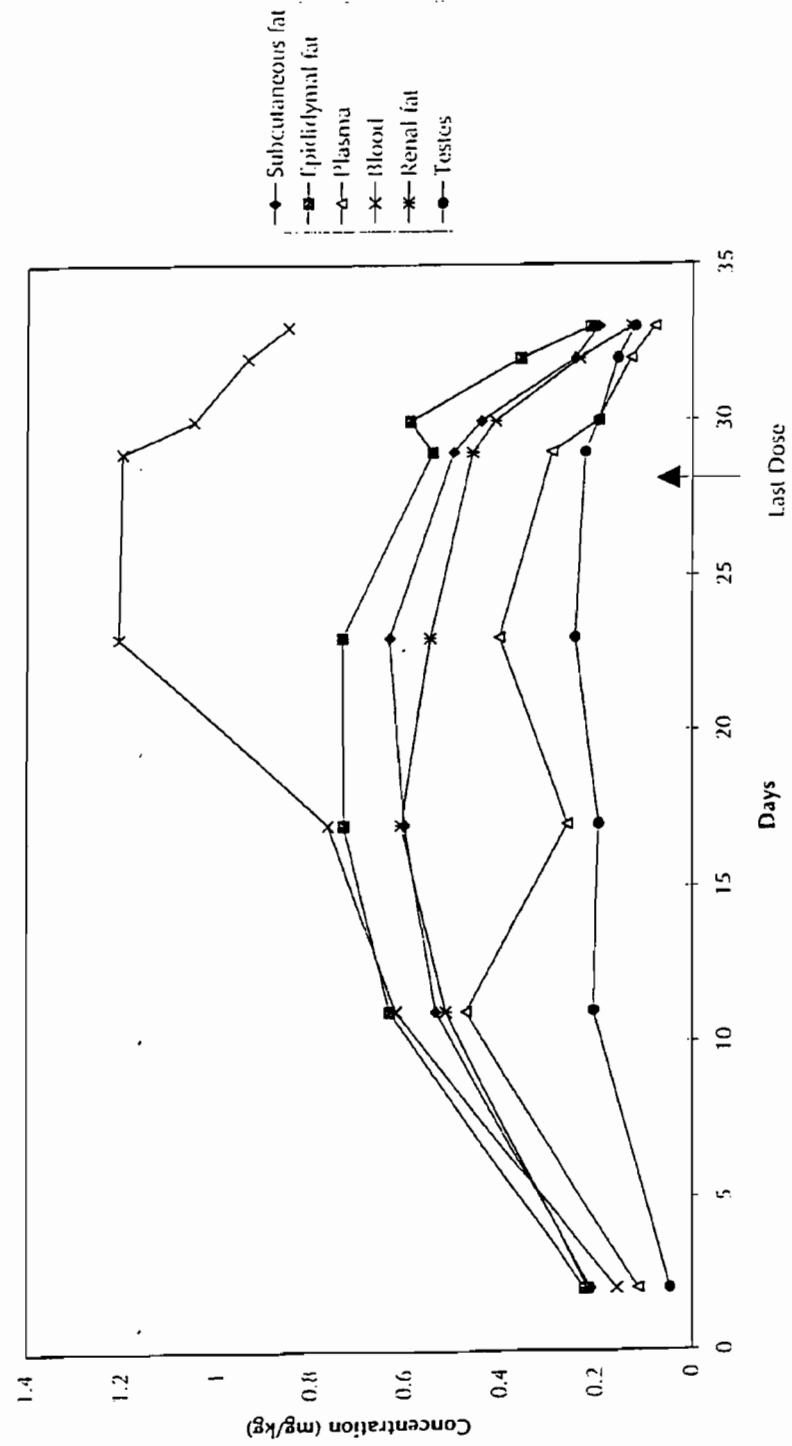


Figure 2

The concentration of radioactive residues in the tissues of female rats following repeated daily administration of 1 mg endosulfan/kg bodyweight for 28 days.

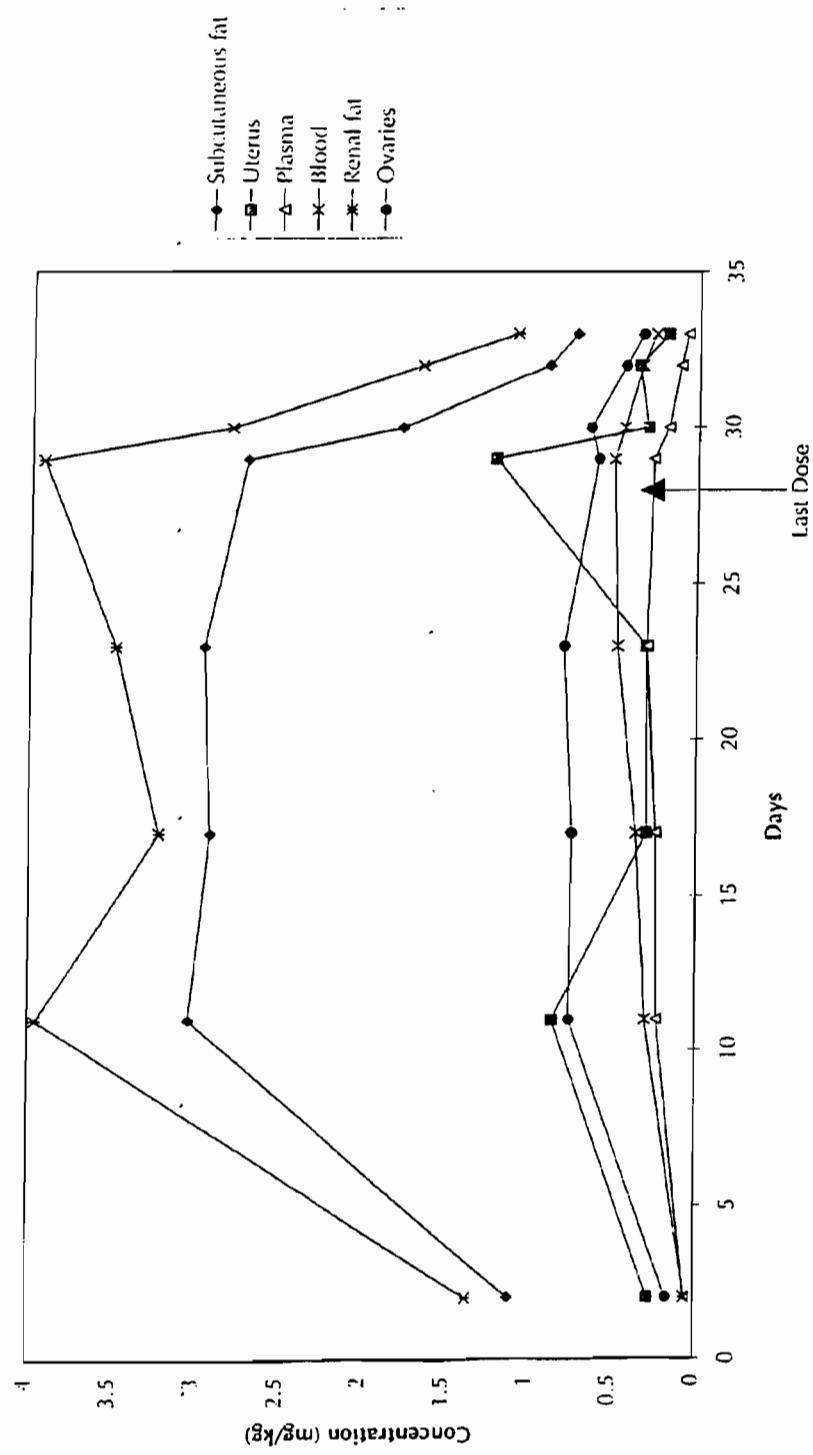


Figure 3

The concentration of radioactive residues in the liver of male and female rats following repeated daily administration of 1 mg endosulfan/kg bodyweight for 28 days.

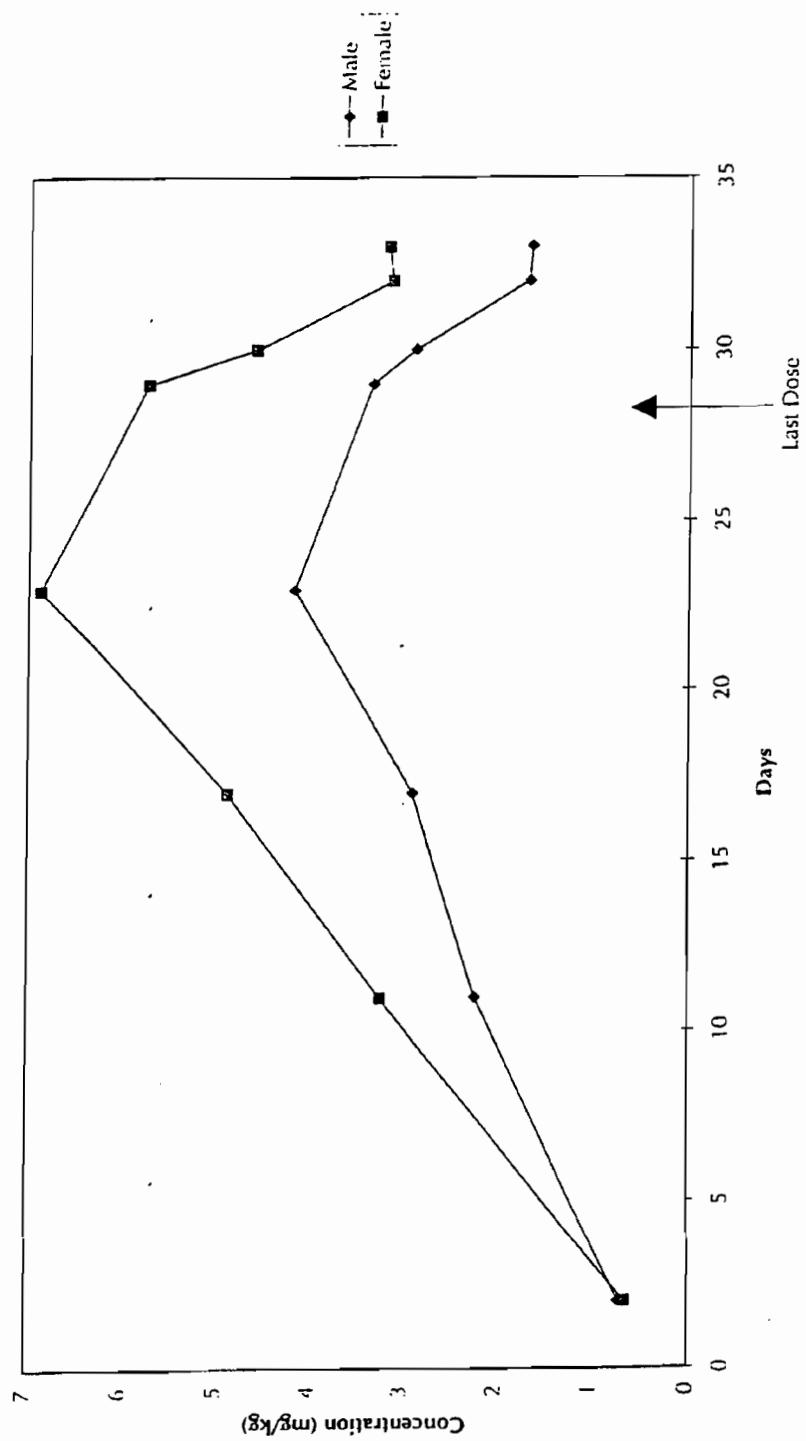


Figure 4

The concentration of radioactive residues in the kidney of male and female rats following repeated daily administration of 1 mg endosulfan/kg bodyweight for 28 days.

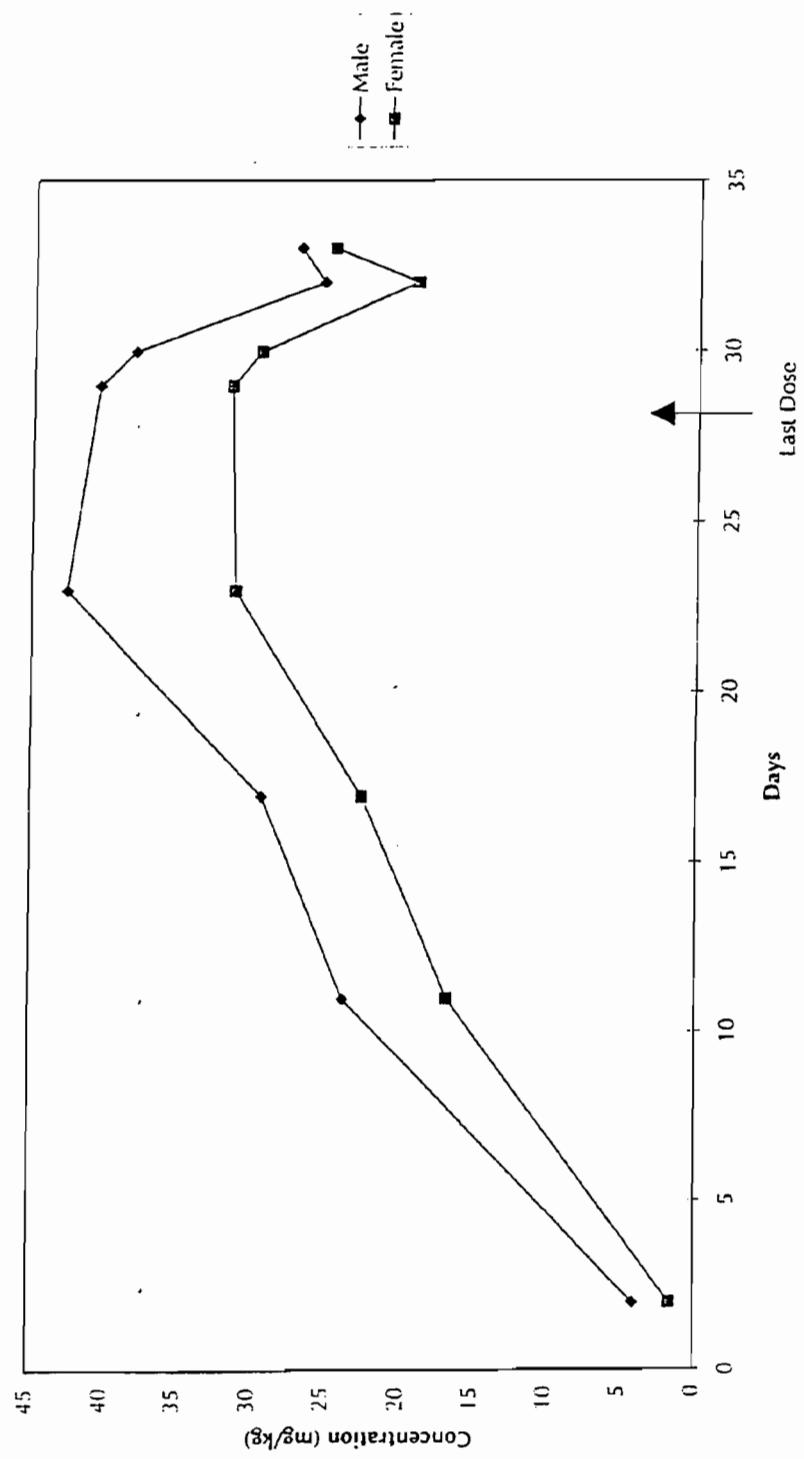
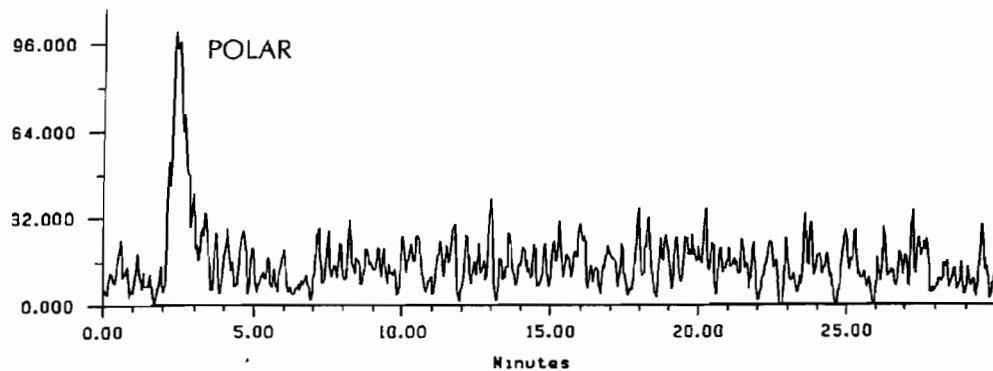


Figure 5

HPLC analysis of acetonitrile/water extract of endosulfan residues present in the kidney of rats following 28 daily doses of radiolabelled [^{14}C]Endosulfan at 1 mg/kg bodyweight.

Radiochromatogram of Male Kidney extract



Radiochromatogram of Female Kidney extract

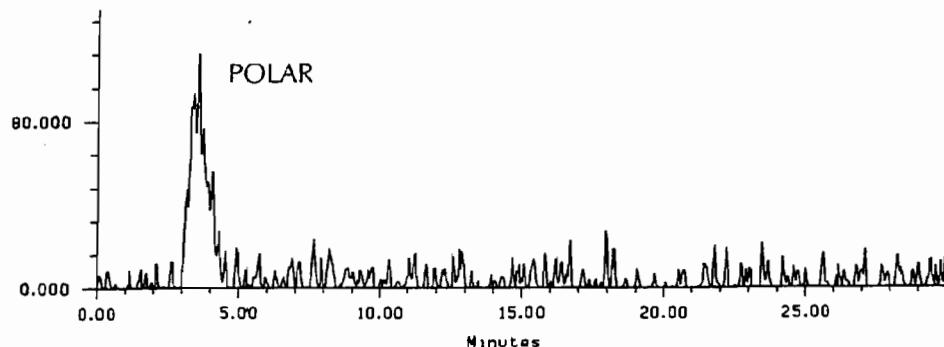


Figure 6

HPLC analysis of hexane extract of endosulfan residues present in the combined renal, subcutaneous and epididymal fat of rats in groups 5 following 28 daily doses of radiolabelled [^{14}C]Endosulfan at 1 mg/kg bodyweight.

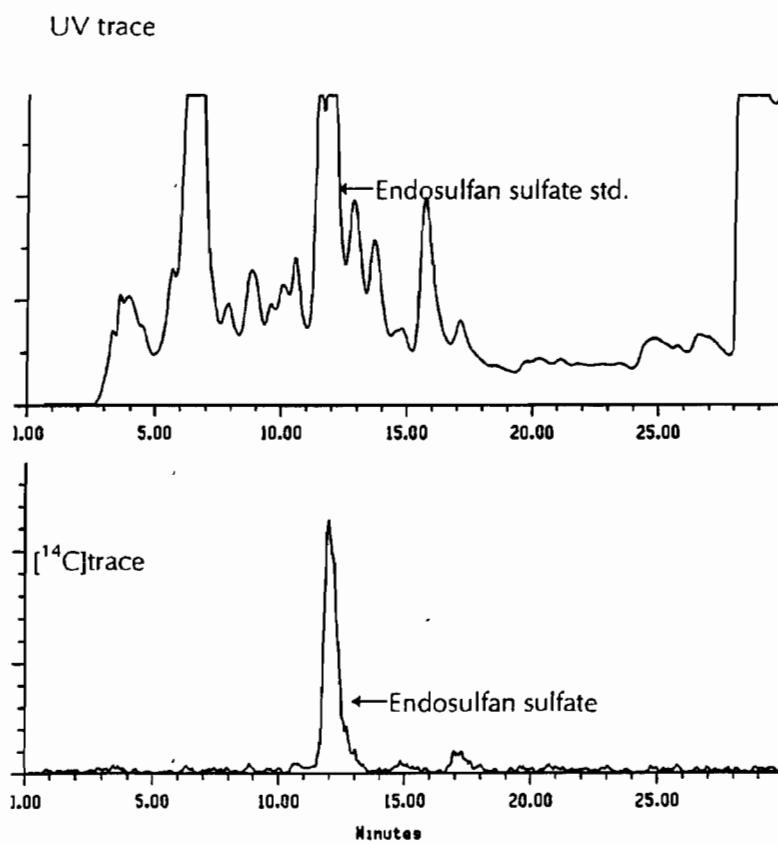
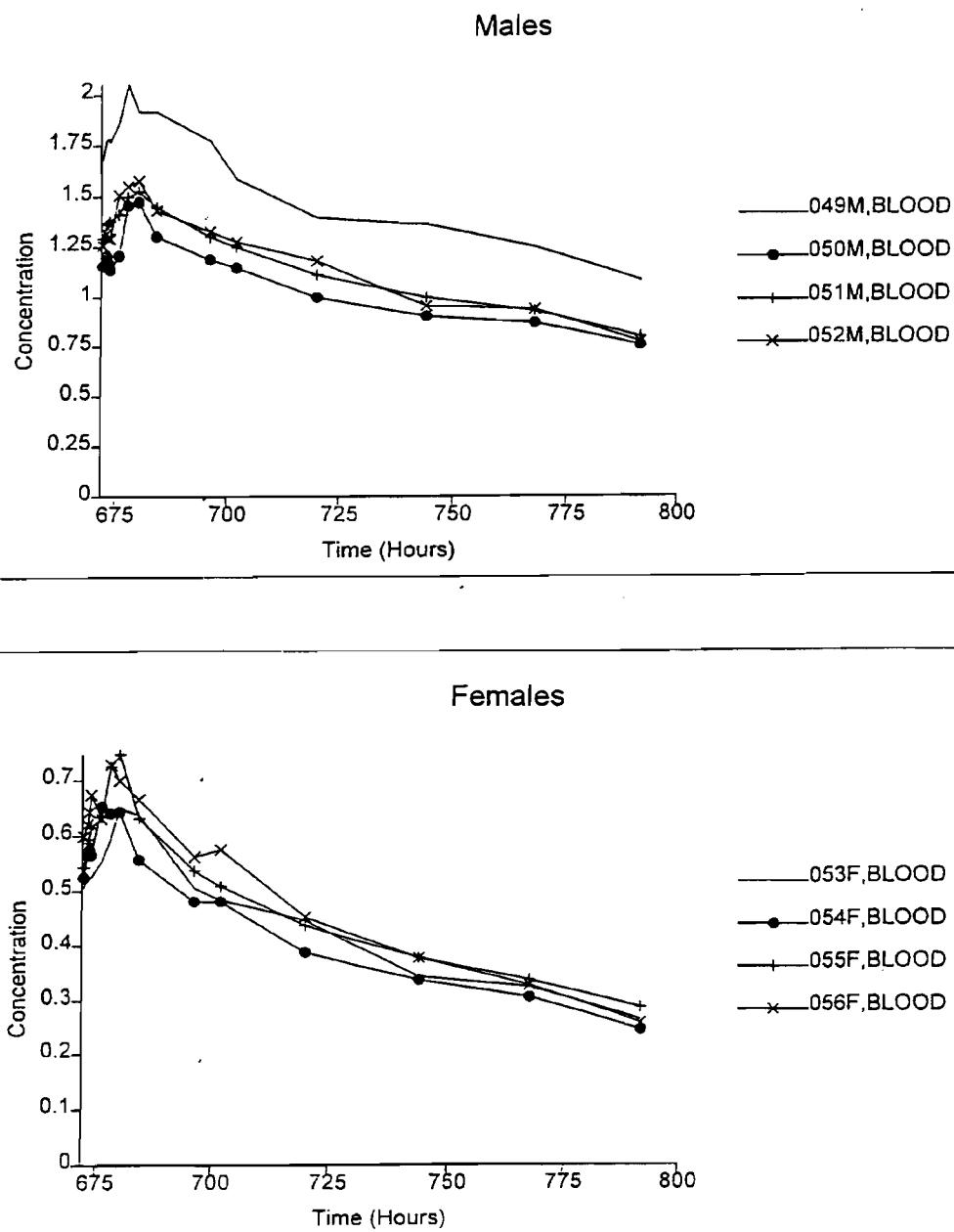


Figure 7

Concentration of endosulfan residues in the blood of rats following the last of 28 daily doses of radiolabelled [¹⁴C]Endosulfan at 1 mg/kg bodyweight. The rats received their final dose 672 hours after the start of the study (day 28).



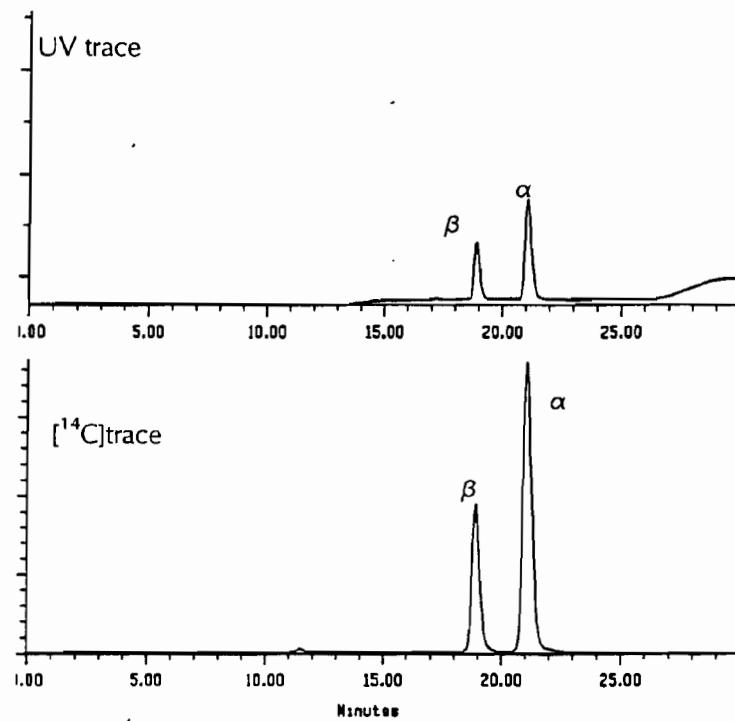
APPENDIX 1**KEY DATES**

Protocol approved by study Director	:	1/8/97
Animals received	:	29/10/97
First dose for Group 2	:	3/11/97
First dose all other animals	:	4/11/97
Final dose Group 1	:	4/11/97
Group 2	:	12/11/97
Group 3	:	19/11/97
Group 4	:	25/11/97
Groups 5 - 8	:	1/12/97
Necropsy Group 1	:	5/11/97
Group 2	:	13/11/97
Group 3	:	20/11/97
Group 4	:	26/11/97
Group 5	:	2/12/97
Group 8	:	3/12/97
Group 6	:	5/12/97
Group 7	:	6/12/97
Tissue analysis completed	:	12/1/98
Report preparation	:	February/March 98

APPENDIX 2**COMPOUND PURITY, DOSE STABILITY AND DOSE PREPARATION**

1. Compound purity

The purity of the radiolabelled endosulfan was determined by HPLC in solvent system 1. The result showed that the radiochemical purity of the batch of endosulfan was 98.26% (Figure 8)

Figure 8**Radiochemical purity of [¹⁴C] radiolabelled Endosulfan, Batch Z27052-0**

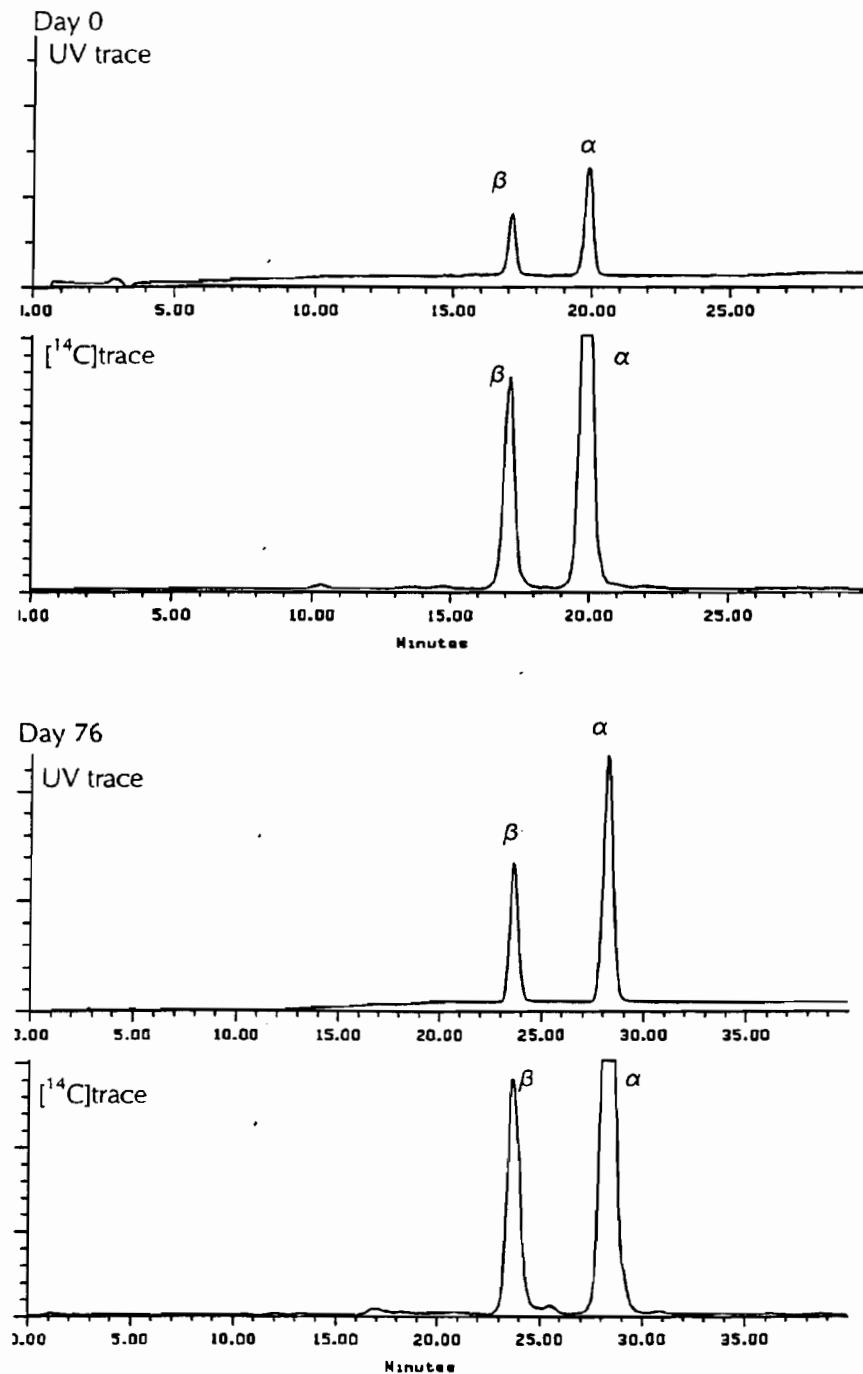
2 Dose Stability

The stability of the radiolabelled endosulfan in the dose solution (corn oil) was determined by HPLC analysis in solvent system 1 prior to the start of the study. The results (Table 17; Figures 9) showed that the compound did not degrade over a period of 34 days. The stability check was continued after the start of the study showing that the radiolabelled endosulfan was stable for up to 76 days in corn oil. The analysis on day 76 was carried out using HPLC solvent system 2. This final analysis was conducted as part of a separate study (Tox 97089H).

Table 17**The stability of radiolabelled endosulfan in corn oil.**

Number of days in corn oil	Purity as determined by HPLC analysis
1	99.43
5	96.84
8	98.45
12	98.72
14	95.86
34	98.12
76	96.80

Figure 9

Stability of [¹⁴C] Endosulfan as a solution in corn oil over a period of 76 days

3. Dose preparation

Due to the large number of doses required for this study, it was decided to make up two dose solutions. Dose 1 was used to dose all animals up to and including day 9, and dose 2 was used to dose all of the remaining animals. The dose preparation data is shown on pages 51 - 54. Due to a small fault in the database programme, the **specific activity** has been called **salt activity**.

The radiochemical purity of endosulfan in these two solutions was determined by HPLC in solvent system 1. The results showed that the mean radiochemical purity of dose 1 was 97.42% and was 97.80% for dose 2 (Table 18: Figure 11)

Table 18**The radiochemical purity of the dose solutions**

Dose	Day sampled	Radiochemical purity	Mean ± SAD.
1	0	96.61	
	4	97.71	97.42 ± 0.71
	9	97.95	
2	10	97.68	
	16	97.73	
	23	97.33	97.80 ± 0.47
	28	98.44	

Dose 1.**Treatment report**

Toxicokinetics of Endosulfan in the rat following repeated daily oral administration of 1mg/kg bodyweight for up to 28 days

Dose design

Active batch: Z27052-0
Active cmpd req: 98.715 mg
Created: 29/01/98 15:22
Dose vehicle:
Inactive batch: HOE00267100ZD990008
Inactive cmpd req: 163.285 mg
Labelled salt pur: 100.00 %
Nominal dose conc: 0.400 mg/ml
Preparation method: 2
Radiochemical dosage: 8.000 µCi/ml
Required dose volume: 655.0 ml
Salt activity: 53.0820 µCi/mg
Treatment: dose1
Unlabelled par. MWt: N.C.
Unlabelled salt pur: 100.00 %

Dose preparation

Weight of dose: 599.78000 g
Weight of flask: 0.000 g
Weight of flask+both: 0.16587 g
Weight of flask+lab: 0.09868 g

Analysis design

Aliquots per flask: 3
Nom vol of dil flask: 100.0 ml
Nom vol of dose: 500.0 µl
Nominal count volume: 100 µl
Number of replicates: 6

Analysis preparation

	Flask 1	Flask 2	Flask 3	Flask 4	Flask 5	Flask 6
Diluted dose weight	155.30700 g	157.30500 g	156.77600 g	155.47900 g	155.43200 g	148.59400 g
Flask weight	65.39500 g	67.05800 g	66.46300 g	65.83500 g	65.68800 g	58.78300 g
Undiluted dose weight	65.85300 g	67.52700 g	66.91800 g	66.29200 g	66.15300 g	59.23800 g
Aliquot concentration 1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aliquot count 1	8332 dpm	8676 dpm	8280 dpm	8070 dpm	8330 dpm	7983 dpm
Aliquot weight 1	0.08800 g	0.09100 g	0.08900 g	0.09000 g	0.08900 g	0.08900 g
Aliquot concentration 2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aliquot count 2	8344 dpm	8539 dpm	8164 dpm	8373 dpm	8434 dpm	8379 dpm
Aliquot weight 2	0.08900 g	0.08800 g	0.08700 g	0.08900 g	0.09000 g	0.08800 g
Aliquot concentration 3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aliquot count 3	8263 dpm	8615 dpm	8211 dpm	8400 dpm	8462 dpm	8344 dpm
Aliquot weight 3	0.08700 g	0.08800 g	0.08800 g	0.08900 g	0.08900 g	0.08800 g

Balance(s): EB/11 Sartorius/Radiosynthesis
Counter(s): Wallac Berthold 1409

Analysis results

Dose spec act: 18.8095 μ Ci/mg
dpm Per g: 18409865.8 dpm/g
Drug concentration: 0.4409 mg/g
Spec grav of dose: 0.92 g/ml

Dose 2

Treatment report

Toxicokinetics of Endosulfan in the rat following repeated daily oral administration of 1mg/kg bodyweight for up to 28 days

Dose design

Active batch: z27052-0
Active cmpd req: 181.003 mg
Created: 30/01/98 09:38
Dose vehicle:
Inactive batch: HOE002677100zd990008
Inactive cmpd req: 299.397 mg
Labelled salt pur: 100.00 %
Nominal dose conc: 0.400 mg/ml
Preparation method: 2
Radiochemical dosage: 8.000 µCi/ml
Required dose volume: 1201.0 ml
Salt activity: 53.0820 µCi/mg
Treatment: dose2.
Unlabelled par. MWt: N.C.
Unlabelled salt pur: 100.00 %

Dose preparation

Weight of dose: 1099.08400 g
Weight of flask: 0.00000 g
Weight of flask+both: 0.30046 g
Weight of flask+lab: 0.18237 g

Analysis design

Aliquots per flask: 3
Nom vol of dil flask: 100.0 ml
Nom vol of dose: 500.0 µl
Nominal count volume: 100 µl
Number of replicates: 6

Analysis preparation

	Flask 1	Flask 2	Flask 3	Flask 4	Flask 5	Flask 6
Diluted dose weight	154.58200 g	154.34600 g	154.76700 g	155.58200 g	147.89900 g	147.86800 g
Flask weight	65.23700 g	64.77100 g	65.62500 g	65.20800 g	57.87100 g	57.55800 g
Undiluted dose weight	65.70000 g	65.23600 g	66.09000 g	65.67300 g	58.33800 g	58.02100 g
Aliquot concentration 1	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aliquot count 1	17044 dpm	17200 dpm	17142 dpm	16959 dpm	17682 dpm	18261 dpm
Aliquot weight 1	0.17700 g	0.17800 g	0.17800 g	0.17700 g	0.18400 g	0.18800 g
Aliquot concentration 2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aliquot count 2	17160 dpm	17029 dpm	17170 dpm	17102 dpm	18478 dpm	18182 dpm
Aliquot weight 2	0.17700 g	0.17600 g	0.17800 g	0.18000 g	0.18900 g	0.18700 g
Aliquot concentration 3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Aliquot count 3	17043 dpm	16835 dpm	17103 dpm	17534 dpm	17465 dpm	18603 dpm
Aliquot weight 3	0.17600 g	0.17400 g	0.17700 g	0.18100 g	0.17900 g	0.19100 g

Balance(s): EB/11 Sartorius/Radiosynthesis
Counter(s): Wallac Berthold 1409

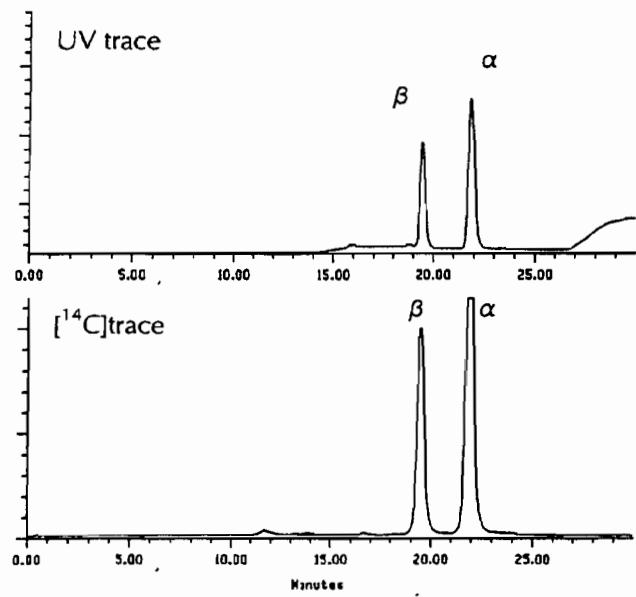
Analysis results

Dose spec act: 19.1687 μ Ci/mg
dpm Per g: 18686145.5 dpm/g
Drug concentration: 0.4391 mg/g
Spec grav of dose: 0.92 g/ml

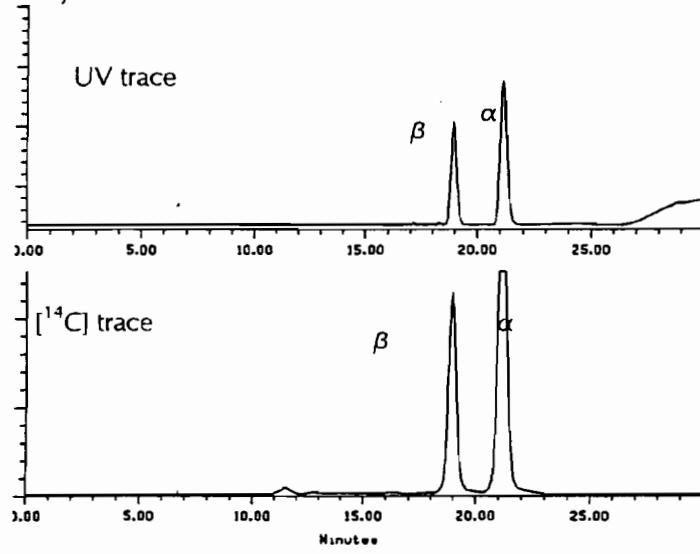
Figure 10

Radiochemical purity of [¹⁴C] Endosulfan dose 1 administered over the dosing period Day 1 to Day 9

Day 0



Day 4



Day 9

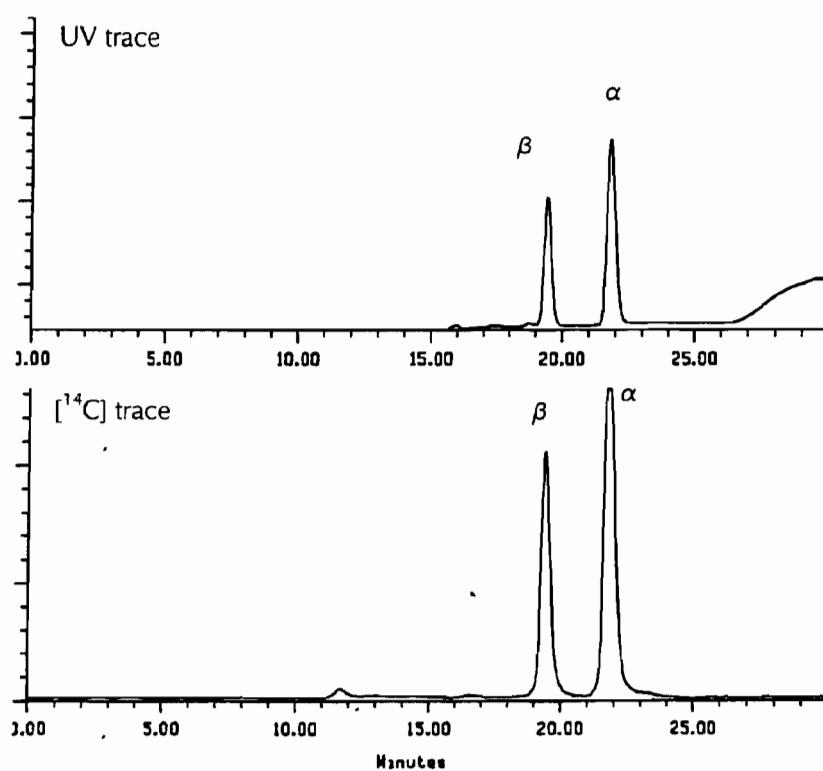
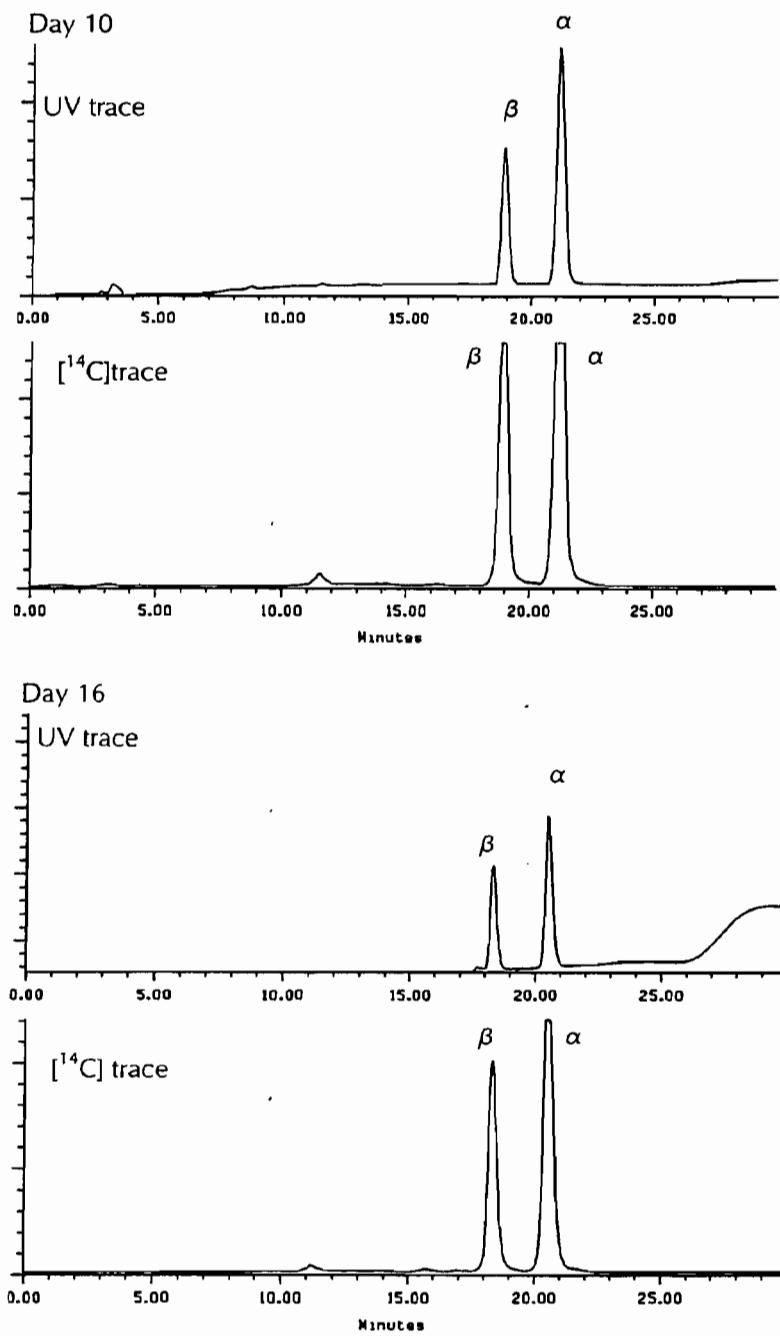
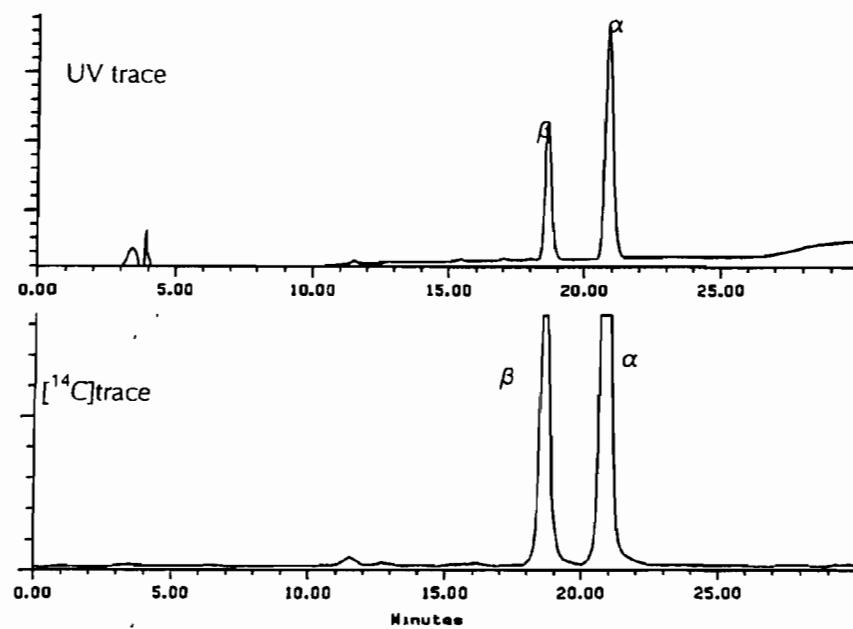


Figure 11

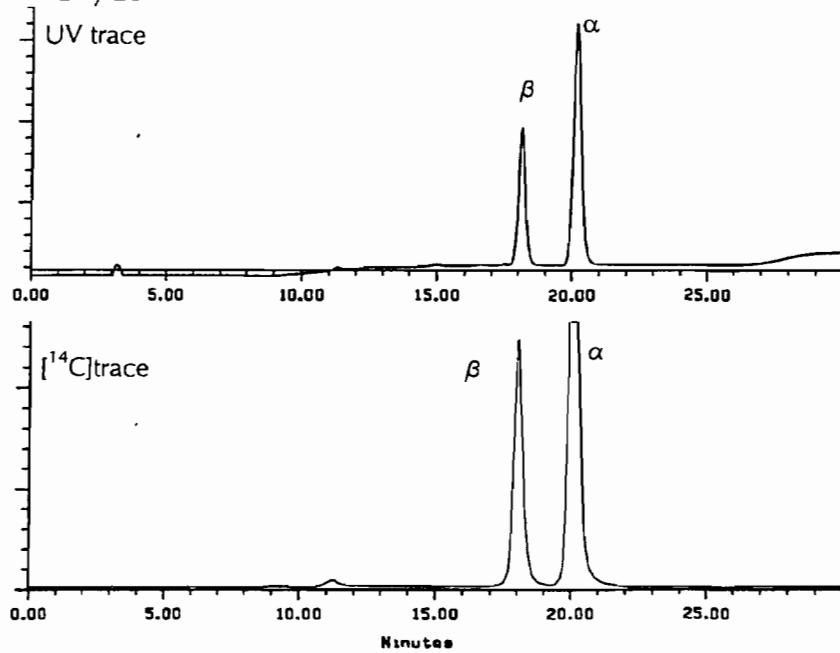
Radiochemical purity of [^{14}C] Endosulfan DOSE 2 administered over the dosing period Day 10 to Day 28.



Day 23



Day 28



APPENDIX 3**ANIMAL DOSING DATA****GROUPS 1 - 5 PLUS 8**

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
001M	Day 1	dose 1	212.000 g	0.488 g	0.2151 mg	8984014.5295	4.0469 µCi	1.0149 mg/kg	1.486
002M	Day 1	dose 1	205.000 g	0.505 g	0.2226 mg	9296992.2489	4.1878 µCi	1.0861 mg/kg	8.607
003M	Day 1	dose 1	209.000 g	0.482 g	0.2125 mg	8873555.3346	3.9971 µCi	1.0168 mg/kg	1.677
004M	Day 1	dose 1	206.000 g	0.483 g	0.2129 mg	8891965.2003	4.0054 µCi	1.0337 mg/kg	3.371
005F	Day 1	dose 1	185.000 g	0.430 g	0.1896 mg	7916242.3110	3.5659 µCi	1.0247 mg/kg	2.475
006F	Day 1	dose 1	176.000 g	0.426 g	0.1878 mg	7842602.8476	3.5327 µCi	1.0671 mg/kg	6.713
007F	Day 1	dose 1	181.000 g	0.434 g	0.1913 mg	7989881.7742	3.5990 µCi	1.0571 mg/kg	5.714
008F	Day 1	dose 1	190.000 g	0.456 g	0.2010 mg	8394988.8227	3.7815 µCi	1.0581 mg/kg	5.811
009M	Day 1	dose 1	204.000 g	0.471 g	0.2077 mg	8671046.8102	3.9059 µCi	1.0179 mg/kg	1.791
009M	Day 2	dose 1	217.000 g	0.483 g	0.2129 mg	8891965.2004	4.0054 µCi	0.9813 mg/kg	1.869
009M	Day 3	dose 1	222.000 g	0.529 g	0.2332 mg	9738819.0290	4.3869 µCi	1.0506 mg/kg	5.057
009M	Day 4	dose 1	231.000 g	0.522 g	0.2301 mg	9609649.9681	4.3288 µCi	0.9963 mg/kg	0.373
009M	Day 5	dose 1	237.000 g	0.538 g	0.2372 mg	9904507.8216	4.4615 µCi	1.0008 mg/kg	0.082
009M	Day 6	dose 1	248.000 g	0.533 g	0.2394 mg	9996557.1507	4.5030 µCi	0.9653 mg/kg	3.469
009M	Day 7	dose 1	255.000 g	0.559 g	0.2465 mg	10291115.0041	4.6356 µCi	0.9865 mg/kg	3.352
009M	Day 8	dose 1	263.000 g	0.608 g	0.2681 mg	11193198.4303	5.0420 µCi	1.0192 mg/kg	1.922
009M	Day 9	dose 1	272.000 g	0.626 g	0.2760 mg	11524576.0153	5.1913 µCi	1.0147 mg/kg	1.467
009M	Day 10	dose 1	279.000 g	0.657 g	0.2897 mg	12095281.8563	5.4483 µCi	1.0382 mg/kg	3.820
010M	Day 1	dose 1	213.000 g	0.484 g	0.2134 mg	8910375.0663	4.0137 µCi	1.0018 mg/kg	0.181
010M	Day 2	dose 1	212.000 g	0.520 g	0.2293 mg	9573130.2364	4.3122 µCi	1.0814 mg/kg	8.140
010M	Day 3	dose 1	231.000 g	0.548 g	0.2416 mg	1008806.4800	4.5444 µCi	1.0459 mg/kg	4.590
010M	Day 4	dose 1	237.000 g	0.546 g	0.2407 mg	10051786.7493	4.5278 µCi	1.0157 mg/kg	1.570
010M	Day 5	dose 1	243.000 g	0.571 g	0.2517 mg	10512033.3942	4.7352 µCi	1.0360 mg/kg	3.598
010M	Day 6	dose 1	250.000 g	0.536 g	0.2363 mg	9867688.0898	4.4449 µCi	0.9452 mg/kg	5.475

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
010M	Day 7	dose1	260.000 g	0.609 g	0.2685 mg	11211608.2960	5.0503 µCi	1.0327 mg/kg	3.268
010M	Day 8	dose1	267.000 g	0.641 g	0.2826 mg	11800724.0030	5.3156 µCi	1.0584 mg/kg	5.844
010M	Day 9	dose1	278.000 g	0.653 g	0.2879 mg	12021612.3929	5.4152 µCi	1.0356 mg/kg	3.559
010M	Day 10	dose1	287.000 g	0.625 g	0.2755 mg	11508166.1194	5.1830 µCi	0.9601 mg/kg	3.990
011M	Day 1	dose1	205.000 g	0.455 g	0.2006 mg	8376488.9566	3.7732 µCi	0.9785 mg/kg	2.146
011M	Day 2	dose1	212.000 g	0.495 g	0.2182 mg	9112883.5504	4.1049 µCi	1.0294 mg/kg	2.941
011M	Day 3	dose1	219.000 g	0.527 g	0.2323 mg	9701999.2972	4.3703 µCi	1.0609 mg/kg	6.093
011M	Day 4	dose1	227.000 g	0.542 g	0.2390 mg	9978147.2848	4.4947 µCi	1.0527 mg/kg	5.267
011M	Day 5	dose1	230.000 g	0.546 g	0.2407 mg	10051786.7481	4.5278 µCi	1.0466 mg/kg	4.661
011M	Day 6	dose1	241.000 g	0.542 g	0.2390 mg	9978147.2848	4.4947 µCi	0.9915 mg/kg	0.848
011M	Day 7	dose1	248.000 g	0.569 g	0.2509 mg	10475213.6624	4.7186 µCi	1.0115 mg/kg	1.154
011M	Day 8	dose1	268.000 g	0.485 g	0.2138 mg	8928784.9320	4.0220 µCi	1.0280 mg/kg	2.801
011M	Day 9	dose1	260.000 g	0.605 g	0.2667 mg	11137968.8327	5.0171 µCi	1.0259 mg/kg	2.589
011M	Day 10	dose1	274.000 g	0.642 g	0.2830 mg	11819133.8689	5.3239 µCi	1.0330 mg/kg	3.301
012M	Day 1	dose1	212.000 g	0.497 g	0.2191 mg	9149703.3219	4.1215 µCi	1.0336 mg/kg	3.357
012M	Day 2	dose1	215.000 g	0.510 g	0.2248 mg	93895031.5779	4.2293 µCi	1.0458 mg/kg	4.581
012M	Day 3	dose1	224.000 g	0.527 g	0.2323 mg	9701999.2973	4.3703 µCi	1.0372 mg/kg	3.725
012M	Day 4	dose1	232.000 g	0.553 g	0.2438 mg	10180655.8090	4.5859 µCi	1.0509 mg/kg	5.089
012M	Day 5	dose1	239.000 g	0.560 g	0.2469 mg	10309524.8659	4.6439 µCi	1.0330 mg/kg	3.302
012M	Day 6	dose1	252.000 g	0.574 g	0.2531 mg	10567262.9916	4.7600 µCi	1.0042 mg/kg	0.423
012M	Day 7	dose1	260.000 g	0.598 g	0.2641 mg	11021509.6377	4.9673 µCi	1.0157 mg/kg	1.572
012M	Day 8	dose1	270.000 g	0.633 g	0.2791 mg	11653445.0763	5.2493 µCi	1.0336 mg/kg	3.362
012M	Day 9	dose1	278.000 g	0.641 g	0.2826 mg	11800724.0029	5.3156 µCi	1.0166 mg/kg	1.656
012M	Day 10	dose1	285.000 g	0.666 g	0.2936 mg	12260970.6489	5.5230 µCi	1.0160 mg/kg	1.601

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose admin	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
013F	Day 1	dose1	171.000 g	0.388 g	0.1711 mg	7143027.9456	3.2176 µCi	1.0004 mg/kg	0.036
013F	Day 2	dose1	176.000 g	0.414 g	0.1825 mg	7621684.4574	3.4332 µCi	1.0371 mg/kg	3.707
013F	Day 3	dose1	180.000 g	0.417 g	0.1838 mg	7676914.0549	3.4581 µCi	1.0214 mg/kg	2.137
013F	Day 4	dose1	183.000 g	0.432 g	0.1905 mg	7953062.0426	3.5825 µCi	1.0408 mg/kg	4.077
013F	Day 5	dose1	179.000 g	0.421 g	0.1856 mg	7750553.5182	3.4912 µCi	1.0369 mg/kg	3.693
013F	Day 6	dose1	188.000 g	0.442 g	0.1949 mg	8137160.7008	3.6654 µCi	1.0365 mg/kg	3.654
013F	Day 7	dose1	191.000 g	0.435 g	0.1918 mg	8008291.8400	3.6073 µCi	1.0041 mg/kg	0.410
013F	Day 8	dose1	193.000 g	0.458 g	0.2019 mg	8431718.5545	3.7981 µCi	1.0462 mg/kg	4.623
013F	Day 9	dose1	190.000 g	0.448 g	0.1975 mg	8247619.8959	3.7151 µCi	1.0395 mg/kg	3.955
013F	Day 10	dose1	200.000 g	0.470 g	0.2072 mg	8652636.9445	3.8976 µCi	1.0361 mg/kg	3.607
014F	Day 1	dose1	171.000 g	0.397 g	0.1750 mg	7308716.7380	3.2922 µCi	1.0236 mg/kg	2.356
014F	Day 2	dose1	176.000 g	0.421 g	0.1856 mg	7750553.5183	3.4912 µCi	1.0546 mg/kg	5.460
014F	Day 3	dose1	181.000 g	0.440 g	0.1940 mg	8100340.9693	3.6468 µCi	1.0718 mg/kg	7.175
014F	Day 4	dose1	177.000 g	0.404 g	0.1781 mg	7437585.7991	3.3503 µCi	1.0063 mg/kg	0.630
014F	Day 5	dose1	186.000 g	0.437 g	0.1927 mg	8045111.3718	3.6239 µCi	1.0358 mg/kg	3.583
014F	Day 6	dose1	185.000 g	0.436 g	0.1922 mg	8026701.5059	3.6156 µCi	1.0171 mg/kg	1.706
014F	Day 7	dose1	192.000 g	0.430 g	0.1896 mg	7916242.3109	3.5659 µCi	0.9874 mg/kg	1.261
014F	Day 8	dose1	188.000 g	0.450 g	0.1984 mg	8284439.6277	3.7317 µCi	1.0553 mg/kg	5.530
014F	Day 9	dose1	196.000 g	0.448 g	0.1975 mg	8247619.8961	3.7151 µCi	1.0077 mg/kg	0.773
014F	Day 10	dose1	200.000 g	0.445 g	0.1962 mg	8192390.2985	3.6903 µCi	0.9810 mg/kg	1.904
015F	Day 1	dose1	174.000 g	0.400 g	0.1764 mg	7363946.3356	3.3171 µCi	1.0135 mg/kg	1.352
015F	Day 2	dose1	182.000 g	0.429 g	0.1891 mg	7897832.4451	3.5576 µCi	1.0392 mg/kg	3.922
015F	Day 3	dose1	186.000 g	0.457 g	0.2015 mg	8413308.6685	3.7398 µCi	1.0832 mg/kg	8.324
015F	Day 4	dose1	186.000 g	0.431 g	0.1900 mg	7934652.1766	3.5742 µCi	1.0216 mg/kg	2.161

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
015F	Day 5	dose1	182.000 g	0.422 g	0.1861 mg	7768963.3840	3.4995 µCi	1.0223 mg/kg	2.226
015F	Day 6	dose1	192.000 g	0.422 g	0.1861 mg	7768963.3843	3.4995 µCi	0.9690 mg/kg	3.098
015F	Day 7	dose1	194.000 g	0.454 g	0.2002 mg	8358079.0909	3.7649 µCi	1.0318 mg/kg	3.175
015F	Day 8	dose1	198.000 g	0.444 g	0.1958 mg	8173980.4326	3.6820 µCi	0.9886 mg/kg	1.136
015F	Day 9	dose1	193.000 g	0.436 g	0.1922 mg	8026701.5058	3.6156 µCi	0.9860 mg/kg	0.402
015F	Day 10	dose1	200.000 g	0.454 g	0.2002 mg	8358079.0910	3.7649 µCi	1.0008 mg/kg	0.080
016F	Day 1	dose1	173.000 g	0.403 g	0.1777 mg	7419175.9333	3.3420 µCi	1.0270 mg/kg	2.702
016F	Day 2	dose1	173.000 g	0.409 g	0.1803 mg	7529635.1283	3.3917 µCi	1.0423 mg/kg	4.231
016F	Day 3	dose1	175.000 g	0.430 g	0.1896 mg	7916242.3108	3.5659 µCi	1.0833 mg/kg	8.331
016F	Day 4	dose1	178.000 g	0.422 g	0.1861 mg	7768963.3840	3.4995 µCi	1.0452 mg/kg	4.523
016F	Day 5	dose1	181.000 g	0.418 g	0.1843 mg	7695323.9209	3.4664 µCi	1.0182 mg/kg	1.816
016F	Day 6	dose1	179.000 g	0.409 g	0.1803 mg	7529635.1283	3.3917 µCi	1.0074 mg/kg	0.737
016F	Day 7	dose1	181.000 g	0.420 g	0.1852 mg	7732143.6524	3.4829 µCi	1.0230 mg/kg	2.304
016F	Day 8	dose1	190.000 g	0.457 g	0.2015 mg	8413308.6886	3.7898 µCi	1.0604 mg/kg	6.043
016F	Day 9	dose1	192.000 g	0.449 g	0.1980 mg	8266029.7619	3.7234 µCi	1.0310 mg/kg	3.102
016F	Day 10	dose1	192.000 g	0.453 g	0.1997 mg	8339669.2252	3.7566 µCi	1.0402 mg/kg	4.020
017M	Day 1	dose1	227.000 g	0.553 g	0.2350 mg	9812458.4922	4.4200 µCi	1.0352 mg/kg	3.519
017M	Day 2	dose1	243.000 g	0.556 g	0.2451 mg	10235895.4065	4.6108 µCi	1.0088 mg/kg	0.876
017M	Day 3	dose1	251.000 g	0.564 g	0.2487 mg	10363164.3334	4.6771 µCi	0.9907 mg/kg	0.934
017M	Day 4	dose1	259.000 g	0.587 g	0.2588 mg	10806591.2475	4.8678 µCi	0.9992 mg/kg	0.079
017M	Day 5	dose1	272.000 g	0.599 g	0.2641 mg	11027509.6377	4.9873 µCi	0.9709 mg/kg	2.909
017M	Day 6	dose1	285.000 g	0.667 g	0.2941 mg	12279380.5149	5.5313 µCi	1.0318 mg/kg	3.181
017M	Day 7	dose1	297.000 g	0.662 g	0.2919 mg	12187331.1855	5.4898 µCi	0.9827 mg/kg	1.730
017M	Day 8	dose1	304.000 g	0.668 g	0.2945 mg	12297790.3806	5.5395 µCi	0.9688 mg/kg	3.122

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose err% (%)
017M	Day 9	dose1	316.000 g	0.732 g	0.3227 mg	13476021.7944	6.0703 µCi	1.0213 mg/kg	2.128
017M	Day 10	dose2	327.000 g	0.740 g	0.3249 mg	13827747.6700	6.2287 µCi	0.9937 mg/kg	0.630
017M	Day 11	dose2	339.000 g	0.789 g	0.3465 mg	14743368.7995	6.6412 µCi	1.0220 mg/kg	2.200
017M	Day 12	dose2	349.000 g	0.806 g	0.3539 mg	15061033.2731	6.7842 µCi	1.0141 mg/kg	1.411
017M	Day 13	dose2	360.000 g	0.830 g	0.3645 mg	15509500.7651	6.9863 µCi	1.0124 mg/kg	1.239
017M	Day 14	dose2	366.000 g	0.854 g	0.3750 mg	15957868.2569	7.1883 µCi	1.0246 mg/kg	2.459
017M	Day 15	dose2	377.000 g	0.840 g	0.3689 mg	15696362.2200	7.0704 µCi	0.9784 mg/kg	2.161
017M	Day 16	dose2	385.000 g	0.890 g	0.3908 mg	16630669.4950	7.4913 µCi	1.0151 mg/kg	1.509
018M	Day 1	dose1	209.000 g	0.458 g	0.2019 mg	8431718.5544	3.7981 µCi	0.9661 mg/kg	3.386
018M	Day 2	dose1	215.000 g	0.511 g	0.2253 mg	9407441.4439	4.2376 µCi	1.0479 mg/kg	4.786
018M	Day 3	dose1	222.000 g	0.514 g	0.2266 mg	9462671.0413	4.2625 µCi	1.0208 mg/kg	2.078
018M	Day 4	dose1	230.000 g	0.544 g	0.2398 mg	10014967.0165	4.5112 µCi	1.0428 mg/kg	4.278
018M	Day 5	dose1	239.000 g	0.551 g	0.2429 mg	10143836.0774	4.5693 µCi	1.0164 mg/kg	1.642
018M	Day 6	dose1	248.000 g	0.581 g	0.2562 mg	10696132.0527	4.8181 µCi	1.0329 mg/kg	3.287
018M	Day 7	dose1	260.000 g	0.596 g	0.2628 mg	10972280.0403	4.9425 µCi	1.0106 mg/kg	1.063
018M	Day 8	dose1	267.000 g	0.600 g	0.2645 mg	11045919.5036	4.9756 µCi	0.9907 mg/kg	0.926
018M	Day 9	dose1	275.000 g	0.636 g	0.2804 mg	11708674.6737	5.2742 µCi	1.0196 mg/kg	1.964
018M	Day 10	dose2	284.000 g	0.666 g	0.2924 mg	12444972.9029	5.6058 µCi	1.0291 mg/kg	2.974
018M	Day 11	dose2	287.000 g	0.673 g	0.2955 mg	12575775.9215	5.6648 µCi	1.0297 mg/kg	2.969
018M	Day 12	dose2	297.000 g	0.692 g	0.3039 mg	12930812.6861	5.8247 µCi	1.0231 mg/kg	2.311
018M	Day 13	dose2	306.000 g	0.709 g	0.3113 mg	13248477.1595	5.9678 µCi	1.0174 mg/kg	1.742
018M	Day 14	dose2	310.000 g	0.711 g	0.3122 mg	13285849.4506	5.9846 µCi	1.0071 mg/kg	0.712
018M	Day 15	dose2	311.000 g	0.708 g	0.3109 mg	13228791.0141	5.9594 µCi	0.9996 mg/kg	0.035
018M	Day 16	dose2	320.000 g	0.735 g	0.3227 mg	13734316.9425	6.1866 µCi	1.0086 mg/kg	0.858

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
019M	Day 1	dose 1	216,000 g	0.475 g	0.2094 mg	8744686.2737	3.9390 µCi	0.9695 mg/kg	3.047
019M	Day 2	dose 1	223,000 g	0.523 g	0.2306 mg	962839.8339	4.3371 µCi	1.0340 mg/kg	3.399
019M	Day 3	dose 1	228,000 g	0.533 g	0.2350 mg	9812488.4922	4.4200 µCi	1.0307 mg/kg	3.065
019M	Day 4	dose 1	235,000 g	0.547 g	0.2412 mg	10070196.6140	4.5361 µCi	1.0262 mg/kg	2.622
019M	Day 5	dose 1	246,000 g	0.581 g	0.2562 mg	10896132.0526	4.8181 µCi	1.0413 mg/kg	4.127
019M	Day 6	dose 1	256,000 g	0.600 g	0.2645 mg	11045919.5034	4.9756 µCi	1.0333 mg/kg	3.331
019M	Day 7	dose 1	263,000 g	0.623 g	0.2747 mg	11469346.4179	5.1664 µCi	1.0444 mg/kg	4.437
019M	Day 8	dose 1	272,000 g	0.634 g	0.2795 mg	11671834.9422	5.2576 µCi	1.0276 mg/kg	2.764
019M	Day 9	dose 1	280,000 g	0.651 g	0.2870 mg	11984822.6613	5.3986 µCi	1.0250 mg/kg	2.505
019M	Day 10	dose 2	287,000 g	0.669 g	0.2938 mg	12501031.3396	5.6311 µCi	1.0236 mg/kg	2.357
019M	Day 11	dose 2	294,000 g	0.696 g	0.3056 mg	13005557.2681	5.8584 µCi	1.0395 mg/kg	3.953
019M	Day 12	dose 2	303,000 g	0.712 g	0.3126 mg	13304535.5959	5.9930 µCi	1.0318 mg/kg	3.184
019M	Day 13	dose 2	311,000 g	0.732 g	0.3214 mg	13678288.5059	6.1614 µCi	1.0335 mg/kg	3.353
019M	Day 14	dose 2	317,000 g	0.743 g	0.3263 mg	13883866.1064	6.2540 µCi	1.0292 mg/kg	2.921
019M	Day 15	dose 2	327,000 g	0.760 g	0.3337 mg	14201470.5801	6.3971 µCi	1.0206 mg/kg	2.056
019M	Day 16	dose 2	336,000 g	0.772 g	0.3390 mg	14425704.3260	6.4981 µCi	1.0089 mg/kg	0.891
020M	Day 1	dose 1	222,000 g	0.525 g	0.2315 mg	9865179.5656	4.3537 µCi	1.0426 mg/kg	4.262
020M	Day 2	dose 1	230,000 g	0.534 g	0.2354 mg	9830886.3582	4.4283 µCi	1.0236 mg/kg	2.361
020M	Day 3	dose 1	245,000 g	0.573 g	0.2526 mg	10548853.1258	4.7517 µCi	1.0311 mg/kg	3.112
020M	Day 4	dose 1	250,000 g	0.578 g	0.2548 mg	10640902.4551	4.7932 µCi	1.0193 mg/kg	1.931
020M	Day 5	dose 1	258,000 g	0.609 g	0.2665 mg	11211688.2962	5.0503 µCi	1.0407 mg/kg	4.068
020M	Day 6	dose 1	268,000 g	0.622 g	0.2742 mg	11450936.5520	5.1581 µCi	1.0232 mg/kg	2.324
020M	Day 7	dose 1	280,000 g	0.649 g	0.2861 mg	11948022.9296	5.3820 µCi	1.0219 mg/kg	2.190
020M	Day 8	dose 1	291,000 g	0.683 g	0.3011 mg	12573988.3682	5.6639 µCi	1.0348 mg/kg	3.478

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
020M	Day 9	dose1	300.000 g	0.695 g	0.3064 mg	12794856.7583	5.7554 µCi	1.0214 mg/kg	2.137
020M	Day 10	dose2	309.000 g	0.716 g	0.3144 mg	13379280.1781	6.0267 µCi	1.0175 mg/kg	1.748
020M	Day 11	dose2	319.000 g	0.755 g	0.3315 mg	14108039.8525	6.3550 µCi	1.0393 mg/kg	3.927
020M	Day 12	dose2	329.000 g	0.758 g	0.3328 mg	14164082.2891	6.3802 µCi	1.0117 mg/kg	1.169
020M	Day 13	dose2	336.000 g	0.780 g	0.3425 mg	14575193.4901	6.5654 µCi	1.0194 mg/kg	1.936
020M	Day 14	dose2	342.000 g	0.808 g	0.3548 mg	15098405.5640	6.8011 µCi	1.0374 mg/kg	3.743
020M	Day 15	dose2	353.000 g	0.822 g	0.3609 mg	15360011.6011	6.9189 µCi	1.0225 mg/kg	2.252
020M	Day 16	dose2	359.000 g	0.822 g	0.3609 mg	15360011.6009	6.9189 µCi	1.0054 mg/kg	0.543
021F	Day 1	dose1	179.000 g	0.451 g	0.1988 mg	8302849.4935	3.7400 µCi	1.1108 mg/kg	-11.082
021F	Day 2	dose1	169.000 g	0.407 g	0.1794 mg	7492815.3967	3.3751 µCi	1.0618 mg/kg	6.176
021F	Day 3	dose1	182.000 g	0.411 g	0.1812 mg	7566454.8600	3.4083 µCi	0.9956 mg/kg	0.439
021F	Day 4	dose1	185.000 g	0.435 g	0.1918 mg	8008291.6401	3.6073 µCi	1.0367 mg/kg	3.666
021F	Day 5	dose1	185.000 g	0.420 g	0.1891 mg	7897832.4451	3.5576 µCi	1.0224 mg/kg	2.236
021F	Day 6	dose1	179.000 g	0.422 g	0.1861 mg	7768952.3841	3.4995 µCi	1.0394 mg/kg	3.939
021F	Day 7	dose1	193.000 g	0.450 g	0.1984 mg	8264439.6276	3.7317 µCi	1.0280 mg/kg	2.796
021F	Day 8	dose1	178.000 g	0.424 g	0.1869 mg	7805783.1158	3.5161 µCi	1.0502 mg/kg	5.019
021F	Day 9	dose1	198.000 g	0.468 g	0.2063 mg	8615817.2128	3.8810 µCi	1.0421 mg/kg	4.208
021F	Day 10	dose2	193.000 g	0.446 g	0.1958 mg	8334020.8931	3.7341 µCi	1.0147 mg/kg	1.473
021F	Day 11	dose2	205.000 g	0.487 g	0.2138 mg	9100152.6586	4.0992 µCi	1.0432 mg/kg	4.315
021F	Day 12	dose2	206.000 g	0.476 g	0.2090 mg	8894605.2580	4.0066 µCi	1.0146 mg/kg	1.464
021F	Day 13	dose2	210.000 g	0.498 g	0.2187 mg	9305700.4590	4.1918 µCi	1.0413 mg/kg	4.132
021F	Day 14	dose2	203.000 g	0.483 g	0.2121 mg	9025408.2765	4.0655 µCi	1.0448 mg/kg	4.478
021F	Day 15	dose2	210.000 g	0.491 g	0.2156 mg	9174897.4406	4.1328 µCi	1.0267 mg/kg	2.668
021F	Day 16	dose2	214.000 g	0.495 g	0.2174 mg	9249642.0225	4.1665 µCi	1.0157 mg/kg	1.570

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
022F	Day 1	dose 1	178,000 g	0.451 g	0.1988 mg	8302849.4935	3.7400 μ Ci	1.1171 mg/kg	11.706
022F	Day 2	dose 1	174,000 g	0.421 g	0.1856 mg	7750535.163	3.4912 μ Ci	1.0667 mg/kg	6.673
022F	Day 3	dose 1	179,000 g	0.403 g	0.1777 mg	7419175.9332	3.3420 μ Ci	0.9926 mg/kg	0.740
022F	Day 4	dose 1	181,000 g	0.429 g	0.1891 mg	7897832.4451	3.5576 μ Ci	1.0460 mg/kg	4.496
022F	Day 5	dose 1	184,000 g	0.421 g	0.1856 mg	7750533.5184	3.4912 μ Ci	1.0088 mg/kg	0.875
022F	Day 6	dose 1	180,000 g	0.420 g	0.1852 mg	7732143.6525	3.4829 μ Ci	1.0287 mg/kg	2.872
022F	Day 7	dose 1	187,000 g	0.428 g	0.1887 mg	7873422.5791	3.5493 μ Ci	1.0091 mg/kg	0.907
022F	Day 8	dose 1	179,000 g	0.432 g	0.1905 mg	7953062.0424	3.5825 μ Ci	1.0640 mg/kg	6.402
022F	Day 9	dose 1	192,000 g	0.446 g	0.1966 mg	8210800.1644	3.6986 μ Ci	1.0241 mg/kg	2.413
022F	Day 10	dose 2	184,000 g	0.433 g	0.1901 mg	8091101.0016	3.6446 μ Ci	1.0333 mg/kg	3.334
022F	Day 11	dose 2	193,000 g	0.466 g	0.2046 mg	8707743.8030	3.9224 μ Ci	1.0602 mg/kg	6.023
022F	Day 12	dose 2	197,000 g	0.461 g	0.2024 mg	8614313.0754	3.8803 μ Ci	1.0276 mg/kg	2.756
022F	Day 13	dose 2	198,000 g	0.460 g	0.2020 mg	8598626.9300	3.8719 μ Ci	1.0202 mg/kg	2.015
022F	Day 14	dose 2	193,000 g	0.456 g	0.2002 mg	8520882.3480	3.8382 μ Ci	1.0375 mg/kg	3.748
022F	Day 15	dose 2	203,000 g	0.478 g	0.2099 mg	8931977.5490	4.0234 μ Ci	1.0340 mg/kg	3.396
022F	Day 16	dose 2	207,000 g	0.484 g	0.2125 mg	9044094.4220	4.0739 μ Ci	1.0267 mg/kg	2.671
023F	Day 1	dose 1	172,000 g	0.408 g	0.1799 mg	7511225.2625	3.3834 μ Ci	1.0458 mg/kg	4.581
023F	Day 2	dose 1	180,000 g	0.416 g	0.1834 mg	7658504.1890	3.4498 μ Ci	1.0189 mg/kg	1.892
023F	Day 3	dose 1	182,000 g	0.424 g	0.1869 mg	7805783.1159	3.5161 μ Ci	1.0271 mg/kg	2.711
023F	Day 4	dose 1	184,000 g	0.440 g	0.1940 mg	8100340.9692	3.6488 μ Ci	1.0543 mg/kg	5.428
023F	Day 5	dose 1	183,000 g	0.432 g	0.1905 mg	7953062.0425	3.5825 μ Ci	1.0408 mg/kg	4.077
023F	Day 6	dose 1	191,000 g	0.453 g	0.1997 mg	8339669.2250	3.7566 μ Ci	1.0456 mg/kg	4.565
023F	Day 7	dose 1	197,000 g	0.463 g	0.2041 mg	8523767.8837	3.8395 μ Ci	1.0362 mg/kg	3.618
023F	Day 8	dose 1	184,000 g	0.433 g	0.1909 mg	7971471.9083	3.5908 μ Ci	1.0375 mg/kg	3.751

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
023F	Day 9	dose 1	194.000 g	0.460 g	0.2028 mg	8468538.2859	3.8147 µCi	1.0454 mg/kg	4.539
023F	Day 10	dose 2	199.000 g	0.468 g	0.2055 mg	8745116.0939	3.9392 µCi	1.0327 mg/kg	3.268
023F	Day 11	dose 2	202.000 g	0.479 g	0.2103 mg	8950663.6946	4.0318 µCi	1.0413 mg/kg	4.126
023F	Day 12	dose 2	201.000 g	0.482 g	0.2117 mg	9006722.1310	4.0571 µCi	1.0530 mg/kg	5.299
023F	Day 13	dose 2	201.000 g	0.473 g	0.2077 mg	8838546.8215	3.9813 µCi	1.0333 mg/kg	3.333
023F	Day 14	dose 2	208.000 g	0.495 g	0.2174 mg	9249642.0225	4.1665 µCi	1.0450 mg/kg	4.500
023F	Day 15	dose 2	209.000 g	0.479 g	0.2103 mg	8950663.6944	4.0318 µCi	1.0064 mg/kg	0.638
023F	Day 16	dose 2	208.000 g	0.478 g	0.2099 mg	8931977.5491	4.0234 µCi	1.0091 mg/kg	0.911
024F	Day 1	dose 1	177.000 g	0.423 g	0.1865 mg	7787373.2501	3.5078 µCi	1.0536 mg/kg	5.363
024F	Day 2	dose 1	182.000 g	0.433 g	0.1909 mg	7911471.9083	3.5908 µCi	1.0489 mg/kg	4.891
024F	Day 3	dose 1	183.000 g	0.424 g	0.1869 mg	7805783.1157	3.5161 µCi	1.0215 mg/kg	2.149
024F	Day 4	dose 1	181.000 g	0.432 g	0.1905 mg	7953062.0425	3.5825 µCi	1.0523 mg/kg	5.227
024F	Day 5	dose 1	189.000 g	0.448 g	0.1975 mg	8247619.8959	3.7151 µCi	1.0460 mg/kg	4.505
024F	Day 6	dose 1	192.000 g	0.447 g	0.1971 mg	8229210.0301	3.7069 µCi	1.0284 mg/kg	2.642
024F	Day 7	dose 1	193.000 g	0.454 g	0.2002 mg	8358079.0910	3.7649 µCi	1.0371 mg/kg	3.710
024F	Day 8	dose 1	180.000 g	0.435 g	0.1918 mg	8008291.6401	3.6073 µCi	1.0655 mg/kg	6.546
024F	Day 9	dose 1	199.000 g	0.460 g	0.2028 mg	8468538.2859	3.8147 µCi	1.0191 mg/kg	1.912
024F	Day 10	dose 2	201.000 g	0.462 g	0.2029 mg	8632999.2210	3.8887 µCi	1.0083 mg/kg	0.930
024F	Day 11	dose 2	199.000 g	0.469 g	0.2059 mg	8763802.2394	3.9477 µCi	1.0349 mg/kg	3.489
024F	Day 12	dose 2	197.000 g	0.463 g	0.2033 mg	8651685.3664	3.8972 µCi	1.0320 mg/kg	3.202
024F	Day 13	dose 2	209.000 g	0.480 g	0.2108 mg	8968349.8400	4.0402 µCi	1.0085 mg/kg	0.848
024F	Day 14	dose 2	212.000 g	0.496 g	0.2178 mg	9266328.1680	4.1749 µCi	1.0274 mg/kg	2.735
024F	Day 15	dose 2	211.000 g	0.504 g	0.2213 mg	9417817.3320	4.2423 µCi	1.0489 mg/kg	4.887
024F	Day 16	dose 2	203.000 g	0.482 g	0.2117 mg	9006722.1309	4.0571 µCi	1.0426 mg/kg	4.262

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
025M	Day 1	dose 1	210,000 g	0.499 g	0.2200 mg	9186523.0538	4.11381 µCi	1.0476 mg/kg	4.761
025M	Day 2	dose 1	220,000 g	0.517 g	0.2279 mg	9517900.6388	4.2873 µCi	1.0361 mg/kg	3.607
025M	Day 3	dose 1	229,000 g	0.544 g	0.2398 mg	10014967.0165	4.51112 µCi	1.0473 mg/kg	4.733
025M	Day 4	dose 1	234,000 g	0.559 g	0.2465 mg	10291115.0040	4.6356 µCi	1.0532 mg/kg	5.321
025M	Day 5	dose 1	247,000 g	0.570 g	0.2513 mg	10493623.5284	4.7269 µCi	1.0174 mg/kg	1.742
025M	Day 6	dose 1	253,000 g	0.583 g	0.2570 mg	1073251.7843	4.8347 µCi	1.0159 mg/kg	1.594
025M	Day 7	dose 1	268,000 g	0.635 g	0.2800 mg	11690264.8080	5.2659 µCi	1.0446 mg/kg	4.462
025M	Day 8	dose 1	279,000 g	0.653 g	0.2879 mg	12021642.3930	5.4152 µCi	1.0319 mg/kg	3.188
025M	Day 9	dose 1	289,000 g	0.670 g	0.2954 mg	12334610.1123	5.5561 µCi	1.0221 mg/kg	2.211
025M	Day 10	dose 2	293,000 g	0.684 g	0.3004 mg	12781323.5221	5.7574 µCi	1.0251 mg/kg	2.509
025M	Day 11	dose 2	298,000 g	0.696 g	0.3056 mg	13005557.2680	5.8584 µCi	1.0256 mg/kg	2.557
025M	Day 12	dose 2	310,000 g	0.718 g	0.3153 mg	13416552.4689	6.0435 µCi	1.0170 mg/kg	1.704
025M	Day 13	dose 2	319,000 g	0.742 g	0.3258 mg	13865119.9610	6.2455 µCi	1.0214 mg/kg	2.138
025M	Day 14	dose 2	326,000 g	0.755 g	0.3315 mg	14108039.8526	6.3550 µCi	1.0170 mg/kg	1.696
025M	Day 15	dose 2	334,000 g	0.782 g	0.3434 mg	14612565.7809	6.5822 µCi	1.0281 mg/kg	2.810
025M	Day 16	dose 2	344,000 g	0.782 g	0.3434 mg	14612565.7811	6.5822 µCi	0.9982 mg/kg	0.179
025M	Day 17	dose 2	347,000 g	0.810 g	0.3557 mg	15135777.8551	6.8179 µCi	1.0250 mg/kg	2.501
025M	Day 18	dose 2	355,000 g	0.829 g	0.3640 mg	15490814.6196	6.9778 µCi	1.0254 mg/kg	2.541
025M	Day 19	dose 2	357,000 g	0.829 g	0.3640 mg	15490814.6194	6.9778 µCi	1.0197 mg/kg	1.967
025M	Day 20	dose 2	366,000 g	0.849 g	0.3728 mg	15864537.5295	7.1462 µCi	1.0186 mg/kg	1.859
025M	Day 21	dose 2	373,000 g	0.855 g	0.3754 mg	15976654.4024	7.1967 µCi	1.0065 mg/kg	0.654
025M	Day 22	dose 2	378,000 g	0.878 g	0.3655 mg	16406435.7490	7.3903 µCi	1.0199 mg/kg	1.994
026M	Day 1	dose 1	207,000 g	0.444 g	0.1958 mg	817390.4326	3.6820 µCi	0.9457 mg/kg	5.434
026M	Day 2	dose 1	216,000 g	0.498 g	0.2196 mg	9168113.1880	4.1298 µCi	1.0165 mg/kg	1.647

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
026M	Day 3	dose 1	223.000 g	0.506 g	0.2231 mg	931532.1146	4.1961 µCi	1.0004 mg/kg	0.038
026M	Day 4	dose 1	233.000 g	0.530 g	0.2337 mg	975728.8949	4.3951 µCi	1.0029 mg/kg	0.286
026M	Day 5	dose 1	241.000 g	0.559 g	0.2465 mg	10291115.0040	4.6356 µCi	1.0226 mg/kg	2.262
026M	Day 6	dose 1	253.000 g	0.584 g	0.2575 mg	10751361.6501	4.8430 µCi	1.0177 mg/kg	1.768
026M	Day 7	dose 1	264.000 g	0.609 g	0.2685 mg	11211688.2961	5.0503 µCi	1.0170 mg/kg	1.703
026M	Day 8	dose 1	270.000 g	0.633 g	0.2791 mg	11653345.0762	5.2493 µCi	1.0336 mg/kg	3.362
026M	Day 9	dose 1	277.000 g	0.652 g	0.2875 mg	12003232.5271	5.4069 µCi	1.0377 mg/kg	3.774
026M	Day 10	dose 2	282.000 g	0.653 g	0.2867 mg	12202053.0115	5.4964 µCi	1.0168 mg/kg	1.680
026M	Day 11	dose 2	289.000 g	0.659 g	0.2938 mg	12501031.3395	5.6311 µCi	1.0165 mg/kg	1.649
026M	Day 12	dose 2	300.000 g	0.695 g	0.3052 mg	12986671.1226	5.8499 µCi	1.0173 mg/kg	1.727
026M	Day 13	dose 2	307.000 g	0.691 g	0.3034 mg	12912126.5406	5.8163 µCi	0.9884 mg/kg	1.164
026M	Day 14	dose 2	312.000 g	0.732 g	0.3214 mg	13678258.5061	6.1614 µCi	1.0302 mg/kg	3.022
026M	Day 15	dose 2	322.000 g	0.756 g	0.3320 mg	14126725.9981	6.3634 µCi	1.0310 mg/kg	3.095
026M	Day 16	dose 2	328.000 g	0.734 g	0.3223 mg	13715630.7971	6.1782 µCi	0.9826 mg/kg	1.736
026M	Day 17	dose 2	339.000 g	0.784 g	0.3443 mg	14649938.0721	6.5991 µCi	1.0155 mg/kg	1.552
026M	Day 18	dose 2	338.000 g	0.785 g	0.3447 mg	14668624.2175	6.6075 µCi	1.0198 mg/kg	1.983
026M	Day 19	dose 2	347.000 g	0.808 g	0.3548 mg	15098405.5639	6.8011 µCi	1.0225 mg/kg	2.248
026M	Day 20	dose 2	351.000 g	0.813 g	0.3570 mg	15191836.2915	6.8432 µCi	1.0171 mg/kg	1.708
026M	Day 21	dose 2	354.000 g	0.804 g	0.3530 mg	15023660.9821	6.7674 µCi	0.9973 mg/kg	0.270
026M	Day 22	dose 2	370.000 g	0.860 g	0.3776 mg	16070085.1299	7.2388 µCi	1.0206 mg/kg	2.063
027M	Day 1	dose 1	208.000 g	0.482 g	0.2125 mg	887355.3345	3.9971 µCi	1.0217 mg/kg	2.165
027M	Day 2	dose 1	216.000 g	0.516 g	0.2275 mg	9499490.7729	4.2790 µCi	1.0532 mg/kg	5.321
027M	Day 3	dose 1	221.000 g	0.534 g	0.2354 mg	9830868.3582	4.4283 µCi	1.0653 mg/kg	6.529
027M	Day 4	dose 1	229.000 g	0.537 g	0.2368 mg	9886097.9558	4.4532 µCi	1.0339 mg/kg	3.385

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose admin	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
027M	Day 5	dose 1	238.000 g	0.550 g	0.2425 mg	10125426.2115	4.55610 µCi	1.0188 mg/kg	1.884
027M	Day 6	dose 1	248.000 g	0.581 g	0.2562 mg	10696132.0525	4.8181 µCi	1.0329 mg/kg	3.287
027M	Day 7	dose 1	259.000 g	0.616 g	0.2716 mg	11340477.3570	5.1083 µCi	1.0486 mg/kg	4.858
027M	Day 8	dose 1	263.000 g	0.612 g	0.2636 mg	11268837.8936	5.0752 µCi	1.0259 mg/kg	2.593
027M	Day 9	dose 1	273.000 g	0.641 g	0.2826 mg	11800724.0030	5.3156 µCi	1.0352 mg/kg	3.518
027M	Day 10	dose 2	278.000 g	0.667 g	0.2929 mg	12463659.0484	5.6143 µCi	1.0535 mg/kg	5.355
027M	Day 11	dose 2	285.000 g	0.659 g	0.2894 mg	12314189.8844	5.5469 µCi	1.0153 mg/kg	1.535
027M	Day 12	dose 2	289.000 g	0.671 g	0.2946 mg	12538403.6305	5.6479 µCi	1.0195 mg/kg	1.953
027M	Day 13	dose 2	296.000 g	0.691 g	0.3034 mg	12912126.5404	5.8163 µCi	1.0251 mg/kg	2.508
027M	Day 14	dose 2	301.000 g	0.703 g	0.3087 mg	13136360.2865	5.9173 µCi	1.0256 mg/kg	2.556
027M	Day 15	dose 2	304.000 g	0.715 g	0.3140 mg	13360594.0325	6.0183 µCi	1.0328 mg/kg	3.278
027M	Day 16	dose 2	311.000 g	0.726 g	0.3188 mg	13566141.6330	6.1109 µCi	1.0251 mg/kg	2.506
027M	Day 17	dose 2	317.000 g	0.742 g	0.3258 mg	13865119.9611	6.2455 µCi	1.0278 mg/kg	2.782
027M	Day 18	dose 2	320.000 g	0.744 g	0.3267 mg	13902462.2520	6.2624 µCi	1.0209 mg/kg	2.093
027M	Day 19	dose 2	326.000 g	0.775 g	0.3403 mg	14481732.7626	6.5233 µCi	1.0439 mg/kg	4.390
027M	Day 20	dose 2	330.000 g	0.773 g	0.3394 mg	14444350.4715	6.5065 µCi	1.0286 mg/kg	2.858
027M	Day 21	dose 2	337.000 g	0.776 g	0.3407 mg	14500448.9080	6.5317 µCi	1.0111 mg/kg	1.113
027M	Day 22	dose 2	341.000 g	0.786 g	0.3451 mg	14687310.3630	6.6159 µCi	1.0121 mg/kg	1.214
028M	Day 1	dose 1	214.000 g	0.494 g	0.2178 mg	9094473.7245	4.0966 µCi	1.0177 mg/kg	1.773
028M	Day 2	dose 1	224.000 g	0.522 g	0.2301 mg	9609949.9681	4.3288 µCi	1.0274 mg/kg	2.741
028M	Day 3	dose 1	232.000 g	0.542 g	0.2380 mg	9978147.2848	4.4947 µCi	1.0300 mg/kg	2.999
028M	Day 4	dose 1	236.000 g	0.555 g	0.2447 mg	10217475.5408	4.6025 µCi	1.0368 mg/kg	3.682
028M	Day 5	dose 1	245.000 g	0.544 g	0.2398 mg	10014967.0166	4.5112 µCi	0.9769 mg/kg	2.107
028M	Day 6	dose 1	257.000 g	0.585 g	0.2579 mg	10769771.5159	4.8512 µCi	1.0036 mg/kg	0.356

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
028M	Day 7	dose1	264.000 g	0.615 g	0.2711 mg	11322067.4910	5.1000 µCi	1.0270 mg/kg	2.705
028M	Day 8	dose1	275.000 g	0.642 g	0.2830 mg	11819133.8689	5.3239 µCi	1.0293 mg/kg	2.925
028M	Day 9	dose1	281.000 g	0.647 g	0.2852 mg	11911183.1981	5.3654 µCi	1.0151 mg/kg	1.512
028M	Day 10	dose2	288.000 g	0.669 g	0.2938 mg	12501031.3394	5.6311 µCi	1.0200 mg/kg	2.002
028M	Day 11	dose2	299.000 g	0.690 g	0.3030 mg	12893440.3950	5.8079 µCi	1.0133 mg/kg	1.333
028M	Day 12	dose2	300.000 g	0.680 g	0.2986 mg	1270657.89400	5.7237 µCi	0.9953 mg/kg	0.468
028M	Day 13	dose2	312.000 g	0.716 g	0.3144 mg	13379280.1779	6.0267 µCi	1.0077 mg/kg	0.770
028M	Day 14	dose2	317.000 g	0.729 g	0.3201 mg	1362220.0695	6.1361 µCi	1.0098 mg/kg	0.981
028M	Day 15	dose2	327.000 g	0.759 g	0.3333 mg	14182784.4346	6.3886 µCi	1.0192 mg/kg	1.922
028M	Day 16	dose2	331.000 g	0.772 g	0.3390 mg	14425704.3260	6.4981 µCi	1.0241 mg/kg	2.415
028M	Day 17	dose2	339.000 g	0.790 g	0.3469 mg	14762054.9449	6.6496 µCi	1.0233 mg/kg	2.329
028M	Day 18	dose2	340.000 g	0.785 g	0.3447 mg	14668624.2175	6.6075 µCi	1.0138 mg/kg	1.383
028M	Day 19	dose2	346.000 g	0.809 g	0.3552 mg	15117091.7095	6.8095 µCi	1.0267 mg/kg	2.671
028M	Day 20	dose2	356.000 g	0.834 g	0.3662 mg	15584245.3470	7.0199 µCi	1.0287 mg/kg	2.870
028M	Day 21	dose2	358.000 g	0.823 g	0.3614 mg	15378697.7464	6.9273 µCi	1.0095 mg/kg	0.946
028M	Day 22	dose2	365.000 g	0.847 g	0.3719 mg	15827165.2386	7.1294 µCi	1.0190 mg/kg	1.898
029F	Day 1	dose1	191.000 g	0.451 g	0.1988 mg	8302849.4936	3.7400 µCi	1.0410 mg/kg	4.103
029F	Day 2	dose1	179.000 g	0.428 g	0.1887 mg	7879422.5792	3.5493 µCi	1.0542 mg/kg	5.417
029F	Day 3	dose1	187.000 g	0.442 g	0.1949 mg	8137160.7010	3.6654 µCi	1.0421 mg/kg	4.208
029F	Day 4	dose1	190.000 g	0.459 g	0.2024 mg	8450128.4203	3.8064 µCi	1.0651 mg/kg	6.507
029F	Day 5	dose1	190.000 g	0.434 g	0.1913 mg	7989861.7741	3.5990 µCi	1.0071 mg/kg	0.706
029F	Day 6	dose1	184.000 g	0.430 g	0.1896 mg	791622.3110	3.5659 µCi	1.0303 mg/kg	3.032
029F	Day 7	dose1	195.000 g	0.461 g	0.2032 mg	8486948.1518	3.8229 µCi	1.0423 mg/kg	4.229
029F	Day 8	dose1	198.000 g	0.465 g	0.2050 mg	8560537.6152	3.8561 µCi	1.0354 mg/kg	3.540

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
029F	Day 9	dose1	199.000 g	0.468 g	0.2063 mg	8615817.2129	3.8810 µCi	1.0368 mg/kg	3.684
029F	Day 10	dose2	193.000 g	0.457 g	0.2007 mg	8539568.4934	3.8467 µCi	1.0398 mg/kg	3.976
029F	Day 11	dose2	205.000 g	0.465 g	0.2042 mg	8689057.6574	3.9140 µCi	0.9960 mg/kg	0.397
029F	Day 12	dose2	211.000 g	0.496 g	0.2178 mg	9268328.1681	4.1749 µCi	1.0322 mg/kg	3.222
U29F	Day 13	dose2	212.000 g	0.478 g	0.2099 mg	8931977.5491	4.0234 µCi	0.9901 mg/kg	0.993
029F	Day 14	dose2	202.000 g	0.478 g	0.2099 mg	8931977.5489	4.0234 µCi	1.0391 mg/kg	3.908
029F	Day 15	dose2	213.000 g	0.503 g	0.2209 mg	9399131.1865	4.2338 µCi	1.0370 mg/kg	3.696
029F	Day 16	dose2	216.000 g	0.498 g	0.2187 mg	9305700.4590	4.1918 µCi	1.0124 mg/kg	1.239
029F	Day 17	dose2	213.000 g	0.504 g	0.2213 mg	9417817.3319	4.2423 µCi	1.0390 mg/kg	3.902
029F	Day 18	dose2	207.000 g	0.489 g	0.2147 mg	9137525.1496	4.1160 µCi	1.0373 mg/kg	3.732
029F	Day 19	dose2	218.000 g	0.517 g	0.2270 mg	9660737.2235	4.3517 µCi	1.0414 mg/kg	4.138
029F	Day 20	dose2	223.000 g	0.529 g	0.2323 mg	9884970.9696	4.4527 µCi	1.0417 mg/kg	4.166
029F	Day 21	dose2	222.000 g	0.523 g	0.2297 mg	9772854.0986	4.4022 µCi	1.0345 mg/kg	3.448
029F	Day 22	dose2	243.000 g	0.562 g	0.2468 mg	10501613.7710	4.7305 µCi	1.0156 mg/kg	1.555
030F	Day 1	dose1	177.000 g	0.411 g	0.1812 mg	7566454.8600	3.4083 µCi	1.0237 mg/kg	2.374
030F	Day 2	dose1	175.000 g	0.391 g	0.1724 mg	7198257.5431	3.2425 µCi	0.9851 mg/kg	1.495
030F	Day 3	dose1	185.000 g	0.426 g	0.1878 mg	7842602.8475	3.5327 µCi	1.0152 mg/kg	1.522
030F	Day 4	dose1	191.000 g	0.449 g	0.1980 mg	8266029.7617	3.7234 µCi	1.0364 mg/kg	3.641
030F	Day 5	dose1	185.000 g	0.426 g	0.1878 mg	7842602.8475	3.5327 µCi	1.0152 mg/kg	1.522
030F	Day 6	dose1	197.000 g	0.427 g	0.1883 mg	7861012.7134	3.5410 µCi	0.9556 mg/kg	4.439
030F	Day 7	dose1	202.000 g	0.477 g	0.2103 mg	8781506.0052	3.9556 µCi	1.0411 mg/kg	4.109
030F	Day 8	dose1	206.000 g	0.479 g	0.2112 mg	8818325.7371	3.9722 µCi	1.0252 mg/kg	2.515
030F	Day 9	dose1	197.000 g	0.418 g	0.1843 mg	7695323.9207	3.4664 µCi	0.9355 mg/kg	6.453
030F	Day 10	dose2	209.000 g	0.488 g	0.2143 mg	9116839.0040	4.1076 µCi	1.0253 mg/kg	2.529

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose err (%)
030F	Day 11	dose2	215.000 g	0.505 g	0.2218 mg	9436503.4774	4.2507 µCi	1.0314 mg/kg	3.140
030F	Day 12	dose2	219.000 g	0.515 g	0.2261 mg	9623364.9326	4.3348 µCi	1.0326 mg/kg	3.261
030F	Day 13	dose2	207.000 g	0.477 g	0.2095 mg	8913291.4035	4.0150 µCi	1.0119 mg/kg	1.186
030F	Day 14	dose2	221.000 g	0.522 g	0.2292 mg	9754167.9510	4.3938 µCi	1.0372 mg/kg	3.717
030F	Day 15	dose2	226.000 g	0.531 g	0.2332 mg	9922343.2606	4.4695 µCi	1.0317 mg/kg	3.171
030F	Day 16	dose2	228.000 g	0.532 g	0.2336 mg	9941029.4060	4.4779 µCi	1.0246 mg/kg	2.459
030F	Day 17	dose2	221.000 g	0.505 g	0.2218 mg	9436503.4776	4.2507 µCi	1.0034 mg/kg	0.340
030F	Day 18	dose2	231.000 g	0.537 g	0.2358 mg	10034460.1336	4.5200 µCi	1.0208 mg/kg	2.079
030F	Day 19	dose2	234.000 g	0.542 g	0.2380 mg	10127890.8610	4.5621 µCi	1.0171 mg/kg	1.708
030F	Day 20	dose2	237.000 g	0.546 g	0.2398 mg	10202635.4431	4.5958 µCi	1.0116 mg/kg	1.162
030F	Day 21	dose2	231.000 g	0.528 g	0.2319 mg	9866284.8241	4.4443 µCi	1.0037 mg/kg	0.368
030F	Day 22	dose2	210.000 g	0.486 g	0.2134 mg	9081466.7131	4.0908 µCi	1.0162 mg/kg	1.623
031F	Day 1	dose1	179.000 g	0.421 g	0.1856 mg	7750533.5184	3.4912 µCi	1.0369 mg/kg	3.693
031F	Day 2	dose1	172.000 g	0.402 g	0.1772 mg	7400766.0673	3.3337 µCi	1.0304 mg/kg	3.043
031F	Day 3	dose1	176.000 g	0.419 g	0.1847 mg	7713733.7865	3.4747 µCi	1.0496 mg/kg	4.959
031F	Day 4	dose1	181.000 g	0.426 g	0.1878 mg	7842662.8475	3.5327 µCi	1.0377 mg/kg	3.765
031F	Day 5	dose1	185.000 g	0.435 g	0.1918 mg	8008291.6402	3.6073 µCi	1.0367 mg/kg	3.666
031F	Day 6	dose1	179.000 g	0.414 g	0.1825 mg	7621684.4574	3.4332 µCi	1.0197 mg/kg	1.969
031F	Day 7	dose1	190.000 g	0.463 g	0.2041 mg	8523767.8836	3.8395 µCi	1.0744 mg/kg	7.435
031F	Day 8	dose1	194.000 g	0.465 g	0.2050 mg	8560587.6152	3.8361 µCi	1.0567 mg/kg	5.675
031F	Day 9	dose1	196.000 g	0.462 g	0.2037 mg	8505358.0177	3.8312 µCi	1.0392 mg/kg	3.922
031F	Day 10	dose2	189.000 g	0.442 g	0.1941 mg	8259276.3110	3.7204 µCi	1.0269 mg/kg	2.691
031F	Day 11	dose2	201.000 g	0.469 g	0.2059 mg	8763802.2396	3.9477 µCi	1.0246 mg/kg	2.459
031F	Day 12	dose2	199.000 g	0.474 g	0.2061 mg	8857232.9669	3.9897 µCi	1.0459 mg/kg	4.592

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
031F	Day 13	dose2	205,000 g	0.469 g	0.2059 mg	8763802.2394	3.9477 µCi	1.0046 mg/kg	0.460
031F	Day 14	dose2	194,000 g	0.455 g	0.1998 mg	8502196.2026	3.8298 µCi	1.0299 mg/kg	2.987
031F	Day 15	dose2	239,000 g	0.566 g	0.2485 mg	10576358.3529	4.7641 µCi	1.0399 mg/kg	3.990
031F	Day 16	dose2	210,000 g	0.500 g	0.2196 mg	9343072.7500	4.2086 µCi	1.0455 mg/kg	4.550
031F	Day 17	dose2	209,000 g	0.491 g	0.2156 mg	9174897.4405	4.1328 µCi	1.0316 mg/kg	3.159
031F	Day 18	dose2	198,000 g	0.472 g	0.2073 mg	8819860.6760	3.9729 µCi	1.0468 mg/kg	4.677
031F	Day 19	dose2	207,000 g	0.498 g	0.2187 mg	9305700.4589	4.1918 µCi	1.0564 mg/kg	5.641
031F	Day 20	dose2	213,000 g	0.499 g	0.2191 mg	9324386.6045	4.2002 µCi	1.0287 mg/kg	2.871
031F	Day 21	dose2	216,000 g	0.510 g	0.2239 mg	9529934.2049	4.2928 µCi	1.0368 mg/kg	3.679
031F	Day 22	dose2	201,000 g	0.467 g	0.2051 mg	8726429.9485	3.9308 µCi	1.0202 mg/kg	2.022
032F	Day 1	dose1	175,000 g	0.403 g	0.1777 mg	7419175.9332	3.3420 µCi	1.0153 mg/kg	1.528
032F	Day 2	dose1	177,000 g	0.399 g	0.1759 mg	7345536.4699	3.3088 µCi	0.9938 mg/kg	0.615
032F	Day 3	dose1	174,000 g	0.411 g	0.1812 mg	7566454.8600	3.4083 µCi	1.0414 mg/kg	4.139
032F	Day 4	dose1	180,000 g	0.423 g	0.1865 mg	7787373.2499	3.5078 µCi	1.0361 mg/kg	3.607
032F	Day 5	dose1	185,000 g	0.426 g	0.1878 mg	7842602.8476	3.5327 µCi	1.0152 mg/kg	1.522
032F	Day 6	dose1	181,000 g	0.428 g	0.1887 mg	7879422.5792	3.5493 µCi	1.0091 mg/kg	0.907
032F	Day 7	dose1	183,000 g	0.438 g	0.1931 mg	8063521.2375	3.6322 µCi	1.0552 mg/kg	5.522
032F	Day 8	dose1	198,000 g	0.449 g	0.1980 mg	8266029.7618	3.7234 µCi	0.9998 mg/kg	0.023
032F	Day 9	dose1	196,000 g	0.455 g	0.2006 mg	8376488.9569	3.7732 µCi	1.0235 mg/kg	2.347
032F	Day 10	dose2	194,000 g	0.462 g	0.2029 mg	8632992.2210	3.8887 µCi	1.0457 mg/kg	4.572
032F	Day 11	dose2	191,000 g	0.423 g	0.1857 mg	7904239.5465	3.5605 µCi	0.9725 mg/kg	2.752
032F	Day 12	dose2	200,000 g	0.469 g	0.2059 mg	8763802.2394	3.9477 µCi	1.0287 mg/kg	2.971
032F	Day 13	dose2	205,000 g	0.468 g	0.2055 mg	8745116.0941	3.9392 µCi	1.0025 mg/kg	0.246
032F	Day 14	dose2	210,000 g	0.504 g	0.2213 mg	9417817.3319	4.2423 µCi	1.0539 mg/kg	5.386

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
032F	Day 15	dose2	200,000 g	0.483 g	0.2121 mg	9025408.2766	4.0655 µCi	1.0605 mg/kg	6.045
032F	Day 16	dose2	210,000 g	0.494 g	0.2169 mg	9230955.8771	4.1581 µCi	1.0330 mg/kg	3.295
032F	Day 17	dose2	215,000 g	0.491 g	0.2156 mg	9174897.4406	4.1328 µCi	1.0028 mg/kg	0.280
032F	Day 18	dose2	212,000 g	0.482 g	0.2117 mg	9006722.1311	4.0571 µCi	0.9984 mg/kg	0.165
032F	Day 19	dose2	207,000 g	0.478 g	0.2099 mg	8931977.5490	4.0234 µCi	1.0140 mg/kg	1.398
032F	Day 20	dose2	218,000 g	0.496 g	0.2178 mg	9268328.1680	4.1749 µCi	0.9991 mg/kg	0.092
032F	Day 21	dose2	221,000 g	0.503 g	0.2209 mg	9399131.1865	4.2338 µCi	0.9994 mg/kg	0.058
032F	Day 22	dose2	222,000 g	0.517 g	0.2270 mg	9660737.2234	4.3517 µCi	1.0226 mg/kg	2.261
033M	Day 1	dose1	221,000 g	0.535 g	0.2359 mg	9849278.2239	4.4366 µCi	1.0673 mg/kg	6.729
033M	Day 2	dose1	230,000 g	0.542 g	0.2390 mg	9978147.2849	4.4947 µCi	1.0389 mg/kg	3.894
033M	Day 3	dose1	241,000 g	0.549 g	0.2420 mg	10107016.3457	4.5527 µCi	1.0043 mg/kg	0.433
033M	Day 4	dose1	244,000 g	0.568 g	0.2495 mg	10419984.0650	4.6937 µCi	1.0227 mg/kg	2.270
033M	Day 5	dose1	257,000 g	0.577 g	0.2544 mg	10622492.5893	4.7849 µCi	0.9898 mg/kg	1.016
033M	Day 6	dose1	265,000 g	0.617 g	0.2720 mg	11358867.2227	5.1166 µCi	1.0265 mg/kg	2.650
033M	Day 7	dose1	274,000 g	0.632 g	0.2786 mg	11635035.2102	5.2410 µCi	1.0169 mg/kg	1.692
033M	Day 8	dose1	289,000 g	0.664 g	0.2927 mg	12224150.9173	5.5064 µCi	1.0130 mg/kg	1.296
033M	Day 9	dose1	294,000 g	0.680 g	0.2988 mg	12518708.7707	5.6391 µCi	1.0197 mg/kg	1.972
033M	Day 10	dose2	305,000 g	0.690 g	0.3030 mg	12893440.3950	5.8079 µCi	0.9934 mg/kg	0.660
033M	Day 11	dose2	312,000 g	0.710 g	0.3118 mg	13267163.3049	5.9762 µCi	0.9993 mg/kg	0.074
033M	Day 12	dose2	325,000 g	0.759 g	0.3333 mg	14182784.4345	6.3886 µCi	1.0255 mg/kg	2.549
033M	Day 13	dose2	333,000 g	0.768 g	0.3372 mg	14350939.7441	6.4644 µCi	1.0127 mg/kg	1.272
033M	Day 14	dose2	340,000 g	0.796 g	0.3495 mg	14874171.8180	6.7001 µCi	1.0280 mg/kg	2.803
033M	Day 15	dose2	348,000 g	0.808 g	0.3548 mg	15098405.5640	6.8011 µCi	1.0195 mg/kg	1.954
033M	Day 16	dose2	357,000 g	0.824 g	0.3618 mg	15397363.8920	6.9358 µCi	1.0135 mg/kg	1.352

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
033M	Day 17	dose2	363.000 g	0.842 g	0.3697 mg	15733734.5109	7.0873 µCi	1.0185 mg/kg	1.854
033M	Day 18	dose2	371.000 g	0.855 g	0.3754 mg	15976654.4024	7.1967 µCi	1.0120 mg/kg	1.197
033M	Day 19	dose2	375.000 g	0.868 g	0.3811 mg	16219574.2939	7.3061 µCi	1.0164 mg/kg	1.639
033M	Day 20	dose2	381.000 g	0.879 g	0.3860 mg	16425121.8946	7.3987 µCi	1.0131 mg/kg	1.306
033M	Day 21	dose2	389.000 g	0.886 g	0.3891 mg	16555924.9130	7.4576 µCi	1.0001 mg/kg	0.013
033M	Day 22	dose2	393.000 g	0.907 g	0.3983 mg	16948333.9685	7.6344 µCi	1.0134 mg/kg	1.342
033M	Day 23	dose2	403.000 g	0.933 g	0.4097 mg	17434173.7516	7.8532 µCi	1.0166 mg/kg	1.680
033M	Day 24	dose2	406.000 g	0.930 g	0.4084 mg	17378115.3149	7.8280 µCi	1.0058 mg/kg	0.584
033M	Day 25	dose2	415.000 g	0.938 g	0.4119 mg	17527604.4790	7.8953 µCi	0.9925 mg/kg	0.751
033M	Day 26	dose2	416.000 g	0.955 g	0.4194 mg	17845268.9525	8.0384 µCi	1.0081 mg/kg	0.805
033M	Day 27	dose2	425.000 g	0.959 g	0.4211 mg	1792013.5345	8.0721 µCi	0.9908 mg/kg	0.916
033M	Day 28	dose2	430.000 g	1.013 g	0.4448 mg	18929065.3914	8.5266 µCi	1.0345 mg/kg	3.446
034M	Day 1	dose1	228.000 g	0.560 g	0.2469 mg	10309524.8700	4.6439 µCi	1.0829 mg/kg	8.286
034M	Day 2	dose1	234.000 g	0.548 g	0.2416 mg	10088605.4799	4.5444 µCi	1.0325 mg/kg	3.249
034M	Day 3	dose1	245.000 g	0.563 g	0.2482 mg	10364754.4876	4.6688 µCi	1.0131 mg/kg	1.312
034M	Day 4	dose1	245.000 g	0.571 g	0.2517 mg	10512033.3941	4.7352 µCi	1.0275 mg/kg	2.752
034M	Day 5	dose1	261.000 g	0.621 g	0.2738 mg	11432526.6861	5.1498 µCi	1.0490 mg/kg	4.899
034M	Day 6	dose1	274.000 g	0.645 g	0.2844 mg	11874363.4664	5.3488 µCi	1.0378 mg/kg	3.784
034M	Day 7	dose1	283.000 g	0.648 g	0.2857 mg	11929593.0637	5.3/37 µCi	1.0095 mg/kg	0.951
034M	Day 8	dose1	295.000 g	0.691 g	0.3046 mg	12721217.2850	5.7303 µCi	1.0327 mg/kg	3.271
034M	Day 9	dose1	303.000 g	0.709 g	0.3126 mg	13052594.8800	5.8795 µCi	1.0316 mg/kg	3.163
034M	Day 10	dose2	315.000 g	0.745 g	0.3271 mg	13921178.3975	6.2708 µCi	1.0385 mg/kg	3.853
034M	Day 11	dose2	323.000 g	0.763 g	0.3380 mg	14257529.0164	6.4223 µCi	1.0373 mg/kg	3.728
034M	Day 12	dose2	331.000 g	0.774 g	0.3399 mg	14463076.6169	6.5149 µCi	1.0268 mg/kg	2.680

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
034M	Day 13	dose2	340.000 g	0.784 g	0.3443 mg	14649938.0720	6.5991 µCi	1.0125 mg/kg	1.254
034M	Day 14	dose2	348.000 g	0.813 g	0.3570 mg	15191836.2914	6.8432 µCi	1.0259 mg/kg	2.585
034M	Day 15	dose2	351.000 g	0.831 g	0.3649 mg	15528186.9105	6.9947 µCi	1.0396 mg/kg	3.960
034M	Day 16	dose2	358.000 g	0.834 g	0.3662 mg	15584245.3470	7.0199 µCi	1.0230 mg/kg	2.295
034M	Day 17	dose2	368.000 g	0.851 g	0.3737 mg	15901909.8204	7.1630 µCi	1.0154 mg/kg	1.544
034M	Day 18	dose2	364.000 g	0.828 g	0.3636 mg	15471218.4740	6.9694 µCi	0.9989 mg/kg	0.115
034M	Day 19	dose2	375.000 g	0.866 g	0.3803 mg	16182202.0031	7.2893 µCi	1.0141 mg/kg	1.405
034M	Day 20	dose2	378.000 g	0.871 g	0.3825 mg	16275632.7304	7.3314 µCi	1.0118 mg/kg	1.181
034M	Day 21	dose2	385.000 g	0.899 g	0.3948 mg	16798844.8046	7.5670 µCi	1.0254 mg/kg	2.535
034M	Day 22	dose2	397.000 g	0.915 g	0.4018 mg	17097823.1326	7.7017 µCi	1.0121 mg/kg	1.205
034M	Day 23	dose2	340.000 g	0.798 g	0.3504 mg	14911544.1090	6.7169 µCi	1.0306 mg/kg	3.062
034M	Day 24	dose2	399.000 g	0.934 g	0.4101 mg	17452859.8970	7.8616 µCi	1.0279 mg/kg	2.789
034M	Day 25	dose2	406.000 g	0.939 g	0.4123 mg	17546290.6245	7.9037 µCi	1.0156 mg/kg	1.558
034M	Day 26	dose2	408.000 g	0.946 g	0.4154 mg	17677093.6430	7.9627 µCi	1.0181 mg/kg	1.813
034M	Day 27	dose2	412.000 g	0.934 g	0.4101 mg	17452859.8970	7.8616 µCi	0.9955 mg/kg	0.454
034M	Day 28	dose2	417.000 g	0.966 g	0.4242 mg	18050816.5529	8.1310 µCi	1.0172 mg/kg	1.722
035M	Day 1	dose1	218.000 g	0.551 g	0.2429 mg	10143836.0774	4.5693 µCi	1.1143 mg/kg	11.433
035M	Day 2	dose1	225.000 g	0.527 g	0.2323 mg	9701999.2973	4.3703 µCi	1.0326 mg/kg	3.264
035M	Day 3	dose1	233.000 g	0.541 g	0.2385 mg	9959737.4189	4.4864 µCi	1.0237 mg/kg	2.367
035M	Day 4	dose1	208.000 g	0.491 g	0.2165 mg	9039244.1271	4.0717 µCi	1.0407 mg/kg	4.073
035M	Day 5	dose1	247.000 g	0.591 g	0.2606 mg	1080230.7110	4.9010 µCi	1.0549 mg/kg	5.490
035M	Day 6	dose1	256.000 g	0.603 g	0.2659 mg	11101149.1011	5.0005 µCi	1.0385 mg/kg	3.848
035M	Day 7	dose1	265.000 g	0.610 g	0.2689 mg	11230016.1619	5.0586 µCi	1.0149 mg/kg	1.486
035M	Day 8	dose1	275.000 g	0.627 g	0.2764 mg	11542985.8812	5.1995 µCi	1.0052 mg/kg	0.521

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
035M	Day 9	dose 1	282.000 g	0.657 g	0.2897 mg	12095281.8564	5.4483 µCi	1.0272 mg/kg	2.716
035M	Day 10	dose2	289.000 g	0.669 g	0.2938 mg	12501031.3395	5.6311 µCi	1.0165 mg/kg	1.649
035M	Day 11	dose2	298.000 g	0.700 g	0.3074 mg	13080301.8500	5.8820 µCi	1.0315 mg/kg	3.147
035M	Day 12	dose2	307.000 g	0.714 g	0.3135 mg	13341907.8869	6.0099 µCi	1.0213 mg/kg	2.125
035M	Day 13	dose2	317.000 g	0.726 g	0.3188 mg	13566141.6330	6.1109 µCi	1.0057 mg/kg	0.566
035M	Day 14	dose2	323.000 g	0.755 g	0.3315 mg	14108039.8524	6.3550 µCi	1.0264 mg/kg	2.640
035M	Day 15	dose2	328.000 g	0.735 g	0.3227 mg	13734316.9424	6.1866 µCi	0.9840 mg/kg	1.602
035M	Day 16	dose2	336.000 g	0.786 g	0.3451 mg	14687310.3631	6.6159 µCi	1.0272 mg/kg	2.720
035M	Day 17	dose2	344.000 g	0.796 g	0.3495 mg	14874171.8180	6.7001 µCi	1.0161 mg/kg	1.608
035M	Day 18	dose2	349.000 g	0.805 g	0.3535 mg	15042341.1275	6.7758 µCi	1.0128 mg/kg	1.285
035M	Day 19	dose2	350.000 g	0.812 g	0.3566 mg	15173150.1461	6.8348 µCi	1.0187 mg/kg	1.874
035M	Day 20	dose2	358.000 g	0.834 g	0.3662 mg	15584245.3470	7.0199 µCi	1.0230 mg/kg	2.295
035M	Day 21	dose2	362.000 g	0.824 g	0.3618 mg	15397383.8821	6.9358 µCi	0.9995 mg/kg	0.048
035M	Day 22	dose2	368.000 g	0.857 g	0.3763 mg	16014026.6935	7.2135 µCi	1.0226 mg/kg	2.260
035M	Day 23	dose2	380.000 g	0.880 g	0.3864 mg	16443808.0400	7.4071 µCi	1.0169 mg/kg	1.689
035M	Day 24	dose2	380.000 g	0.886 g	0.3891 mg	16555924.9130	7.4576 µCi	1.0238 mg/kg	2.382
035M	Day 25	dose2	385.000 g	0.894 g	0.3926 mg	16705414.0770	7.5250 µCi	1.0196 mg/kg	1.965
035M	Day 26	dose2	388.000 g	0.881 g	0.3869 mg	16462494.1854	7.4155 µCi	0.9971 mg/kg	0.295
035M	Day 27	dose2	396.000 g	0.919 g	0.4035 mg	17172567.7145	7.7354 µCi	1.0190 mg/kg	1.905
035M	Day 28	dose2	402.000 g	0.938 g	0.4119 mg	17527604.4790	7.8953 µCi	1.0246 mg/kg	2.459
036M	Day 1	dose1	212.000 g	0.519 g	0.2288 mg	9554720.3705	4.3039 µCi	1.0793 mg/kg	7.932
036M	Day 2	dose1	216.000 g	0.513 g	0.2262 mg	9444261.1756	4.2542 µCi	1.0471 mg/kg	4.709
036M	Day 3	dose1	221.000 g	0.511 g	0.2253 mg	9407441.4437	4.2376 µCi	1.0194 mg/kg	1.941
036M	Day 4	dose1	227.000 g	0.531 g	0.2341 mg	9775638.7606	4.4034 µCi	1.0313 mg/kg	3.131

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
036M	Day 5	dose1	234.000 g	0.555 g	0.2447 mg	10217475.5407	4.6025 µCi	1.0457 mg/kg	4.568
036M	Day 6	dose1	241.000 g	0.556 g	0.2451 mg	10235885.4066	4.6108 µCi	1.0171 mg/kg	1.713
036M	Day 7	dose1	251.000 g	0.584 g	0.2575 mg	10751361.6500	4.8430 µCi	1.0258 mg/kg	2.579
036M	Day 8	dose1	256.000 g	0.599 g	0.2641 mg	11027509.6377	4.9673 µCi	1.0316 mg/kg	3.159
036M	Day 9	dose1	266.000 g	0.623 g	0.2747 mg	11469346.4179	5.1664 µCi	1.0326 mg/kg	3.259
036M	Day 10	dose2	272.000 g	0.638 g	0.2802 mg	11921760.8290	5.3702 µCi	1.0300 mg/kg	2.997
036M	Day 11	dose2	279.000 g	0.660 g	0.2898 mg	12332856.0299	5.5553 µCi	1.0388 mg/kg	3.875
036M	Day 12	dose2	287.000 g	0.668 g	0.2933 mg	12482345.1940	5.6227 µCi	1.0220 mg/kg	2.204
036M	Day 13	dose2	296.000 g	0.690 g	0.3030 mg	12893440.3951	5.8079 µCi	1.0236 mg/kg	2.360
036M	Day 14	dose2	300.000 g	0.700 g	0.3074 mg	13080301.8501	5.8920 µCi	1.0246 mg/kg	2.459
036M	Day 15	dose2	306.000 g	0.709 g	0.3113 mg	13248477.1596	5.9678 µCi	1.0174 mg/kg	1.742
036M	Day 16	dose2	308.000 g	0.717 g	0.3148 mg	13397966.3234	6.0351 µCi	1.0222 mg/kg	2.221
036M	Day 17	dose2	315.000 g	0.735 g	0.3227 mg	13734316.9426	6.1866 µCi	1.0246 mg/kg	2.459
036M	Day 18	dose2	318.000 g	0.746 g	0.3276 mg	13939864.5431	6.2792 µCi	1.0301 mg/kg	3.011
036M	Day 19	dose2	326.000 g	0.762 g	0.3346 mg	14238842.8710	6.4139 µCi	1.0264 mg/kg	2.639
036M	Day 20	dose2	330.000 g	0.769 g	0.3377 mg	14369645.8896	6.4728 µCi	1.0233 mg/kg	2.326
036M	Day 21	dose2	340.000 g	0.797 g	0.3500 mg	14892857.9634	6.7085 µCi	1.0293 mg/kg	2.933
036M	Day 22	dose2	340.000 g	0.796 g	0.3495 mg	14874171.8181	6.7001 µCi	1.0280 mg/kg	2.803
036M	Day 23	dose2	347.000 g	0.807 g	0.3544 mg	15079719.4186	6.7927 µCi	1.0212 mg/kg	2.122
036M	Day 24	dose2	349.000 g	0.811 g	0.3561 mg	15154464.0004	6.8263 µCi	1.0204 mg/kg	2.040
036M	Day 25	dose2	349.000 g	0.806 g	0.3539 mg	15061033.2729	6.7842 µCi	1.0141 mg/kg	1.411
036M	Day 26	dose2	352.000 g	0.818 g	0.3592 mg	15285267.0190	6.8853 µCi	1.0204 mg/kg	2.043
036M	Day 27	dose2	351.000 g	0.815 g	0.3579 mg	15229203.5824	6.8600 µCi	1.0196 mg/kg	1.959
036M	Day 28	dose2	357.000 g	0.828 g	0.3636 mg	15472128.4741	6.9694 µCi	1.0184 mg/kg	1.844

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
037F	Day 1	dose1	175.000 g	0.455 g	0.2006 mg	8376488.9569	3.7732 µCi	1.1463 mg/kg	14.629
037F	Day 2	dose1	180.000 g	0.428 g	0.1887 mg	7879422.5791	3.5493 µCi	1.0483 mg/kg	4.831
037F	Day 3	dose1	182.000 g	0.416 g	0.1834 mg	7658504.1891	3.4498 µCi	1.0077 mg/kg	0.773
037F	Day 4	dose1	187.000 g	0.455 g	0.2006 mg	8376488.9568	3.7732 µCi	1.0727 mg/kg	7.273
037F	Day 5	dose1	184.000 g	0.440 g	0.1940 mg	81003340.9693	3.6488 µCi	1.0543 mg/kg	5.428
037F	Day 6	dose1	190.000 g	0.455 g	0.2006 mg	8376488.9569	3.7732 µCi	1.0558 mg/kg	5.579
037F	Day 7	dose1	195.000 g	0.454 g	0.2002 mg	8358079.0910	3.7649 µCi	1.0265 mg/kg
037F	Day 8	dose1	195.000 g	0.462 g	0.2037 mg	8505358.0176	3.8312 µCi	1.0445 mg/kg	2.646
037F	Day 9	dose1	193.000 g	0.456 g	0.2010 mg	8394898.8228	3.7815 µCi	1.0417 mg/kg	4.166
037F	Day 10	dose2	203.000 g	0.496 g	0.2178 mg	9268328.1681	4.1749 µCi	1.0729 mg/kg	7.290
037F	Day 11	dose2	203.000 g	0.484 g	0.2125 mg	9044094.4219	4.0739 µCi	1.0469 mg/kg	4.694
037F	Day 12	dose2	206.000 g	0.488 g	0.2143 mg	9118839.0040	4.1076 µCi	1.0402 mg/kg	4.022
037F	Day 13	dose2	205.000 g	0.486 g	0.2134 mg	9081466.7129	4.0908 µCi	1.0410 mg/kg	4.101
037F	Day 14	dose2	215.000 g	0.519 g	0.2279 mg	9698109.5144	4.3685 µCi	1.0600 mg/kg	5.999
037F	Day 15	dose2	217.000 g	0.510 g	0.2239 mg	9529934.2051	4.2928 µCi	1.0320 mg/kg	3.201
037F	Day 16	dose2	219.000 g	0.515 g	0.2261 mg	9623364.9324	4.3348 µCi	1.0326 mg/kg	3.261
037F	Day 17	dose2	215.000 g	0.512 g	0.2248 mg	9557306.4959	4.3096 µCi	1.0457 mg/kg	4.569
037F	Day 18	dose2	222.000 g	0.517 g	0.2270 mg	9660731.2236	4.3517 µCi	1.0226 mg/kg	2.261
037F	Day 19	dose2	223.000 g	0.533 g	0.2340 mg	99599715.5516	4.4864 µCi	1.0495 mg/kg	4.953
037F	Day 20	dose2	228.000 g	0.532 g	0.2336 mg	9941029.4059	4.4779 µCi	1.0246 mg/kg	2.459
037F	Day 21	dose2	220.000 g	0.518 g	0.2275 mg	9679423.3689	4.3601 µCi	1.0339 mg/kg	3.390
037F	Day 22	dose2	228.000 g	0.534 g	0.2345 mg	9978401.6871	4.4948 µCi	1.0284 mg/kg	2.844
037F	Day 23	dose2	232.000 g	0.544 g	0.2389 mg	10165263.1521	4.5789 µCi	1.0296 mg/kg	2.964
037F	Day 24	dose2	234.000 g	0.551 g	0.2419 mg	10296066.1705	4.6379 µCi	1.0340 mg/kg	3.397

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
037F	Day 25	dose2	228.000 g	0.535 g	0.2349 mg	9997087.8426	4.5032 µCi	1.0304 mg/kg	3.037
037F	Day 26	dose2	238.000 g	0.560 g	0.2459 mg	10464241.4799	4.7136 µCi	1.0332 mg/kg	3.320
037F	Day 27	dose2	240.000 g	0.570 g	0.2503 mg	10651102.9349	4.7978 µCi	1.0429 mg/kg	4.289
037F	Day 28	dose2	243.000 g	0.575 g	0.2525 mg	10744533.6626	4.8399 µCi	1.0390 mg/kg	3.905
038F	Day 1	dose1	176.000 g	0.447 g	0.1971 mg	8229210.0302	3.7069 µCi	1.1197 mg/kg	11.974
038F	Day 2	dose1	180.000 g	0.431 g	0.1900 mg	7934652.1766	3.5742 µCi	1.0557 mg/kg	5.566
038F	Day 3	dose1	186.000 g	0.433 g	0.1909 mg	7971471.9084	3.5908 µCi	1.0263 mg/kg	2.635
038F	Day 4	dose1	180.000 g	0.429 g	0.1891 mg	7897832.4449	3.5576 µCi	1.0508 mg/kg	5.076
038F	Day 5	dose1	191.000 g	0.445 g	0.1962 mg	8192390.2983	3.6903 µCi	1.0272 mg/kg	2.718
038F	Day 6	dose1	193.000 g	0.447 g	0.1971 mg	8229210.0300	3.7069 µCi	1.0211 mg/kg	2.111
038F	Day 7	dose1	197.000 g	0.452 g	0.1993 mg	8321259.3594	3.7463 µCi	1.0116 mg/kg	1.156
038F	Day 8	dose1	193.000 g	0.452 g	0.1993 mg	8321259.3593	3.7483 µCi	1.0325 mg/kg	3.253
038F	Day 9	dose1	202.000 g	0.472 g	0.2081 mg	8689456.6762	3.9142 µCi	1.0302 mg/kg	3.018
038F	Day 10	dose2	203.000 g	0.476 g	0.2090 mg	8894605.2580	4.0066 µCi	1.0296 mg/kg	2.964
038F	Day 11	dose2	207.000 g	0.481 g	0.2112 mg	8988035.9654	4.0487 µCi	1.0203 mg/kg	2.035
038F	Day 12	dose2	207.000 g	0.484 g	0.2125 mg	9044094.4220	4.0739 µCi	1.0267 mg/kg	2.671
038F	Day 13	dose2	216.000 g	0.511 g	0.2244 mg	9548620.3504	4.3012 µCi	1.0388 mg/kg	3.882
038F	Day 14	dose2	219.000 g	0.492 g	0.2160 mg	9193583.5860	4.1413 µCi	0.9865 mg/kg	1.351
038F	Day 15	dose2	218.000 g	0.508 g	0.2231 mg	9492561.9141	4.2759 µCi	1.0232 mg/kg	2.325
038F	Day 16	dose2	214.000 g	0.507 g	0.2226 mg	9473875.7685	4.2675 µCi	1.0403 mg/kg	4.032
038F	Day 17	dose2	224.000 g	0.524 g	0.2301 mg	9791540.2419	4.4106 µCi	1.0272 mg/kg	2.720
038F	Day 18	dose2	223.000 g	0.524 g	0.2301 mg	9791540.2419	4.4106 µCi	1.0318 mg/kg	3.181
038F	Day 19	dose2	224.000 g	0.521 g	0.2288 mg	9735481.8056	4.3854 µCi	1.0213 mg/kg	2.132
038F	Day 20	dose2	221.000 g	0.520 g	0.2283 mg	9716795.6600	4.3769 µCi	1.0332 mg/kg	3.320

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
038F	Day 21	dose2	228,000 g	0.538 g	0.2362 mg	10053146.2790	4.5284 µCi	1.0361 mg/kg	3.615
038F	Day 22	dose2	232,000 g	0.544 g	0.2389 mg	10165263.1519	4.5789 µCi	1.0296 mg/kg	2.964
038F	Day 23	dose2	234,000 g	0.544 g	0.2389 mg	10165263.1520	4.5789 µCi	1.0208 mg/kg	2.084
038F	Day 24	dose2	229,000 g	0.524 g	0.2301 mg	9791540.2420	4.4106 µCi	1.0048 mg/kg	0.478
038F	Day 25	dose2	236,000 g	0.556 g	0.2441 mg	10389496.8979	4.6800 µCi	1.0345 mg/kg	3.451
038F	Day 26	dose2	238,000 g	0.556 g	0.2441 mg	10389496.8980	4.6800 µCi	1.0258 mg/kg	2.562
038F	Day 27	dose2	242,000 g	0.574 g	0.2520 mg	10725847.5170	4.8315 µCi	1.0415 mg/kg	4.153
038F	Day 28	dose2	236,000 g	0.566 g	0.2485 mg	10576358.3529	4.7641 µCi	1.0531 mg/kg	5.312
039F	Day 1	dose1	178,000 g	0.443 g	0.1953 mg	8155570.5669	3.6737 µCi	1.0972 mg/kg	9.725
039F	Day 2	dose1	174,000 g	0.422 g	0.1861 mg	7768963.3842	3.4995 µCi	1.0693 mg/kg	6.926
039F	Day 3	dose1	180,000 g	0.411 g	0.1812 mg	7566454.8598	3.4083 µCi	1.0067 mg/kg	0.668
039F	Day 4	dose1	187,000 g	0.429 g	0.1891 mg	7897832.4451	3.5576 µCi	1.0114 mg/kg	1.143
039F	Day 5	dose1	189,000 g	0.445 g	0.1962 mg	8192390.2985	3.6903 µCi	1.0381 mg/kg	3.805
039F	Day 6	dose1	190,000 g	0.454 g	0.2002 mg	8358079.0909	3.7649 µCi	1.0535 mg/kg	5.347
039F	Day 7	dose1	196,000 g	0.456 g	0.2010 mg	8394898.8227	3.7815 µCi	1.0257 mg/kg	2.572
039F	Day 8	dose1	199,000 g	0.471 g	0.2077 mg	8611046.8102	3.9059 µCi	1.0435 mg/kg	4.349
039F	Day 9	dose1	199,000 g	0.463 g	0.2041 mg	8523767.8835	3.8395 µCi	1.0258 mg/kg	2.577
039F	Day 10	dose2	200,000 g	0.468 g	0.2055 mg	8745116.0941	3.9392 µCi	1.0275 mg/kg	2.752
039F	Day 11	dose2	208,000 g	0.501 g	0.2200 mg	9361758.8954	4.2170 µCi	1.0577 mg/kg	5.766
039F	Day 12	dose2	214,000 g	0.515 g	0.2261 mg	9623364.9326	4.3348 µCi	1.0567 mg/kg	5.674
039F	Day 13	dose2	217,000 g	0.506 g	0.2222 mg	9455189.6231	4.2591 µCi	1.0239 mg/kg	2.392
039F	Day 14	dose2	214,000 g	0.514 g	0.2257 mg	9604678.7869	4.3264 µCi	1.0547 mg/kg	5.468
039F	Day 15	dose2	218,000 g	0.518 g	0.2275 mg	9679423.3689	4.3601 µCi	1.0434 mg/kg	4.339
039F	Day 16	dose2	225,000 g	0.524 g	0.2301 mg	9791540.2421	4.4106 µCi	1.0226 mg/kg	2.264

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
039F	Day 17	dose2	227.000 g	0.528 g	0.2319 mg	9866284.8239	4.4443 µCi	1.0214 mg/kg	2.137
039F	Day 18	dose2	221.000 g	0.515 g	0.2261 mg	9623364.9324	4.3348 µCi	1.0233 mg/kg	2.327
039F	Day 19	dose2	231.000 g	0.539 g	0.2367 mg	10071832.4244	4.5369 µCi	1.0246 mg/kg	2.459
039F	Day 20	dose2	233.000 g	0.532 g	0.2336 mg	9941029.4060	4.4779 µCi	1.0026 mg/kg	0.260
039F	Day 21	dose2	233.000 g	0.534 g	0.2345 mg	9978401.6989	4.4948 µCi	1.0064 mg/kg	0.637
039F	Day 22	dose2	229.000 g	0.532 g	0.2336 mg	9941029.4059	4.4779 µCi	1.0201 mg/kg	2.012
039F	Day 23	dose2	238.000 g	0.557 g	0.2446 mg	10408183.0435	4.6884 µCi	1.0277 mg/kg	2.766
039F	Day 24	dose2	239.000 g	0.557 g	0.2446 mg	10408183.0435	4.6884 µCi	1.0234 mg/kg	2.337
039F	Day 25	dose2	239.000 g	0.565 g	0.2481 mg	10557672.2075	4.7557 µCi	1.0381 mg/kg	3.806
039F	Day 26	dose2	235.000 g	0.536 g	0.2354 mg	10015773.9880	4.5116 µCi	1.0015 mg/kg	0.154
039F	Day 27	dose2	243.000 g	0.540 g	0.2371 mg	10090518.5/01	4.5453 µCi	0.9758 mg/kg	2.420
039F	Day 28	dose2	243.000 g	0.573 g	0.2516 mg	10707161.3715	4.8230 µCi	1.0354 mg/kg	3.543
040F	Day 1	dose1	187.000 g	0.419 g	0.1847 mg	7713733.7867	3.4747 µCi	0.9879 mg/kg	1.215
040F	Day 2	dose1	182.000 g	0.432 g	0.1905 mg	7953062.0427	3.5825 µCi	1.0465 mg/kg	4.648
040F	Day 3	dose1	186.000 g	0.431 g	0.1900 mg	7934652.1767	3.5742 µCi	1.0216 mg/kg	2.161
040F	Day 4	dose1	189.000 g	0.450 g	0.1984 mg	8284439.6277	3.7317 µCi	1.0497 mg/kg	4.971
040F	Day 5	dose1	193.000 g	0.442 g	0.1949 mg	8137160.7009	3.6654 µCi	1.0097 mg/kg	0.968
040F	Day 6	dose1	190.000 g	0.440 g	0.1940 mg	8100340.9692	3.6488 µCi	1.0210 mg/kg	2.099
040F	Day 7	dose1	201.000 g	0.465 g	0.2050 mg	85860587.6151	3.8561 µCi	1.0199 mg/kg	1.995
040F	Day 8	dose1	200.000 g	0.466 g	0.2065 mg	8578997.4812	3.8644 µCi	1.0273 mg/kg	2.725
040F	Day 9	dose1	202.000 g	0.475 g	0.2094 mg	8744636.2736	3.9390 µCi	1.0367 mg/kg	3.672
040F	Day 10	dose2	201.000 g	0.478 g	0.2089 mg	8931977.5491	4.0234 µCi	1.0443 mg/kg	4.425
040F	Day 11	dose2	206.000 g	0.461 g	0.2024 mg	8614313.0755	3.8803 µCi	0.9827 mg/kg	1.733
040F	Day 12	dose2	210.000 g	0.489 g	0.2191 mg	9324386.6046	4.2002 µCi	1.0434 mg/kg	4.341

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
040F	Day 13	dose2	213.000 g	0.494 g	0.2169 mg	9230935.8769	4.1581 µCi	1.0184 mg/kg	1.841
040F	Day 14	dose2	211.000 g	0.489 g	0.2147 mg	9137525.1495	4.1160 µCi	1.0177 mg/kg	1.765
040F	Day 15	dose2	220.000 g	0.499 g	0.2191 mg	9324386.6046	4.2002 µCi	0.9960 mg/kg	0.402
040F	Day 16	dose2	219.000 g	0.510 g	0.2239 mg	9529324.2051	4.2928 µCi	1.0226 mg/kg	2.258
040F	Day 17	dose2	219.000 g	0.498 g	0.2187 mg	9305700.4591	4.1918 µCi	0.9985 mg/kg	0.148
040F	Day 18	dose2	216.000 g	0.492 g	0.2160 mg	9193583.5859	4.1413 µCi	1.0002 mg/kg	0.019
040F	Day 19	dose2	224.000 g	0.517 g	0.2270 mg	9660737.2235	4.3517 µCi	1.0135 mg/kg	1.348
040F	Day 20	dose2	227.000 g	0.520 g	0.2283 mg	9716795.6601	4.3769 µCi	1.0059 mg/kg	0.589
040F	Day 21	dose2	229.000 g	0.529 g	0.2323 mg	9884970.9694	4.4527 µCi	1.0144 mg/kg	1.436
040F	Day 22	dose2	214.000 g	0.504 g	0.2213 mg	9417817.3321	4.2423 µCi	1.0342 mg/kg	3.417
040F	Day 23	dose2	232.000 g	0.545 g	0.2393 mg	10183949.2975	4.5874 µCi	1.0315 mg/kg	3.153
040F	Day 24	dose2	231.000 g	0.527 g	0.2314 mg	9847598.6785	4.4359 µCi	1.0018 mg/kg	0.178
040F	Day 25	dose2	232.000 g	0.540 g	0.2371 mg	10090518.5700	4.5453 µCi	1.0221 mg/kg	2.207
040F	Day 26	dose2	228.000 g	0.536 g	0.2354 mg	10015773.9881	4.5116 µCi	1.0323 mg/kg	3.229
040F	Day 27	dose2	240.000 g	0.561 g	0.2463 mg	10482927.6254	4.7220 µCi	1.0264 mg/kg	2.642
040F	Day 28	dose2	239.000 g	0.546 g	0.2398 mg	10202635.4430	4.5958 µCi	1.0032 mg/kg	0.316
057M	Day 1	dose1	223.000 g	0.520 g	0.2293 mg	9573130.2364	4.3122 µCi	1.0261 mg/kg	2.806
057M	Day 2	dose1	229.000 g	0.542 g	0.2390 mg	9978147.2848	4.4947 µCi	1.0435 mg/kg	4.348
057M	Day 3	dose1	239.000 g	0.534 g	0.2354 mg	9830868.3581	4.4283 µCi	0.9851 mg/kg	1.494
057M	Day 4	dose1	247.000 g	0.570 g	0.2513 mg	10493623.5282	4.7269 µCi	1.0174 mg/kg	1.742
057M	Day 5	dose1	257.000 g	0.590 g	0.2601 mg	10861820.8451	4.8927 µCi	1.0121 mg/kg	1.214
057M	Day 6	dose1	268.000 g	0.614 g	0.2707 mg	11303657.6254	5.0917 µCi	1.0101 mg/kg	1.008
057M	Day 7	dose1	280.000 g	0.645 g	0.2844 mg	11874363.4662	5.3488 µCi	1.0156 mg/kg	1.560
057M	Day 8	dose1	285.000 g	0.664 g	0.2927 mg	12224150.9172	5.5064 µCi	1.0272 mg/kg	2.717

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
057M	Day 9	dose1	295.000 g	0.685 g	0.3020 mg	12610758.0988	5.6805 µCi	1.0237 mg/kg	2.374
057M	Day 10	dose2	304.000 g	0.709 g	0.3113 mg	13248477.1594	5.9678 µCi	1.0241 mg/kg	2.411
057M	Day 11	dose2	314.000 g	0.724 g	0.3179 mg	13528769.3419	6.0940 µCi	1.0125 mg/kg	1.247
057M	Day 12	dose2	310.000 g	0.735 g	0.3227 mg	13733316.9424	6.1866 µCi	1.0411 mg/kg	4.112
057M	Day 13	dose2	331.000 g	0.775 g	0.3403 mg	14481762.7625	6.5233 µCi	1.0281 mg/kg	2.613
057M	Day 14	dose2	325.000 g	0.749 g	0.3288 mg	13995922.9794	6.3045 µCi	1.0120 mg/kg	1.198
057M	Day 15	dose2	346.000 g	0.809 g	0.3552 mg	15117091.7084	6.8095 µCi	1.0267 mg/kg	2.671
057M	Day 16	dose2	355.000 g	0.821 g	0.3605 mg	15341325.4555	6.9105 µCi	1.0155 mg/kg	1.552
057M	Day 17	dose2	363.000 g	0.844 g	0.3706 mg	15771106.8019	7.1041 µCi	1.0210 mg/kg	2.096
057M	Day 18	dose2	369.000 g	0.855 g	0.3754 mg	15976654.4024	7.1967 µCi	1.0174 mg/kg	1.745
057M	Day 19	dose2	371.000 g	0.856 g	0.3759 mg	15995340.5480	7.2051 µCi	1.0131 mg/kg	1.315
057M	Day 20	dose2	382.000 g	0.889 g	0.3904 mg	16611983.3494	7.4829 µCi	1.0219 mg/kg	2.191
057M	Day 21	dose2	387.000 g	0.902 g	0.3961 mg	16854903.2411	7.5923 µCi	1.0235 mg/kg	2.346
057M	Day 22	dose2	391.000 g	0.912 g	0.4005 mg	17041764.6961	7.6765 µCi	1.0242 mg/kg	2.422
057M	Day 23	dose2	402.000 g	0.930 g	0.4084 mg	17318115.3149	7.8280 µCi	1.0159 mg/kg	1.585
057M	Day 24	dose2	403.000 g	0.937 g	0.4114 mg	17508918.3335	7.8869 µCi	1.0210 mg/kg	2.098
057M	Day 25	dose2	408.000 g	0.934 g	0.4101 mg	17452859.8869	7.8616 µCi	1.0052 mg/kg	0.522
057M	Day 26	dose2	414.000 g	0.957 g	0.4202 mg	17882641.2436	8.0552 µCi	1.0150 mg/kg	1.504
057M	Day 27	dose2	421.000 g	0.966 g	0.4242 mg	18050816.5530	8.1310 µCi	1.0076 mg/kg	0.755
057M	Day 28	dose2	425.000 g	0.987 g	0.4334 mg	18443225.6084	8.3078 µCi	1.0198 mg/kg	1.977
058M	Day 1	dose1	204.000 g	0.515 g	0.2271 mg	9481080.9073	4.2708 µCi	1.1130 mg/kg	11.301
058M	Day 2	dose1	210.000 g	0.514 g	0.2286 mg	9462671.0414	4.2625 µCi	1.0791 mg/kg	7.911
058M	Day 3	dose1	220.000 g	0.511 g	0.2253 mg	9407441.4438	4.2376 µCi	1.0240 mg/kg	2.404
058M	Day 4	dose1	233.000 g	0.545 g	0.2403 mg	10033376.8822	4.5195 µCi	1.0312 mg/kg	3.124

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
058M	Day 5	dose 1	238.000 g	0.544 g	0.2398 mg	10014967.0165	4.5112 µCi	1.0077 mg/kg	0.773
058M	Day 6	dose 1	248.000 g	0.577 g	0.2544 mg	10622492.5893	4.7849 µCi	1.0258 mg/kg	2.576
058M	Day 7	dose 1	259.000 g	0.600 g	0.2665 mg	11045919.5037	4.9756 µCi	1.0213 mg/kg	2.134
058M	Day 8	dose 1	268.000 g	0.620 g	0.2733 mg	11414116.8204	5.1415 µCi	1.0199 mg/kg	1.995
058M	Day 9	dose 1	276.000 g	0.646 g	0.2848 mg	11892773.3321	5.3571 µCi	1.0319 mg/kg	3.191
058M	Day 10	dose 2	285.000 g	0.663 g	0.2911 mg	12388914.4665	5.5806 µCi	1.0215 mg/kg	2.151
058M	Day 11	dose 2	289.000 g	0.673 g	0.2955 mg	12575775.9216	5.6648 µCi	1.0226 mg/kg	2.256
058M	Day 12	dose 2	287.000 g	0.670 g	0.2942 mg	12519717.4850	5.6395 µCi	1.0251 mg/kg	2.510
058M	Day 13	dose 2	306.000 g	0.721 g	0.3166 mg	13472110.9054	6.0688 µCi	1.0346 mg/kg	3.463
058M	Day 14	dose 2	301.000 g	0.703 g	0.3087 mg	13136360.2866	5.9173 µCi	1.0256 mg/kg	2.556
058M	Day 15	dose 2	315.000 g	0.740 g	0.3249 mg	13827747.6700	6.2287 µCi	1.0316 mg/kg	3.156
058M	Day 16	dose 2	327.000 g	0.763 g	0.3350 mg	14257529.0165	6.4223 µCi	1.0246 mg/kg	2.459
058M	Day 17	dose 2	328.000 g	0.759 g	0.3333 mg	14182784.4345	6.3886 µCi	1.0161 mg/kg	1.611
058M	Day 18	dose 2	333.000 g	0.771 g	0.3386 mg	14407018.1806	6.4896 µCi	1.0167 mg/kg	1.668
058M	Day 19	dose 2	335.000 g	0.781 g	0.3429 mg	14593879.6355	6.5738 µCi	1.0237 mg/kg	2.372
058M	Day 20	dose 2	341.000 g	0.798 g	0.3504 mg	14911544.1091	6.7169 µCi	1.0276 mg/kg	2.759
058M	Day 21	dose 2	347.000 g	0.815 g	0.3579 mg	15229208.5826	6.8600 µCi	1.0313 mg/kg	3.134
058M	Day 22	dose 2	353.000 g	0.823 g	0.3614 mg	15378897.7465	6.9273 µCi	1.0238 mg/kg	2.376
058M	Day 23	dose 2	358.000 g	0.827 g	0.3631 mg	15453442.3285	6.9610 µCi	1.0144 mg/kg	1.437
058M	Day 24	dose 2	362.000 g	0.823 g	0.3614 mg	15378897.7465	6.9273 µCi	0.9983 mg/kg	0.169
058M	Day 25	dose 2	364.000 g	0.844 g	0.3706 mg	15771106.8019	7.1041 µCi	1.0182 mg/kg	1.816
058M	Day 26	dose 2	363.000 g	0.842 g	0.3667 mg	15733734.5111	7.0873 µCi	1.0185 mg/kg	1.854
058M	Day 27	dose 2	372.000 g	0.862 g	0.3785 mg	16107457.4209	7.2556 µCi	1.0175 mg/kg	1.751
058M	Day 28	dose 2	374.000 g	0.880 g	0.3864 mg	16443808.0401	7.4071 µCi	1.0332 mg/kg	3.320

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
059M	Day 1	dose 1	220.000 g	0.478 g	0.2107 mg	8799915.8711	3.9639 µCi	0.9579 mg/kg	4.209
059M	Day 2	dose 1	227.000 g	0.499 g	0.2200 mg	9186523.0538	4.1381 µCi	0.9692 mg/kg	3.084
059M	Day 3	dose 1	235.000 g	0.535 g	0.2359 mg	9849278.2240	4.4366 µCi	1.0037 mg/kg	0.371
059M	Day 4	dose 1	243.000 g	0.572 g	0.2522 mg	10530443.2600	4.7434 µCi	1.0378 mg/kg	3.779
059M	Day 5	dose 1	250.000 g	0.573 g	0.2526 mg	10548853.1258	4.7517 µCi	1.0105 mg/kg	1.050
059M	Day 6	dose 1	260.000 g	0.576 g	0.2539 mg	10604082.7233	4.7766 µCi	0.9767 mg/kg	2.328
059M	Day 7	dose 1	268.000 g	0.626 g	0.2760 mg	11524576.0155	5.1913 µCi	1.0298 mg/kg	2.982
059M	Day 8	dose 1	276.000 g	0.641 g	0.2826 mg	11800724.0030	5.3156 µCi	1.0239 mg/kg	2.393
059M	Day 9	dose 1	281.000 g	0.651 g	0.2870 mg	11984822.6612	5.3986 µCi	1.0214 mg/kg	2.140
059M	Day 10	dose 2	290.000 g	0.659 g	0.2894 mg	12314169.8844	5.5469 µCi	0.9978 mg/kg	0.216
059M	Day 11	dose 2	298.000 g	0.701 g	0.3078 mg	13098987.9956	5.9004 µCi	1.0329 mg/kg	3.294
059M	Day 12	dose 2	306.000 g	0.715 g	0.3140 mg	13360594.0326	6.0183 µCi	1.0260 mg/kg	2.603
059M	Day 13	dose 2	311.000 g	0.723 g	0.3175 mg	13510083.1964	6.0856 µCi	1.0208 mg/kg	2.082
059M	Day 14	dose 2	317.000 g	0.725 g	0.3184 mg	13547455.4874	6.1025 µCi	1.0043 mg/kg	0.427
059M	Day 15	dose 2	325.000 g	0.750 g	0.3293 mg	14014609.1249	6.3129 µCi	1.0133 mg/kg	1.333
059M	Day 16	dose 2	333.000 g	0.746 g	0.3276 mg	13939864.5429	6.2792 µCi	0.9837 mg/kg	1.629
059M	Day 17	dose 2	341.000 g	0.783 g	0.3438 mg	14631251.9266	6.5907 µCi	1.0083 mg/kg	0.828
059M	Day 18	dose 2	342.000 g	0.775 g	0.3403 mg	14481762.7625	6.5233 µCi	0.9951 mg/kg	0.494
059M	Day 19	dose 2	347.000 g	0.787 g	0.3456 mg	14705996.5084	6.6243 µCi	0.9959 mg/kg	0.409
059M	Day 20	dose 2	351.000 g	0.812 g	0.3566 mg	15173150.1459	6.8348 µCi	1.0158 mg/kg	1.583
059M	Day 21	dose 2	356.000 g	0.839 g	0.3684 mg	15677676.0745	7.0620 µCi	1.0349 mg/kg	3.487
059M	Day 22	dose 2	363.000 g	0.857 g	0.3763 mg	16014026.6935	7.2135 µCi	1.0367 mg/kg	3.669
059M	Day 23	dose 2	366.000 g	0.835 g	0.3667 mg	15602931.4926	7.0283 µCi	1.0018 mg/kg	0.179
059M	Day 24	dose 2	372.000 g	0.848 g	0.3724 mg	15845851.3839	7.1378 µCi	1.0010 mg/kg	0.098

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
059M	Day 25	dose2	377.000 g	0.874 g	0.3838 mg	16331691.1671	7.3566 µCi	1.0180 mg/kg	1.799
059M	Day 26	dose2	379.000 g	0.875 g	0.3842 mg	16350377.3124	7.3650 µCi	1.0138 mg/kg	1.378
059M	Day 27	dose2	384.000 g	0.867 g	0.3807 mg	16200608.1486	7.2977 µCi	0.9914 mg/kg	0.857
059M	Day 28	dose2	389.000 g	0.896 g	0.3934 mg	16742786.3679	7.5418 µCi	1.0114 mg/kg	1.142
060M	Day 1	dose1	209.000 g	0.478 g	0.2107 mg	8799915.0712	3.9639 µCi	1.0083 mg/kg	0.833
060M	Day 2	dose1	217.000 g	0.482 g	0.2125 mg	8873555.3345	3.9971 µCi	0.9793 mg/kg	2.072
060M	Day 3	dose1	222.000 g	0.498 g	0.2196 mg	9168113.1878	4.1298 µCi	0.9890 mg/kg	1.100
060M	Day 4	dose1	233.000 g	0.503 g	0.2218 mg	9260162.5171	4.1712 µCi	0.9518 mg/kg	4.823
060M	Day 5	dose1	241.000 g	0.553 g	0.2438 mg	10180655.8090	4.5859 µCi	1.0116 mg/kg	1.165
060M	Day 6	dose1	248.000 g	0.582 g	0.2566 mg	10714541.9184	4.8264 µCi	1.0346 mg/kg	3.465
060M	Day 7	dose1	255.000 g	0.593 g	0.2614 mg	10917050.4425	4.9176 µCi	1.0253 mg/kg	2.526
060M	Day 8	dose1	266.000 g	0.617 g	0.2720 mg	11358887.2229	5.1166 µCi	1.0226 mg/kg	2.264
060M	Day 9	dose1	273.000 g	0.588 g	0.2592 mg	10829001.1135	4.8761 µCi	0.9496 mg/kg	5.041
060M	Day 10	dose2	281.000 g	0.630 g	0.2766 mg	11772271.6649	5.3028 µCi	0.9845 mg/kg	1.552
060M	Day 11	dose2	285.000 g	0.672 g	0.2951 mg	12557089.7759	5.6563 µCi	1.0354 mg/kg	3.538
060M	Day 12	dose2	294.000 g	0.677 g	0.2973 mg	12650520.5036	5.6984 µCi	1.0111 mg/kg	1.115
060M	Day 13	dose2	302.000 g	0.692 g	0.3039 mg	12930812.6659	5.8247 µCi	1.0062 mg/kg	0.617
060M	Day 14	dose2	309.000 g	0.689 g	0.3025 mg	12874754.2495	5.7994 µCi	0.9791 mg/kg	2.088
060M	Day 15	dose2	319.000 g	0.715 g	0.3140 mg	13360594.0326	6.0183 µCi	0.9842 mg/kg	1.579
060M	Day 16	dose2	325.000 g	0.738 g	0.3241 mg	13750375.3789	6.2119 µCi	0.9971 mg/kg	0.288
060M	Day 17	dose2	329.000 g	0.762 g	0.3346 mg	1423842.8710	6.4139 µCi	1.0170 mg/kg	1.703
060M	Day 18	dose2	335.000 g	0.768 g	0.3372 mg	14350595.7439	6.4644 µCi	1.0067 mg/kg	0.668
060M	Day 19	dose2	339.000 g	0.805 g	0.3535 mg	15042347.1275	6.7758 µCi	1.0427 mg/kg	4.272
060M	Day 20	dose2	347.000 g	0.806 g	0.3539 mg	15061033.2729	6.7842 µCi	1.0200 mg/kg	1.995

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
060M	Day 21	dose2	353.000 g	0.815 g	0.3579 mg	15229208.5825	6.8600 µCi	1.0138 mg/kg	1.381
060M	Day 22	dose2	357.000 g	0.830 g	0.3645 mg	15509500.7649	6.9863 µCi	1.0209 mg/kg	2.090
060M	Day 23	dose2	362.000 g	0.837 g	0.3675 mg	15640303.7836	7.0452 µCi	1.0153 mg/kg	1.529
060M	Day 24	dose2	368.000 g	0.846 g	0.3715 mg	15808479.0930	7.1209 µCi	1.0095 mg/kg	0.948
060M	Day 25	dose2	372.000 g	0.857 g	0.3763 mg	16014026.6934	7.2135 µCi	1.0116 mg/kg	1.161
060M	Day 26	dose2	375.000 g	0.869 g	0.3816 mg	16238260.4394	7.3145 µCi	1.0176 mg/kg	1.756
060M	Day 27	dose2	383.000 g	0.889 g	0.3904 mg	16611983.3495	7.4829 µCi	1.0192 mg/kg	1.924
060M	Day 28	dose2	383.000 g	0.895 g	0.3930 mg	16724100.2225	7.5334 µCi	1.0261 mg/kg	2.612
061F	Day 1	dose1	183.000 g	0.416 g	0.1834 mg	7658504.1892	3.4498 µCi	1.0022 mg/kg	0.222
061F	Day 2	dose1	182.000 g	0.438 g	0.1931 mg	8063521.2376	3.6322 µCi	1.0610 mg/kg	6.102
061F	Day 3	dose1	180.000 g	0.407 g	0.1794 mg	7492815.3964	3.3751 µCi	0.9969 mg/kg	0.312
061F	Day 4	dose1	187.000 g	0.445 g	0.1962 mg	8192390.2985	3.6903 µCi	1.0492 mg/kg	4.915
061F	Day 5	dose1	191.000 g	0.432 g	0.1905 mg	7953062.0426	3.5825 µCi	0.9972 mg/kg	0.283
061F	Day 6	dose1	193.000 g	0.431 g	0.1900 mg	7934652.1768	3.5742 µCi	0.9846 mg/kg	1.544
061F	Day 7	dose1	187.000 g	0.416 g	0.1834 mg	7658504.1890	3.4498 µCi	0.9808 mg/kg	1.922
061F	Day 8	dose1	198.000 g	0.474 g	0.2090 mg	8726276.4077	3.9308 µCi	1.0554 mg/kg	5.544
061F	Day 9	dose1	200.000 g	0.468 g	0.2063 mg	8615817.2126	3.8810 µCi	1.0317 mg/kg	3.166
061F	Day 10	dose2	202.000 g	0.477 g	0.2095 mg	8913291.4034	4.0150 µCi	1.0369 mg/kg	3.691
061F	Day 11	dose2	193.000 g	0.444 g	0.1950 mg	8296648.6019	3.7372 µCi	1.0102 mg/kg	1.018
061F	Day 12	dose2	207.000 g	0.482 g	0.2117 mg	9006722.1311	4.0571 µCi	1.0225 mg/kg	2.247
061F	Day 13	dose2	206.000 g	0.491 g	0.2156 mg	9174897.4406	4.1328 µCi	1.0466 mg/kg	4.662
061F	Day 14	dose2	210.000 g	0.493 g	0.2165 mg	921269.7314	4.1487 µCi	1.0309 mg/kg	3.086
061F	Day 15	dose2	199.000 g	0.471 g	0.2068 mg	8801174.5306	3.9645 µCi	1.0393 mg/kg	3.930
061F	Day 16	dose2	210.000 g	0.496 g	0.2178 mg	9268328.1681	4.1749 µCi	1.0371 mg/kg	3.714

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpnd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
061F	Day 17	dose2	215.000 g	0.513 g	0.2233 mg	958592.6414	4.3180 µCi	1.0477 mg/kg	4.774
061F	Day 18	dose2	217.000 g	0.506 g	0.2222 mg	9455189.6230	4.2591 µCi	1.0239 mg/kg	2.392
061F	Day 19	dose2	209.000 g	0.462 g	0.2039 mg	8632999.2210	3.8887 µCi	0.9707 mg/kg	2.934
061F	Day 20	dose2	225.000 g	0.521 g	0.2268 mg	9735481.8055	4.3854 µCi	1.0168 mg/kg	1.678
061F	Day 21	dose2	223.000 g	0.518 g	0.2225 mg	9879423.3691	4.3601 µCi	1.0200 mg/kg	2.000
061F	Day 22	dose2	227.000 g	0.539 g	0.2367 mg	10071832.4244	4.5369 µCi	1.0426 mg/kg	4.264
061F	Day 23	dose2	215.000 g	0.512 g	0.2248 mg	9567306.4960	4.3096 µCi	1.0457 mg/kg	4.569
061F	Day 24	dose2	230.000 g	0.544 g	0.2369 mg	10165263.1520	4.5789 µCi	1.0386 mg/kg	3.859
061F	Day 25	dose2	232.000 g	0.546 g	0.2358 mg	10202655.4430	4.5958 µCi	1.0334 mg/kg	3.342
061F	Day 26	dose2	231.000 g	0.549 g	0.2411 mg	10258693.8795	4.6210 µCi	1.0436 mg/kg	4.360
061F	Day 27	dose2	221.000 g	0.520 g	0.2283 mg	9716795.6599	4.3769 µCi	1.0332 mg/kg	3.320
061F	Day 28	dose2	238.000 g	0.561 g	0.2463 mg	10482927.6254	4.7220 µCi	1.0350 mg/kg	3.504
062F	Day 1	dose1	182.000 g	0.454 g	0.2002 mg	8358079.0909	3.7649 µCi	1.0938 mg/kg	9.978
062F	Day 2	dose1	182.000 g	0.445 g	0.1982 mg	8192390.2983	3.6903 µCi	1.0780 mg/kg	7.798
062F	Day 3	dose1	189.000 g	0.423 g	0.1885 mg	7787373.2499	3.5078 µCi	0.9867 mg/kg	1.327
062F	Day 4	dose1	191.000 g	0.445 g	0.1982 mg	8192390.2984	3.6903 µCi	1.0272 mg/kg	2.718
062F	Day 5	dose1	194.000 g	0.451 g	0.1988 mg	8302849.4935	3.7400 µCi	1.0249 mg/kg	2.493
062F	Day 6	dose1	194.000 g	0.452 g	0.1983 mg	8321259.3592	3.7483 µCi	1.0272 mg/kg	2.720
062F	Day 7	dose1	201.000 g	0.468 g	0.2033 mg	8615817.2129	3.8810 µCi	1.0265 mg/kg	2.653
062F	Day 8	dose1	204.000 g	0.476 g	0.2089 mg	8763096.1394	3.9473 µCi	1.0287 mg/kg	2.872
062F	Day 9	dose1	207.000 g	0.483 g	0.2129 mg	8891985.2002	4.0054 µCi	1.0287 mg/kg	2.872
062F	Day 10	dose2	201.000 g	0.466 g	0.2046 mg	8707743.8029	3.9224 µCi	1.0180 mg/kg	1.804
062F	Day 11	dose2	212.000 g	0.484 g	0.2125 mg	9044094.4220	4.0739 µCi	1.0025 mg/kg	0.250
062F	Day 12	dose2	213.000 g	0.492 g	0.2160 mg	9193583.5860	4.1413 µCi	1.0143 mg/kg	1.428

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
062F	Day 13	dose2	213.000 g	0.504 g	0.2213 mg	9417817.3321	4.2423 µCi	1.0390 mg/kg	3.902
062F	Day 14	dose2	209.000 g	0.475 g	0.2086 mg	8875919.1125	3.9982 µCi	0.9980 mg/kg	0.202
062F	Day 15	dose2	218.000 g	0.514 g	0.2257 mg	9604678.7870	4.3264 µCi	1.0353 mg/kg	3.533
062F	Day 16	dose2	220.000 g	0.513 g	0.2253 mg	9585932.6416	4.3180 µCi	1.0239 mg/kg	2.392
062F	Day 17	dose2	218.000 g	0.518 g	0.2275 mg	9879423.3690	4.3601 µCi	1.0434 mg/kg	4.339
062F	Day 18	dose2	216.000 g	0.505 g	0.2218 mg	9436503.4776	4.2507 µCi	1.0266 mg/kg	2.662
062F	Day 19	dose2	224.000 g	0.532 g	0.2336 mg	9941029.4059	4.4779 µCi	1.0429 mg/kg	4.289
062F	Day 20	dose2	229.000 g	0.539 g	0.2367 mg	10071832.4246	4.5369 µCi	1.0335 mg/kg	3.354
062F	Day 21	dose2	226.000 g	0.531 g	0.2358 mg	10034460.1335	4.5200 µCi	1.0434 mg/kg	4.337
062F	Day 22	dose2	219.000 g	0.517 g	0.2270 mg	9660737.2235	4.3517 µCi	1.0366 mg/kg	3.662
062F	Day 23	dose2	230.000 g	0.550 g	0.2415 mg	10277380.0250	4.6295 µCi	1.0500 mg/kg	5.005
062F	Day 24	dose2	243.000 g	0.570 g	0.2503 mg	10651102.9349	4.7978 µCi	1.0300 mg/kg	3.001
062F	Day 25	dose2	232.000 g	0.548 g	0.2406 mg	10240007.7340	4.6126 µCi	1.0372 mg/kg	3.721
062F	Day 26	dose2	223.000 g	0.534 g	0.2345 mg	9978401.6971	4.4948 µCi	1.0515 mg/kg	5.150
062F	Day 27	dose2	236.000 g	0.549 g	0.2411 mg	1025863.8796	4.6210 µCi	1.0215 mg/kg	2.149
062F	Day 28	dose2	241.000 g	0.564 g	0.2477 mg	1053886.0619	4.7473 µCi	1.0276 mg/kg	2.763
063F	Day 1	dose1	176.000 g	0.412 g	0.1816 mg	7584864.7258	3.4166 µCi	1.0321 mg/kg	3.206
063F	Day 2	dose1	177.000 g	0.404 g	0.1781 mg	7437585.7990	3.3503 µCi	1.0063 mg/kg	0.630
063F	Day 3	dose1	186.000 g	0.449 g	0.1980 mg	8266029.7617	3.7234 µCi	1.0643 mg/kg	6.427
063F	Day 4	dose1	189.000 g	0.442 g	0.1949 mg	8137160.7010	3.6654 µCi	1.0311 mg/kg	3.105
063F	Day 5	dose1	193.000 g	0.460 g	0.2028 mg	8468538.2859	3.8147 µCi	1.0508 mg/kg	5.080
063F	Day 6	dose1	197.000 g	0.465 g	0.2050 mg	8560587.6151	3.8561 µCi	1.0407 mg/kg	4.066
063F	Day 7	dose1	203.000 g	0.485 g	0.2138 mg	8928784.9320	4.0220 µCi	1.0533 mg/kg	5.333
063F	Day 8	dose1	205.000 g	0.481 g	0.2121 mg	8855145.4687	3.9888 µCi	1.0345 mg/kg	3.446

**Dosing report
Groups 1-5 and 8**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
063F	Day 9	dose 1	200.000 g	0.476 g	0.209 mg	8763096.1395	3.9473 µCi	1.0493 mg/kg	4.929
063F	Day 10	dose 2	210.000 g	0.500 g	0.2196 mg	9343072.7499	4.2086 µCi	1.0455 mg/kg	4.550
063F	Day 11	dose 2	214.000 g	0.527 g	0.2314 mg	9847598.6786	4.4359 µCi	1.0814 mg/kg	8.136
063F	Day 12	dose 2	219.000 g	0.515 g	0.2261 mg	9623364.9324	4.3348 µCi	1.0326 mg/kg	3.261
063F	Day 13	dose 2	216.000 g	0.496 g	0.2178 mg	9268328.1681	4.1749 µCi	1.0083 mg/kg	0.833
063F	Day 14	dose 2	224.000 g	0.527 g	0.2314 mg	9847598.6786	4.4359 µCi	1.0331 mg/kg	3.308
063F	Day 15	dose 2	229.000 g	0.530 g	0.2327 mg	9903657.1149	4.4611 µCi	1.0163 mg/kg	1.628
063F	Day 16	dose 2	235.000 g	0.557 g	0.2446 mg	10408183.0436	4.6884 µCi	1.0408 mg/kg	4.078
063F	Day 17	dose 2	216.000 g	0.508 g	0.2231 mg	9492561.9139	4.2759 µCi	1.0327 mg/kg	3.272
063F	Day 18	dose 2	237.000 g	0.557 g	0.2446 mg	10408183.0435	4.6884 µCi	1.0320 mg/kg	3.200
063F	Day 19	dose 2	236.000 g	0.554 g	0.2433 mg	10352124.6071	4.6631 µCi	1.0308 mg/kg	3.079
063F	Day 20	dose 2	242.000 g	0.571 g	0.2507 mg	10669789.0804	4.8062 µCi	1.0361 mg/kg	3.608
063F	Day 21	dose 2	239.000 g	0.564 g	0.2477 mg	10538986.0619	4.7473 µCi	1.0362 mg/kg	3.623
063F	Day 22	dose 2	242.000 g	0.575 g	0.2525 mg	10744533.6626	4.8399 µCi	1.0433 mg/kg	4.334
063F	Day 23	dose 2	249.000 g	0.571 g	0.2507 mg	10669789.0805	4.8062 µCi	1.0070 mg/kg	0.696
063F	Day 24	dose 2	242.000 g	0.556 g	0.2441 mg	10389496.8880	4.6800 µCi	1.0089 mg/kg	0.886
063F	Day 25	dose 2	244.000 g	0.565 g	0.2481 mg	10557672.2076	4.7557 µCi	1.0168 mg/kg	1.679
063F	Day 26	dose 2	250.000 g	0.593 g	0.2604 mg	11080884.2814	4.9914 µCi	1.0416 mg/kg	4.157
063F	Day 27	dose 2	255.000 g	0.597 g	0.2621 mg	11155628.8835	5.0251 µCi	1.0280 mg/kg	2.803
063F	Day 28	dose 2	260.000 g	0.614 g	0.2696 mg	11473293.3369	5.1682 µCi	1.0370 mg/kg	3.698
064F	Day 1	dose 1	181.000 g	0.421 g	0.1856 mg	7750553.5184	3.4912 µCi	1.0255 mg/kg	2.547
064F	Day 2	dose 1	178.000 g	0.434 g	0.1913 mg	7969881.7743	3.5950 µCi	1.0750 mg/kg	7.495
064F	Day 3	dose 1	184.000 g	0.436 g	0.1922 mg	8026701.5058	3.6156 µCi	1.0447 mg/kg	4.469
064F	Day 4	dose 1	188.000 g	0.453 g	0.1997 mg	8339669.2251	3.7566 µCi	1.0623 mg/kg	6.233

Dosing report
Groups 1-5 and 8

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
064F	Day 5	dose1	199.000 g	0.475 g	0.2094 mg	8744686.2737	3.9390 µCi	1.0524 mg/kg	5.235
064F	Day 6	dose1	193.000 g	0.453 g	0.1997 mg	8339659.2252	3.7566 µCi	1.0348 mg/kg	3.481
064F	Day 7	dose1	202.000 g	0.483 g	0.2129 mg	8891965.2002	4.0054 µCi	1.0542 mg/kg	5.418
064F	Day 8	dose1	207.000 g	0.491 g	0.2165 mg	90392441.1271	4.0717 µCi	1.0458 mg/kg	4.576
064F	Day 9	dose1	209.000 g	0.488 g	0.2151 mg	8884014.5294	4.0469 µCi	1.0294 mg/kg	2.942
064F	Day 10	dose2	206.000 g	0.488 g	0.2143 mg	9118839.0039	4.1076 µCi	1.0402 mg/kg	4.022
064F	Day 11	dose2	211.000 g	0.506 g	0.2222 mg	9455189.6229	4.2591 µCi	1.0530 mg/kg	5.303
064F	Day 12	dose2	220.000 g	0.516 g	0.2266 mg	9642051.0781	4.3433 µCi	1.0299 mg/kg	2.991
064F	Day 13	dose2	220.000 g	0.510 g	0.2239 mg	9529934.2049	4.2928 µCi	1.0179 mg/kg	1.794
064F	Day 14	dose2	215.000 g	0.510 g	0.2239 mg	9529934.2049	4.2928 µCi	1.0416 mg/kg	4.161
064F	Day 15	dose2	223.000 g	0.519 g	0.2279 mg	9698109.5144	4.3685 µCi	1.0220 mg/kg	2.196
064F	Day 16	dose2	228.000 g	0.542 g	0.2380 mg	10127890.8609	4.5621 µCi	1.0438 mg/kg	4.385
064F	Day 17	dose2	213.000 g	0.502 g	0.2204 mg	9380445.0409	4.2254 µCi	1.0349 mg/kg	3.490
064F	Day 18	dose2	222.000 g	0.518 g	0.2275 mg	9679423.3690	4.3601 µCi	1.0246 mg/kg	2.459
064F	Day 19	dose2	232.000 g	0.530 g	0.2327 mg	9903657.1151	4.4611 µCi	1.0031 mg/kg	0.314
064F	Day 20	dose2	237.000 g	0.545 g	0.2393 mg	10183949.2976	4.5874 µCi	1.0098 mg/kg	0.977
064F	Day 21	dose2	235.000 g	0.537 g	0.2358 mg	10033460.1336	4.5200 µCi	1.0034 mg/kg	0.341
064F	Day 22	dose2	230.000 g	0.542 g	0.2380 mg	10127890.8611	4.5621 µCi	1.0348 mg/kg	3.477
064F	Day 23	dose2	236.000 g	0.537 g	0.2358 mg	10033460.1336	4.5200 µCi	0.9992 mg/kg	0.084
064F	Day 24	dose2	242.000 g	0.556 g	0.2441 mg	10389496.8980	4.6800 µCi	1.0089 mg/kg	0.886
064F	Day 25	dose2	242.000 g	0.562 g	0.2468 mg	10501613.7711	4.7305 µCi	1.0198 mg/kg	1.975
064F	Day 26	dose2	235.000 g	0.543 g	0.2384 mg	10146577.0066	4.5705 µCi	1.0146 mg/kg	1.462
064F	Day 27	dose2	245.000 g	0.569 g	0.2499 mg	10632416.7896	4.7894 µCi	1.0198 mg/kg	1.981
064F	Day 28	dose2	248.000 g	0.579 g	0.2542 mg	10819278.2444	4.8735 µCi	1.0252 mg/kg	2.518

GROUP 6

**Dosing report
Group 6**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpnd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
041M	Day 1	DOSE1	207.000 g	0.492 g	0.2169 mg	9057660.7631	4.0800 µCi	1.0479 mg/kg	4.789
041M	Day 2	DOSE1	214.000 g	0.523 g	0.2306 mg	9628367.0308	4.3371 µCi	1.0775 mg/kg	7.748
041M	Day 3	DOSE1	218.000 g	0.492 g	0.2169 mg	9057660.7633	4.0800 µCi	0.9950 mg/kg	0.499
041M	Day 4	DOSE1	221.000 g	0.5100 g	0.2248 mg	9389038.5961	4.2293 µCi	1.0174 mg/kg	1.742
041M	Day 5	DOSE1	229.0000 g	0.5210 g	0.2297 mg	9591547.2716	4.3205 µCi	1.0031 mg/kg	0.305
041M	Day 6	DOSE1	239.0000 g	0.5540 g	0.2442 mg	10199073.2983	4.5942 µCi	1.0220 mg/kg	2.196
041M	Day 7	DOSE1	248.0000 g	0.5670 g	0.2500 mg	10438401.7331	4.7020 µCi	1.0080 mg/kg	0.798
041M	Day 8	DOSE1	255.0000 g	0.5770 g	0.2544 mg	10622500.5291	4.7849 µCi	0.9976 mg/kg	0.240
041M	Day 9	DOSE1	259.0000 g	0.5980 g	0.2636 mg	11009108.0008	4.9591 µCi	1.0219 mg/kg	2.188
041M	Day 10	DOSE2	264.0000 g	0.5880 g	0.2582 mg	10987453.5539	4.9493 µCi	0.9780 mg/kg	2.198
041M	Day 11	DOSE2	272.0000 g	0.6320 g	0.2775 mg	11898643.9561	5.3197 µCi	1.0203 mg/kg	2.029
041M	Day 12	DOSE2	281.0000 g	0.6500 g	0.2854 mg	12145994.5750	5.4712 µCi	1.0157 mg/kg	1.573
041M	Day 13	DOSE2	284.0000 g	0.6620 g	0.2907 mg	12370228.3210	5.5722 µCi	1.0236 mg/kg	2.356
041M	Day 14	DOSE2	286.0000 g	0.6690 g	0.2938 mg	12501031.3396	5.6311 µCi	1.0130 mg/kg	1.298
041M	Day 15	DOSE2	296.0000 g	0.6950 g	0.3052 mg	129968871.1224	5.8499 µCi	1.0310 mg/kg	3.102
041M	Day 16	DOSE2	300.0000 g	0.6990 g	0.3069 mg	13061615.7045	5.8836 µCi	1.0231 mg/kg	2.313
041M	Day 17	DOSE2	305.0000 g	0.7130 g	0.3131 mg	13323221.7415	6.0015 µCi	1.0265 mg/kg	2.651
041M	Day 18	DOSE2	308.0000 g	0.7100 g	0.3118 mg	1326163.3049	5.9762 µCi	1.0122 mg/kg	1.223
041M	Day 19	DOSE2	314.0000 g	0.7330 g	0.3219 mg	13696944.6514	6.1698 µCi	1.0251 mg/kg	2.506
041M	Day 20	DOSE2	318.0000 g	0.7390 g	0.3245 mg	13899061.5245	6.2203 µCi	1.0204 mg/kg	2.045
041M	Day 21	DOSE2	321.0000 g	0.7430 g	0.3263 mg	13893806.1064	6.2540 µCi	1.0164 mg/kg	1.638
041M	Day 22	DOSE2	329.0000 g	0.5570 g	0.2446 mg	10498183.0436	4.6884 µCi	1.0234 mg/kg	2.337
041M	Day 23	DOSE2	330.0000 g	0.7620 g	0.3346 mg	14238842.8710	6.4139 µCi	1.0139 mg/kg	1.394

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Group 6

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
041M	Day 24	DOSE2	335.0000 g	0.7720 g	0.3390 mg	14425704.3260	6.4981 µCi	1.0119 mg/kg	1.192
041M	Day 25	DOSE2	338.0000 g	0.7590 g	0.3333 mg	14182784.4345	6.3886 µCi	0.9960 mg/kg	1.395
041M	Day 26	DOSE2	341.0000 g	0.7890 g	0.3465 mg	14743368.7995	6.6412 µCi	1.0160 mg/kg	1.601
041M	Day 27	DOSE2	346.0000 g	0.8030 g	0.3526 mg	15004974.8366	6.7590 µCi	1.0191 mg/kg	1.909
041M	Day 28	DOSE2	323.0000 g	0.7450 g	0.3271 mg	13921178.3975	6.2708 µCi	1.0128 mg/kg	1.281
042M	Day 1	DOSE1	217.0000 g	0.508 g	0.2240 mg	9352218.8367	4.2127 µCi	1.0321 mg/kg	3.211
042M	Day 2	DOSE1	227.0000 g	0.561 g	0.2473 mg	10327942.4555	4.6522 µCi	1.0596 mg/kg	8.958
042M	Day 3	DOSE1	237.0000 g	0.525 g	0.2315 mg	9665186.7900	4.3537 µCi	0.9766 mg/kg	2.337
042M	Day 4	DOSE1	241.0000 g	0.5620 g	0.2478 mg	10346352.3353	4.6605 µCi	1.0281 mg/kg	2.811
042M	Day 5	DOSE1	257.0000 g	0.5900 g	0.2601 mg	10861828.9641	4.8927 µCi	1.0121 mg/kg	1.214
042M	Day 6	DOSE1	265.0000 g	0.5350 g	0.2623 mg	10953878.3620	4.9342 µCi	0.9899 mg/kg	1.010
042M	Day 7	DOSE1	275.0000 g	0.6280 g	0.2769 mg	11561404.3888	5.2078 µCi	1.0068 mg/kg	0.681
042M	Day 8	DOSE1	281.0000 g	0.6530 g	0.2879 mg	12021651.3789	5.4152 µCi	1.0245 mg/kg	2.454
042M	Day 9	DOSE1	293.0000 g	0.6710 g	0.2958 mg	12353029.2117	5.5644 µCi	1.0097 mg/kg	0.966
042M	Day 10	DOSE2	302.0000 g	0.6970 g	0.3061 mg	13024243.4134	5.8668 µCi	1.0134 mg/kg	1.344
042M	Day 11	DOSE2	312.0000 g	0.7100 g	0.3118 mg	13267163.3049	5.9762 µCi	0.9993 mg/kg	0.074
042M	Day 12	DOSE2	323.0000 g	0.7360 g	0.3232 mg	13753003.0880	6.1950 µCi	1.0006 mg/kg	0.057
042M	Day 13	DOSE2	332.0000 g	0.7550 g	0.3315 mg	14108039.8524	6.3550 µCi	0.9986 mg/kg	0.142
042M	Day 14	DOSE2	342.0000 g	0.7840 g	0.3443 mg	14649338.0719	6.5991 µCi	1.0066 mg/kg	0.661
042M	Day 15	DOSE2	345.0000 g	0.7980 g	0.3504 mg	14911544.1090	6.7169 µCi	1.0157 mg/kg	1.568
042M	Day 16	DOSE2	358.0000 g	0.8320 g	0.3653 mg	15546873.0559	7.0031 µCi	1.0205 mg/kg	2.050
042M	Day 17	DOSE2	364.0000 g	0.8450 g	0.3710 mg	15789792.9474	7.1125 µCi	1.0194 mg/kg	1.936
042M	Day 18	DOSE2	372.0000 g	0.8580 g	0.3768 mg	16032712.8390	7.2219 µCi	1.0128 mg/kg	1.279

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Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
042M	Day 19	DOSE2	381.0000 g	0.8790 g	0.3860 mg	16425121.8944	7.3987 µCi	1.0131 mg/kg	1.306
042M	Day 20	DOSE2	385.0000 g	0.8910 g	0.3912 mg	16649355.6406	7.4897 µCi	1.0162 mg/kg	1.623
042M	Day 21	DOSE2	392.0000 g	0.8840 g	0.3882 mg	16518552.6220	7.4408 µCi	0.9902 mg/kg	0.976
042M	Day 22	DOSE2	400.0000 g	0.9320 g	0.4093 mg	17415487.6061	7.8448 µCi	1.0231 mg/kg	2.313
042M	Day 23	DOSE2	403.0000 g	0.9280 g	0.4075 mg	17340743.0240	7.8111 µCi	1.0112 mg/kg	1.115
042M	Day 24	DOSE2	412.0000 g	0.9520 g	0.4180 mg	17789210.5159	8.0132 µCi	1.0146 mg/kg	1.464
042M	Day 25	DOSE2	419.0000 g	0.9410 g	0.4132 mg	17583662.9155	7.9206 µCi	0.9862 mg/kg	1.384
042M	Day 26	DOSE2	421.0000 g	0.9200 g	0.4040 mg	17191253.8600	7.7438 µCi	0.9596 mg/kg	4.042
042M	Day 27	DOSE2	427.0000 g	0.9920 g	0.4356 mg	16536656.3360	8.3498 µCi	1.0201 mg/kg	2.013
042M	Day 28	DOSE2	399.0000 g	0.9230 g	0.4053 mg	17247312.2965	7.7691 µCi	1.0158 mg/kg	1.579
043M	Day 1	DOSE1	205.0000 g	0.496 g	0.2187 mg	9131300.2816	4.1132 µCi	1.0667 mg/kg	6.671
043M	Day 2	DOSE1	212.0000 g	0.503 g	0.2218 mg	9260169.4387	4.1712 µCi	1.0461 mg/kg	4.605
043M	Day 3	DOSE1	217.0000 g	0.503 g	0.2218 mg	9260169.4389	4.1712 µCi	1.0219 mg/kg	2.195
043M	Day 4	DOSE1	219.0000 g	0.4780 g	0.2107 mg	879922.4487	3.9639 µCi	0.9623 mg/kg	3.771
043M	Day 5	DOSE1	231.0000 g	0.4840 g	0.2134 mg	8910381.7263	4.0137 µCi	0.9237 mg/kg	7.625
043M	Day 6	DOSE1	234.0000 g	0.5160 g	0.2275 mg	9499487.8735	4.2791 µCi	0.9722 mg/kg	2.780
043M	Day 7	DOSE1	251.0000 g	0.5830 g	0.2570 mg	10732959.8069	4.8347 µCi	1.0240 mg/kg	2.404
043M	Day 8	DOSE1	255.0000 g	0.5780 g	0.2548 mg	10640910.4089	4.7932 µCi	0.9993 mg/kg	0.067
043M	Day 9	DOSE1	257.0000 g	0.6000 g	0.2645 mg	11045927.7600	4.9756 µCi	1.0293 mg/kg	2.929
043M	Day 10	DOSE2	267.0000 g	0.6260 g	0.2749 mg	11697527.0830	5.2692 µCi	1.0295 mg/kg	2.952
043M	Day 11	DOSE2	272.0000 g	0.6270 g	0.2753 mg	11716213.2284	5.2776 µCi	1.0122 mg/kg	1.221
043M	Day 12	DOSE2	281.0000 g	0.6440 g	0.2828 mg	12033877.7021	5.4207 µCi	1.0064 mg/kg	0.636
043M	Day 13	DOSE2	289.0000 g	0.6690 g	0.2938 mg	12501031.3395	5.8311 µCi	1.0165 mg/kg	1.649

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Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpnd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
043M	Day 14	DOSE2	295.0000 g	0.6850 g	0.3000 mg	12800009.6674	5.7658 µCi	1.0196 mg/kg	1.963
043M	Day 15	DOSE2	301.0000 g	0.7050 g	0.3096 mg	13173732.5774	5.9341 µCi	1.0285 mg/kg	2.848
043M	Day 16	DOSE2	308.0000 g	0.7170 g	0.3148 mg	13397966.3236	6.0351 µCi	1.0222 mg/kg	2.221
043M	Day 17	DOSE2	310.0000 g	0.7320 g	0.3214 mg	13678258.5061	6.1614 µCi	1.0369 mg/kg	3.607
043M	Day 18	DOSE2	312.0000 g	0.7300 g	0.3206 mg	13640886.2149	6.1445 µCi	1.0274 mg/kg	2.740
043M	Day 19	DOSE2	321.0000 g	0.7530 g	0.3306 mg	14070567.5616	6.3381 µCi	1.0301 mg/kg	3.006
043M	Day 20	DOSE2	325.0000 g	0.7540 g	0.3311 mg	14089353.7070	6.3466 µCi	1.0187 mg/kg	1.874
043M	Day 21	DOSE2	329.0000 g	0.7600 g	0.3337 mg	14201470.5801	6.3971 µCi	1.0144 mg/kg	1.436
043M	Day 22	DOSE2	337.0 g	0.762 g	0.3346 mg	14238842.8709	6.4139 µCi	0.9929 mg/kg	0.712
043M	Day 23	DOSE2	338.0000 g	0.7850 g	0.3447 mg	14686624.2176	6.6075 µCi	1.0198 mg/kg	1.983
043M	Day 24	DOSE2	342.0000 g	0.7940 g	0.3487 mg	14836799.5270	6.6832 µCi	1.0195 mg/kg	1.945
043M	Day 25	DOSE2	349.0000 g	0.8080 g	0.3548 mg	15098405.5641	6.8011 µCi	1.0166 mg/kg	1.662
043M	Day 26	DOSE2	350.0000 g	0.8340 g	0.3682 mg	15584245.3471	7.0199 µCi	1.0463 mg/kg	4.634
043M	Day 27	DOSE2	358.0000 g	0.8210 g	0.3605 mg	15341325.4556	6.9105 µCi	1.0127 mg/kg	1.267
043M	Day 28	DOSE2	329.0000 g	0.7590 g	0.3333 mg	14182784.4346	6.3886 µCi	1.0130 mg/kg	1.302
044M	Day 1	DOSE1	209.00 g	0.494 g	0.2178 mg	9094480.5225	4.0966 µCi	1.0421 mg/kg	4.208
044M	Day 2	DOSE1	218.00 g	0.514 g	0.2266 mg	9462678.1144	4.2625 µCi	1.0395 mg/kg	3.951
044M	Day 3	DOSE1	228.00 g	0.504 g	0.2222 mg	9278579.3183	4.1795 µCi	0.9746 mg/kg	2.542
044M	Day 4	DOSE1	235.0000 g	0.5400 g	0.2381 mg	9841334.9841	4.4781 µCi	1.0131 mg/kg	1.309
044M	Day 5	DOSE1	245.0000 g	0.5520 g	0.2434 mg	10162253.5392	4.5776 µCi	0.9933 mg/kg	0.667
044M	Day 6	DOSE1	254.0000 g	0.5800 g	0.2557 mg	10677730.1681	4.8098 µCi	1.0067 mg/kg	0.673
044M	Day 7	DOSE1	262.0000 g	0.5860 g	0.2534 mg	1078189.4457	4.8595 µCi	0.9861 mg/kg	1.391
044M	Day 8	DOSE1	267.0000 g	0.6150 g	0.2711 mg	11322075.9539	5.1000 µCi	1.0155 mg/kg	1.551

**Dosing report
Group 6**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
044M	Day 9	DOSE1	274.0000 g	0.6080 g	0.2881 mg	11193206.7969	5.0420 µCi	0.9783 mg/kg	2.170
044M	Day 10	DOSE2	268.0000 g	0.6100 g	0.2679 mg	11398548.7550	5.1345 µCi	0.9995 mg/kg	0.053
044M	Day 11	DOSE2	280.0000 g	0.6510 g	0.2859 mg	12164880.7204	5.4796 µCi	1.0209 mg/kg	2.093
044M	Day 12	DOSE2	296.0000 g	0.6640 g	0.2916 mg	12407600.6120	5.5690 µCi	0.9850 mg/kg	1.497
044M	Day 13	DOSE2	302.0000 g	0.6970 g	0.3061 mg	13024243.4134	5.8668 µCi	1.0134 mg/kg	1.344
044M	Day 14	DOSE2	304.0000 g	0.6820 g	0.2895 mg	12743931.2311	5.7405 µCi	0.9851 mg/kg	1.489
044M	Day 15	DOSE2	306.0000 g	0.7160 g	0.3144 mg	13379280.1781	6.0267 µCi	1.0208 mg/kg	2.079
044M	Day 16	DOSE2	316.0000 g	0.7300 g	0.3206 mg	13640886.2149	6.1445 µCi	1.0144 mg/kg	1.440
044M	Day 17	DOSE2	325.0000 g	0.7480 g	0.3285 mg	13977236.8340	6.2861 µCi	1.0106 mg/kg	1.063
044M	Day 18	DOSE2	329.0000 g	0.7450 g	0.3271 mg	13921178.3974	6.2708 µCi	0.9943 mg/kg	0.566
044M	Day 19	DOSE2	333.0000 g	0.7560 g	0.3320 mg	14126725.9980	6.3634 µCi	0.9969 mg/kg	0.310
044M	Day 20	DOSE2	340.0000 g	0.7850 g	0.3447 mg	14668824.2174	6.8075 µCi	1.0138 mg/kg	1.383
044M	Day 21	DOSE2	340.0000 g	0.7850 g	0.3447 mg	14668824.2174	6.8075 µCi	1.0138 mg/kg	1.383
044M	Day 22	DOSE2	344.0000 g	0.804 g	0.3530 mg	15023660.9819	6.7674 µCi	1.0263 mg/kg	2.629
044M	Day 23	DOSE2	348.0000 g	0.8020 g	0.3522 mg	14986288.6909	6.7506 µCi	1.0120 mg/kg	1.197
044M	Day 24	DOSE2	358.0000 g	0.8280 g	0.3636 mg	15472128.4741	6.9694 µCi	1.0156 mg/kg	1.560
044M	Day 25	DOSE2	363.0000 g	0.8240 g	0.3618 mg	15397383.8920	6.9358 µCi	0.9968 mg/kg	0.323
044M	Day 26	DOSE2	367.0000 g	0.8360 g	0.3671 mg	15621617.6380	7.0368 µCi	1.0003 mg/kg	0.026
044M	Day 27	DOSE2	376.0000 g	0.8490 g	0.3728 mg	15864537.5296	7.1462 µCi	0.9915 mg/kg	0.850
044M	Day 28	DOSE2	344.0000 g	0.7950 g	0.3491 mg	14855485.8726	6.6917 µCi	1.0148 mg/kg	1.480
045F	Day 1	DOSE1	171.000 g	0.417 g	0.1838 mg	7675919.7931	3.4581 µCi	1.0751 mg/kg	7.513
045F	Day 2	DOSE1	173.000 g	0.415 g	0.1830 mg	7640100.0340	3.4415 µCi	1.0576 mg/kg	5.760
045F	Day 3	DOSE1	170.000 g	0.396 g	0.1746 mg	7290312.3215	3.2839 µCi	1.0210 mg/kg	2.699

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Group 6**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
045F	Day 4	DOSE1	176.00000 g	0.4130 g	0.1821 mg	7603280.2749	3.4249 µCi	1.0346 mg/kg	3.457
045F	Day 5	DOSE1	181.00000 g	0.4120 g	0.1816 mg	7584870.3951	3.4166 µCi	1.0036 mg/kg	0.355
045F	Day 6	DOSE1	185.00000 g	0.4080 g	0.1799 mg	7511230.8768	3.3834 µCi	0.9723 mg/kg	2.768
045F	Day 7	DOSE1	182.00000 g	0.4130 g	0.1821 mg	7603280.2748	3.4249 µCi	1.0005 mg/kg	0.046
045F	Day 8	DOSE1	186.00000 g	0.4440 g	0.1958 mg	8173986.5424	3.6820 µCi	1.0524 mg/kg	5.242
045F	Day 9	DOSE1	192.00000 g	0.4470 g	0.1971 mg	8229216.1812	3.7069 µCi	1.0264 mg/kg	2.642
045F	Day 10	DOSE2	200.00000 g	0.4120 g	0.1809 mg	7698691.9460	3.4679 µCi	0.9046 mg/kg	9.543
045F	Day 11	DOSE2	190.00000 g	0.4370 g	0.1919 mg	8165845.5834	3.6783 µCi	1.0100 mg/kg	0.995
045F	Day 12	DOSE2	199.00000 g	0.4580 g	0.2011 mg	8558254.6389	3.8551 µCi	1.0106 mg/kg	1.061
045F	Day 13	DOSE2	203.00000 g	0.4660 g	0.2046 mg	8707743.8029	3.9224 µCi	1.0080 mg/kg	0.801
045F	Day 14	DOSE2	204.00000 g	0.4700 g	0.2064 mg	8782488.3849	3.9561 µCi	1.0117 mg/kg	1.167
045F	Day 15	DOSE2	201.00000 g	0.4750 g	0.2086 mg	8875919.1124	3.9982 µCi	1.0377 mg/kg	3.770
045F	Day 16	DOSE2	205.00000 g	0.4760 g	0.2090 mg	8894605.2580	4.0066 µCi	1.0196 mg/kg	1.959
045F	Day 17	DOSE2	210.00000 g	0.4860 g	0.2134 mg	9081466.7131	4.0908 µCi	1.0162 mg/kg	1.623
045F	Day 18	DOSE2	209.00000 g	0.4750 g	0.2086 mg	8875919.1124	3.9982 µCi	0.9980 mg/kg	0.202
045F	Day 19	DOSE2	206.00000 g	0.4870 g	0.2138 mg	9100152.8586	4.0992 µCi	1.0381 mg/kg	3.809
045F	Day 20	DOSE2	211.00000 g	0.4910 g	0.2156 mg	9174897.4405	4.1328 µCi	1.0218 mg/kg	2.182
045F	Day 21	DOSE2	215.00000 g	0.5000 g	0.2196 mg	9343072.7501	4.2086 µCi	1.0212 mg/kg	2.119
045F	Day 22	DOSE2	214.00000 g	0.491 g	0.2156 mg	9174897.4404	4.1328 µCi	1.0075 mg/kg	0.749
045F	Day 23	DOSE2	213.00000 g	0.4890 g	0.2147 mg	9137525.1495	4.1160 µCi	1.0081 mg/kg	0.810
045F	Day 24	DOSE2	217.00000 g	0.5000 g	0.2196 mg	9343072.7500	4.2086 µCi	1.0118 mg/kg	1.177
045F	Day 25	DOSE2	220.00000 g	0.5050 g	0.2218 mg	9436503.4776	4.2507 µCi	1.0080 mg/kg	0.796
045F	Day 26	DOSE2	220.00000 g	0.5220 g	0.2292 mg	9754167.9510	4.3938 µCi	1.0419 mg/kg	4.189

**Dosing report
Group 6**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
045F	Day 27	DOSE2	218.0000 g	0.5010 g	0.2200 mg	9361758.8956	4.2170 μ Ci	1.0091 mg/kg	0.915
045F	Day 28	DOSE2	210.0000 g	0.5010 g	0.2200 mg	9361758.8955	4.2170 μ Ci	1.0476 mg/kg	4.759
046F	Day 1	DOSE1	183.0000 g	0.437 g	0.1927 mg	8045117.3853	3.6239 μ Ci	1.0528 mg/kg	5.281
046F	Day 2	DOSE1	183.0000 g	0.435 g	0.1918 mg	8008297.6280	3.6073 μ Ci	1.0480 mg/kg	4.799
046F	Day 3	DOSE1	192.0000 g	0.431 g	0.1900 mg	7934658.1075	3.5742 μ Ci	0.9897 mg/kg	1.032
046F	Day 4	DOSE1	197.0000 g	0.4620 g	0.2037 mg	8505364.3752	3.8312 μ Ci	1.0339 mg/kg	3.394
046F	Day 5	DOSE1	197.0000 g	0.4550 g	0.2006 mg	8376495.2180	3.7732 μ Ci	1.0183 mg/kg	1.828
046F	Day 6	DOSE1	194.0000 g	0.4430 g	0.1853 mg	815576.6628	3.6737 μ Ci	1.0068 mg/kg	0.675
046F	Day 7	DOSE1	205.0000 g	0.4720 g	0.2081 mg	8669463.1713	3.9142 μ Ci	1.0151 mg/kg	1.510
046F	Day 8	DOSE1	212.0000 g	0.4970 g	0.2191 mg	9149710.1611	4.1215 μ Ci	1.0336 mg/kg	3.357
046F	Day 9	DOSE1	213.0000 g	0.4950 g	0.2182 mg	9112890.4019	4.1049 μ Ci	1.0246 mg/kg	2.458
046F	Day 10	DOSE2	206.0000 g	0.4900 g	0.2152 mg	9156211.2949	4.1244 μ Ci	1.0445 mg/kg	4.448
046F	Day 11	DOSE2	220.0000 g	0.5160 g	0.2266 mg	9642051.0780	4.3433 μ Ci	1.0299 mg/kg	2.991
046F	Day 12	DOSE2	223.0000 g	0.5120 g	0.2248 mg	9567306.4959	4.3096 μ Ci	1.0082 mg/kg	0.818
046F	Day 13	DOSE2	223.0000 g	0.5170 g	0.2270 mg	9660737.2235	4.3517 μ Ci	1.0180 mg/kg	1.803
046F	Day 14	DOSE2	214.0000 g	0.5170 g	0.2270 mg	9660737.2235	4.3517 μ Ci	1.0608 mg/kg	6.084
046F	Day 15	DOSE2	230.0000 g	0.5510 g	0.2419 mg	10296066.1706	4.6379 μ Ci	1.0520 mg/kg	5.195
046F	Day 16	DOSE2	234.0000 g	0.5570 g	0.2446 mg	10408183.0434	4.6884 μ Ci	1.0452 mg/kg	4.523
046F	Day 17	DOSE2	230.0000 g	0.5570 g	0.2446 mg	10408183.0435	4.6884 μ Ci	1.0634 mg/kg	6.341
046F	Day 18	DOSE2	222.0000 g	0.5180 g	0.2275 mg	9679423.3690	4.3601 μ Ci	1.0246 mg/kg	2.459
046F	Day 19	DOSE2	238.0000 g	0.5710 g	0.2507 mg	10669789.0804	4.8062 μ Ci	1.0535 mg/kg	5.349
046F	Day 20	DOSE2	237.0000 g	0.5550 g	0.2437 mg	10370810.7526	4.6715 μ Ci	1.0283 mg/kg	2.830
046F	Day 21	DOSE2	236.0000 g	0.5550 g	0.2437 mg	10370810.7524	4.6715 μ Ci	1.0327 mg/kg	3.265

Dosing report
 Group 6

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
046F	Day 22	DOSE2	229.000 g	0.534 g	0.2345 mg	9978401.6970	4.4948 µCi	1.0240 mg/kg	2.395
046F	Day 23	DOSE2	245.000 g	0.5630 g	0.2472 mg	10520299.9165	4.7389 µCi	1.0091 mg/kg	0.906
046F	Day 24	DOSE2	247.000 g	0.5730 g	0.2516 mg	10707161.3716	4.8230 µCi	1.0187 mg/kg	1.886
046F	Day 25	DOSE2	246.000 g	0.5720 g	0.2512 mg	10688475.2260	4.8146 µCi	1.0210 mg/kg	2.102
046F	Day 26	DOSE2	232.000 g	0.5400 g	0.2371 mg	10090518.5701	4.5453 µCi	1.0221 mg/kg	2.207
046F	Day 27	DOSE2	249.000 g	0.5780 g	0.2538 mg	10800592.0889	4.8651 µCi	1.0193 mg/kg	1.930
046F	Day 28	DOSE2	233.000 g	0.5460 g	0.2398 mg	10202635.4429	4.5958 µCi	1.0290 mg/kg	2.899
047F	Day 1	DOSE1	187.000 g	0.451 g	0.1988 mg	8302855.6997	3.7400 µCi	1.0633 mg/kg	6.330
047F	Day 2	DOSE1	187.000 g	0.445 g	0.1962 mg	8192396.4221	3.6903 µCi	1.0492 mg/kg	4.915
047F	Day 3	DOSE1	179.000 g	0.421 g	0.1856 mg	7750559.3115	3.4912 µCi	1.0369 mg/kg	3.693
047F	Day 4	DOSE1	193.000 g	0.4550 g	0.2006 mg	8376495.2179	3.7732 µCi	1.0394 mg/kg	3.938
047F	Day 5	DOSE1	196.000 g	0.4570 g	0.2015 mg	8413314.9772	3.7898 µCi	1.0280 mg/kg	2.797
047F	Day 6	DOSE1	201.000 g	0.4580 g	0.2019 mg	8431724.8569	3.7981 µCi	1.0046 mg/kg	0.459
047F	Day 7	DOSE1	193.000 g	0.4470 g	0.1971 mg	8229216.1812	3.7069 µCi	1.0211 mg/kg	2.111
047F	Day 8	DOSE1	205.000 g	0.4840 g	0.2134 mg	8910381.7264	4.0137 µCi	1.0409 mg/kg	4.091
047F	Day 9	DOSE1	213.000 g	0.4930 g	0.2174 mg	9076076.6429	4.0983 µCi	1.0204 mg/kg	2.044
047F	Day 10	DOSE2	213.000 g	0.5030 g	0.2209 mg	939131.1865	4.2338 µCi	1.0370 mg/kg	3.696
047F	Day 11	DOSE2	209.000 g	0.4880 g	0.2143 mg	9118839.0041	4.1076 µCi	1.0253 mg/kg	2.529
047F	Day 12	DOSE2	219.000 g	0.5110 g	0.2244 mg	9548620.3506	4.3012 µCi	1.0246 mg/kg	2.459
047F	Day 13	DOSE2	226.000 g	0.5540 g	0.2345 mg	9978401.6970	4.4948 µCi	1.0375 mg/kg	3.754
047F	Day 14	DOSE2	229.000 g	0.5270 g	0.2314 mg	9887598.6785	4.4359 µCi	1.0105 mg/kg	1.053
047F	Day 15	DOSE2	220.000 g	0.5210 g	0.2288 mg	9753481.8054	4.3864 µCi	1.0399 mg/kg	3.989
047F	Day 16	DOSE2	237.000 g	0.5500 g	0.2415 mg	10277380.0249	4.6295 µCi	1.0190 mg/kg	1.903

Dosing report
 Group 6

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Acl dose rate	Dose error (%)
047F	Day 17	DOSE2	234.0000 g	0.5530 g	0.2428 mg	10333438.4614	4.6547 µCi	1.0377 mg/kg	3.773
047F	Day 18	DOSE2	235.0000 g	0.5440 g	0.2389 mg	10165263.1521	4.5789 µCi	1.0165 mg/kg	1.649
047F	Day 19	DOSE2	226.0000 g	0.5330 g	0.2340 mg	9959715.5515	4.4864 µCi	1.0356 mg/kg	3.560
047F	Day 20	DOSE2	238.0000 g	0.5610 g	0.2463 mg	10482927.6255	4.7220 µCi	1.0350 mg/kg	3.504
047F	Day 21	DOSE2	245.0000 g	0.5740 g	0.2520 mg	10725847.5169	4.8315 µCi	1.0288 mg/kg	2.877
047F	Day 22	DOSE2	244.0000 g	0.5566 g	0.2441 mg	10389496.8980	4.6800 µCi	1.0006 mg/kg	0.059
047F	Day 23	DOSE2	234.0000 g	0.5420 g	0.2380 mg	10127890.8610	4.5621 µCi	1.0171 mg/kg	1.708
047F	Day 24	DOSE2	248.0000 g	0.5530 g	0.2428 mg	10333438.4616	4.6547 µCi	0.9791 mg/kg	2.086
047F	Day 25	DOSE2	251.0000 g	0.5800 g	0.2547 mg	10837864.3901	4.8820 µCi	1.0147 mg/kg	1.468
047F	Day 26	DOSE2	251.0000 g	0.5950 g	0.2613 mg	11118256.5724	5.0082 µCi	1.0409 mg/kg	4.092
047F	Day 27	DOSE2	241.0000 g	0.5560 g	0.2441 mg	10389496.8981	4.6800 µCi	1.0131 mg/kg	1.305
047F	Day 28	DOSE2	234.0000 g	0.5480 g	0.2406 mg	10240007.7340	4.6126 µCi	1.0283 mg/kg	2.834
048F	Day 1	DOSE1	182.0000 g	0.4388 g	0.1931 mg	8063527.2649	3.6322 µCi	1.0610 mg/kg	6.102
048F	Day 2	DOSE1	182.0000 g	0.4411 g	0.1944 mg	8118756.9037	3.6571 µCi	1.0683 mg/kg	6.829
048F	Day 3	DOSE1	184.0000 g	0.420 g	0.1852 mg	7732149.4321	3.4830 µCi	1.0064 mg/kg	0.636
048F	Day 4	DOSE1	191.0000 g	0.4600 g	0.2028 mg	8468544.6159	3.8147 µCi	1.0618 mg/kg	6.181
048F	Day 5	DOSE1	196.0000 g	0.4580 g	0.2019 mg	8431724.8569	3.7981 µCi	1.0302 mg/kg	3.022
048F	Day 6	DOSE1	194.0000 g	0.4560 g	0.2010 mg	8394905.0977	3.7815 µCi	1.0363 mg/kg	3.630
048F	Day 7	DOSE1	191.0000 g	0.4510 g	0.1988 mg	8302855.6995	3.7400 µCi	1.0410 mg/kg	4.103
048F	Day 8	DOSE1	206.0000 g	0.4850 g	0.2138 mg	8928791.6060	4.0220 µCi	1.0380 mg/kg	3.799
048F	Day 9	DOSE1	208.0000 g	0.4860 g	0.2143 mg	8947201.4856	4.0303 µCi	1.0301 mg/kg	3.013
048F	Day 10	DOSE2	206.0000 g	0.4880 g	0.2143 mg	9118839.0041	4.1076 µCi	1.0402 mg/kg	4.022
048F	Day 11	DOSE2	214.0000 g	0.5040 g	0.2213 mg	9417817.3320	4.2423 µCi	1.0342 mg/kg	3.417

**Dosing report
Group 6**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
048F	Day 12	DOSE2	220.0000 g	0.5120 g	0.2248 mg	9567306.4960	4.3096 µCi	1.0219 mg/kg	2.193
048F	Day 13	DOSE2	219.0000 g	0.5120 g	0.2248 mg	9567306.4960	4.3096 µCi	1.0266 mg/kg	2.660
048F	Day 14	DOSE2	218.0000 g	0.5190 g	0.2279 mg	9698109.5146	4.3685 µCi	1.0454 mg/kg	4.540
048F	Day 15	DOSE2	226.0000 g	0.5340 g	0.2345 mg	9978401.6969	4.4948 µCi	1.0375 mg/kg	3.754
048F	Day 16	DOSE2	233.0000 g	0.5400 g	0.2371 mg	10090518.5699	4.5453 µCi	1.0177 mg/kg	1.768
048F	Day 17	DOSE2	231.0000 g	0.5470 g	0.2402 mg	10221321.5885	4.6042 µCi	1.0398 mg/kg	3.980
048F	Day 18	DOSE2	229.0000 g	0.5200 g	0.2283 mg	9716795.6599	4.3769 µCi	0.9911 mg/kg	0.289
048F	Day 19	DOSE2	240.0000 g	0.5540 g	0.2433 mg	10352124.6070	4.6631 µCi	1.0136 mg/kg	1.361
048F	Day 20	DOSE2	243.0000 g	0.5720 g	0.2512 mg	10688475.2261	4.8146 µCi	1.0336 mg/kg	3.363
048F	Day 21	DOSE2	241.0000 g	0.5660 g	0.2459 mg	10464241.4801	4.7136 µCi	1.0203 mg/kg	2.034
048F	Day 22	DOSE2	239.0000 g	0.537 9	0.2446 mg	10408183.0436	4.6884 µCi	1.0234 mg/kg	2.337
048F	Day 23	DOSE2	249.0000 g	0.5640 g	0.2477 mg	10538986.0621	4.7473 µCi	0.9946 mg/kg	0.539
048F	Day 24	DOSE2	251.0000 g	0.5870 g	0.2578 mg	10968767.4086	4.9409 µCi	1.0269 mg/kg	2.692
048F	Day 25	DOSE2	250.0000 g	0.5880 g	0.2582 mg	10987453.5541	4.9493 µCi	1.0328 mg/kg	3.279
048F	Day 26	DOSE2	246.0000 g	0.5810 g	0.2551 mg	10856650.5354	4.8904 µCi	1.0371 mg/kg	3.708
048F	Day 27	DOSE2	257.0000 g	0.5820 g	0.2556 mg	10875336.6811	4.8988 µCi	0.9944 mg/kg	0.560
048F	Day 28	DOSE2	238.0000 g	0.5730 g	0.2516 mg	10707161.3715	4.8230 µCi	1.0572 mg/kg	5.719

GROUP 7

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
049M	Day 1	dose1	213,000 g	0.512 g	0.2257 mg	9425858.3551	4.2459 µCi	1.0598 mg/kg	5.977
049M	Day 2	dose2	216,000 g	0.523 g	0.2297 mg	9772054.0966	4.4022 µCi	1.0632 mg/kg	6.322
049M	Day 3	dose1	223,000 g	0.504 g	0.2222 mg	9278579.3184	4.1795 µCi	0.9984 mg/kg	0.357
049M	Day 4	dose1	229,000 g	0.489 g	0.2200 mg	9186529.9203	4.1381 µCi	0.9607 mg/kg	3.931
049M	Day 5	dose1	240,000 g	0.546 g	0.2407 mg	10051794.2616	4.5278 µCi	1.0030 mg/kg	0.300
049M	Day 6	dose1	245,000 g	0.526 g	0.2319 mg	9683596.6697	4.3620 µCi	0.9465 mg/kg	5.346
049M	Day 7	dose1	257,000 g	0.576 g	0.2539 mg	10604090.6496	4.7766 µCi	0.9881 mg/kg	1.188
049M	Day 8	dose1	263,000 g	0.589 g	0.2420 mg	10107023.9004	4.5527 µCi	0.9203 mg/kg	7.968
049M	Day 9	dose1	271,000 g	0.628 g	0.2769 mg	11561404.3887	5.2078 µCi	1.0217 mg/kg	2.167
049M	Day 10	dose2	277,000 g	0.642 g	0.2819 mg	11996505.4111	5.4038 µCi	1.0177 mg/kg	1.772
049M	Day 11	dose2	288,000 g	0.671 g	0.2946 mg	12538403.6305	5.6479 µCi	1.0231 mg/kg	2.307
049M	Day 12	dose2	297,000 g	0.681 g	0.2890 mg	12725265.0855	5.7321 µCi	1.0068 mg/kg	0.685
049M	Day 13	dose2	301,000 g	0.673 g	0.2955 mg	12575775.9214	5.6648 µCi	0.9818 mg/kg	1.820
049M	Day 14	dose2	307,000 g	0.704 g	0.3091 mg	13155046.4320	5.9257 µCi	1.0069 mg/kg	0.695
049M	Day 15	dose2	314,000 g	0.729 g	0.3201 mg	13622200.0695	6.1361 µCi	1.0195 mg/kg	1.946
049M	Day 16	dose2	318,000 g	0.743 g	0.3263 mg	13883806.1065	6.2540 µCi	1.0260 mg/kg	2.597
049M	Day 17	dose2	315,000 g	0.730 g	0.3206 mg	13640886.2150	6.1445 µCi	1.0176 mg/kg	1.762
049M	Day 18	dose2	331,000 g	0.748 g	0.3285 mg	13977236.8340	6.2961 µCi	0.9923 mg/kg	0.769
049M	Day 19	dose2	336,000 g	0.774 g	0.3399 mg	14463076.6169	6.5149 µCi	1.0115 mg/kg	1.152
049M	Day 20	dose2	400,000 g	0.897 g	0.3939 mg	16761472.5135	7.5502 µCi	0.9847 mg/kg	1.530
049M	Day 21	dose2	345,000 g	0.886 g	0.3539 mg	15061033.2729	6.7842 µCi	1.0289 mg/kg	2.586
049M	Day 22	dose2	345,000 g	0.777 g	0.3412 mg	14519135.0536	6.5402 µCi	0.9890 mg/kg	1.105
049M	Day 23	dose2	350,000 g	0.812 g	0.3566 mg	15173150.1460	6.8348 µCi	1.0187 mg/kg	1.874

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
049M	Day 24	dose 2	351.000 g	0.805 g	0.3535 mg	15042347.1275	6.7758 µCi	1.0071 mg/kg	0.708
049M	Day 25	dose 2	357.000 g	0.829 g	0.3640 mg	15490814.6195	6.9778 µCi	1.0197 mg/kg	1.967
049M	Day 26	dose 2	363.000 g	0.841 g	0.3693 mg	15715048.3654	7.0789 µCi	1.0173 mg/kg	1.733
049M	Day 27	dose 2	370.000 g	0.864 g	0.3794 mg	16144829.7119	7.2724 µCi	1.0254 mg/kg	2.538
049M	Day 28	dose 2	372.000 g	0.863 g	0.3790 mg	16126143.5665	7.2640 µCi	1.0187 mg/kg	1.869
050M	Day 1	dose 1	216.000 g	0.517 g	0.2279 mg	9517907.7531	4.2873 µCi	1.0553 mg/kg	5.525
050M	Day 2	dose 1	223.000 g	0.515 g	0.2271 mg	9481087.9941	4.2708 µCi	1.0182 mg/kg	1.818
050M	Day 3	dose 1	232.000 g	0.507 g	0.2235 mg	9333808.9573	4.2044 µCi	0.9635 mg/kg	3.653
050M	Day 4	dose 1	241.000 g	0.527 g	0.2323 mg	9702006.5493	4.3703 µCi	0.9641 mg/kg	3.592
050M	Day 5	dose 1	257.000 g	0.570 g	0.2513 mg	10493631.3721	4.7269 µCi	0.9778 mg/kg	2.217
050M	Day 6	dose 1	262.000 g	0.596 g	0.2628 mg	10972288.2417	4.9425 µCi	1.0029 mg/kg	0.292
050M	Day 7	dose 1	273.000 g	0.595 g	0.2623 mg	10953878.3620	4.9342 µCi	0.9609 mg/kg	3.911
050M	Day 8	dose 1	285.000 g	0.651 g	0.2870 mg	11984831.6197	5.3986 µCi	1.0071 mg/kg	0.706
050M	Day 9	dose 1	290.000 g	0.680 g	0.2998 mg	12518718.1279	5.6391 µCi	1.0338 mg/kg	3.379
050M	Day 10	dose 2	298.000 g	0.691 g	0.3034 mg	12912126.5404	5.8163 µCi	1.0182 mg/kg	1.820
050M	Day 11	dose 2	307.000 g	0.720 g	0.3162 mg	13454024.7600	6.0604 µCi	1.0298 mg/kg	2.983
050M	Day 12	dose 2	318.000 g	0.708 g	0.3109 mg	13229791.0140	5.9594 µCi	0.9776 mg/kg	2.236
050M	Day 13	dose 2	326.000 g	0.753 g	0.3306 mg	14010667.5616	6.3381 µCi	1.0143 mg/kg	1.426
050M	Day 14	dose 2	335.000 g	0.772 g	0.3390 mg	14425704.3261	6.4981 µCi	1.0119 mg/kg	1.192
050M	Day 15	dose 2	342.000 g	0.790 g	0.3469 mg	14762054.9450	6.6496 µCi	1.0143 mg/kg	1.432
050M	Day 16	dose 2	351.000 g	0.796 g	0.3495 mg	14874171.8181	6.7001 µCi	0.9958 mg/kg	0.418
050M	Day 17	dose 2	351.000 g	0.791 g	0.3473 mg	14780741.0904	6.6580 µCi	0.9896 mg/kg	1.044
050M	Day 18	dose 2	355.000 g	0.798 g	0.3504 mg	14911544.1090	6.7169 µCi	0.9871 mg/kg	1.293

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
050M	Day 19	dose2	358.000 g	0.816 g	0.3583 mg	15247894.7281	6.8684 µCi	1.0009 mg/kg	0.088
050M	Day 20	dose2	369.000 g	0.844 g	0.3706 mg	15771106.8020	7.1041 µCi	1.0044 mg/kg	0.436
050M	Day 21	dose2	369.000 g	0.838 g	0.3680 mg	15658989.9289	7.0536 µCi	0.9972 mg/kg	0.278
050M	Day 22	dose2	374.000 g	0.866 g	0.3803 mg	16182022.0029	7.2893 µCi	1.0168 mg/kg	1.676
050M	Day 23	dose2	382.000 g	0.859 g	0.3772 mg	16051398.9846	7.2304 µCi	0.9874 mg/kg	1.258
050M	Day 24	dose2	382.000 g	0.885 g	0.3886 mg	16537238.7676	7.4492 µCi	1.0173 mg/kg	1.731
050M	Day 25	dose2	385.000 g	0.874 g	0.3838 mg	16331691.1670	7.3566 µCi	0.9968 mg/kg	0.316
050M	Day 26	dose2	387.000 g	0.883 g	0.3877 mg	16499886.4765	7.4324 µCi	1.0019 mg/kg	0.190
050M	Day 27	dose2	394.000 g	0.918 g	0.4031 mg	17153881.5690	7.7270 µCi	1.0231 mg/kg	2.310
050M	Day 28	dose2	400.000 g	0.923 g	0.4053 mg	17247312.2965	7.7691 µCi	1.0132 mg/kg	1.325
051M	Day 1	dose1	220.000 g	0.539 g	0.2376 mg	9922925.1044	4.4698 µCi	1.0802 mg/kg	8.016
051M	Day 2	dose1	231.000 g	0.549 g	0.2420 mg	10107023.9005	4.5527 µCi	1.0478 mg/kg	4.781
051M	Day 3	dose1	239.000 g	0.523 g	0.2306 mg	9628367.0309	4.3371 µCi	0.9648 mg/kg	3.523
051M	Day 4	dose1	252.000 g	0.574 g	0.2531 mg	10567270.8903	4.7600 µCi	1.0042 mg/kg	0.423
051M	Day 5	dose1	260.000 g	0.565 g	0.2491 mg	10401581.9739	4.6854 µCi	0.9581 mg/kg	4.193
051M	Day 6	dose1	270.000 g	0.625 g	0.2755 mg	11506114.7499	5.1830 µCi	1.0206 mg/kg	2.056
051M	Day 7	dose1	285.000 g	0.651 g	0.2870 mg	11984831.6196	5.3986 µCi	1.0071 mg/kg	0.706
051M	Day 8	dose1	292.000 g	0.676 g	0.2989 mg	12481898.3687	5.6225 µCi	1.0237 mg/kg	2.369
051M	Day 9	dose1	306.000 g	0.683 g	0.3011 mg	12573947.7667	5.6639 µCi	0.9841 mg/kg	1.594
051M	Day 10	dose2	317.000 g	0.710 g	0.3118 mg	13267163.3050	5.9762 µCi	0.9835 mg/kg	1.650
051M	Day 11	dose2	323.000 g	0.743 g	0.3263 mg	13883806.1065	6.2540 µCi	1.0101 mg/kg	1.009
051M	Day 12	dose2	338.000 g	0.766 g	0.3364 mg	14313587.4529	6.4476 µCi	0.9951 mg/kg	0.486
051M	Day 13	dose2	344.000 g	0.783 g	0.3438 mg	14631251.9268	6.5907 µCi	0.9995 mg/kg	0.051

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
051M	Day 14	dose2	354.000 g	0.820 g	0.3601 mg	15322639.3100	6.3021 µCi	1.0171 mg/kg	1.715
051M	Day 15	dose2	362.000 g	0.836 g	0.3671 mg	15621617.6381	7.0368 µCi	1.0141 mg/kg	1.408
051M	Day 16	dose2	369.000 g	0.833 g	0.3658 mg	1556559.2015	7.0115 µCi	0.9913 mg/kg	0.873
051M	Day 17	dose2	375.000 g	0.865 g	0.3798 mg	16163515.8575	7.2809 µCi	1.0129 mg/kg	1.288
051M	Day 18	dose2	384.000 g	0.884 g	0.3882 mg	16518552.6219	7.4408 µCi	1.0109 mg/kg	1.087
051M	Day 19	dose2	390.000 g	0.905 g	0.3974 mg	16910961.6776	7.6176 µCi	1.0190 mg/kg	1.896
051M	Day 20	dose2	400.000 g	0.926 g	0.4066 mg	17303370.7330	7.7943 µCi	1.0165 mg/kg	1.654
051M	Day 21	dose2	402.000 g	0.930 g	0.4084 mg	17378115.3149	7.8280 µCi	1.0159 mg/kg	1.585
051M	Day 22	dose2	404.000 g	0.929 g	0.4079 mg	17359429.1695	7.8196 µCi	1.0097 mg/kg	0.974
051M	Day 23	dose2	409.000 g	0.936 g	0.4110 mg	17490232.1880	7.8785 µCi	1.0049 mg/kg	0.491
051M	Day 24	dose2	416.000 g	0.945 g	0.4150 mg	17658407.4975	7.9542 µCi	0.9975 mg/kg	0.250
051M	Day 25	dose2	418.000 g	0.928 g	0.4075 mg	17340443.0240	7.8111 µCi	0.9749 mg/kg	2.513
051M	Day 26	dose2	430.000 g	0.999 g	0.4387 mg	18667459.3545	8.4088 µCi	1.0202 mg/kg	2.016
051M	Day 27	dose2	431.000 g	0.998 g	0.4382 mg	1864873.2091	8.4003 µCi	1.0168 mg/kg	1.678
051M	Day 28	dose2	438.000 g	1.014 g	0.4453 mg	18947751.5371	8.5350 µCi	1.0166 mg/kg	1.657
052M	Day 1	dose1	219.000 g	0.529 g	0.2332 mg	9738826.3085	4.3869 µCi	1.0650 mg/kg	6.496
052M	Day 2	dose1	227.000 g	0.555 g	0.2447 mg	10217483.1779	4.6025 µCi	1.0779 mg/kg	7.792
052M	Day 3	dose1	233.000 g	0.543 g	0.2394 mg	9996564.6228	4.5030 µCi	1.0275 mg/kg	2.746
052M	Day 4	dose1	248.000 g	0.583 g	0.2570 mg	10732959.8068	4.8347 µCi	1.0364 mg/kg	3.642
052M	Day 5	dose1	254.000 g	0.587 g	0.2588 mg	10806599.3252	4.8678 µCi	1.0189 mg/kg	1.888
052M	Day 6	dose1	263.000 g	0.606 g	0.2672 mg	11156387.0376	5.0254 µCi	1.0159 mg/kg	1.587
052M	Day 7	dose1	270.000 g	0.613 g	0.2703 mg	11285256.1949	5.0834 µCi	1.0010 mg/kg	0.096
052M	Day 8	dose1	275.000 g	0.649 g	0.2861 mg	11948011.8603	5.3820 µCi	1.0405 mg/kg	4.048

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
052M	Day 9	dose 1	291.000 g	0.681 g	0.3002 mg	12537128.0075	5.6474 µCi	1.0318 mg/kg	3.175
052M	Day 10	dose2	299.000 g	0.688 g	0.3021 mg	12856068.1039	5.7910 µCi	1.0104 mg/kg	1.039
052M	Day 11	dose2	308.000 g	0.711 g	0.3122 mg	13285849.4504	5.9846 µCi	1.0137 mg/kg	1.366
052M	Day 12	dose2	303.000 g	0.711 g	0.3122 mg	13285849.4505	5.9846 µCi	1.0304 mg/kg	3.039
052M	Day 13	dose2	327.000 g	0.755 g	0.3315 mg	14108039.8525	6.3550 µCi	1.0138 mg/kg	1.385
052M	Day 14	dose2	333.000 g	0.774 g	0.3399 mg	14463076.6171	6.5149 µCi	1.0206 mg/kg	2.063
052M	Day 15	dose2	338.000 g	0.797 g	0.3500 mg	14892857.9636	6.7085 µCi	1.0354 mg/kg	3.542
052M	Day 16	dose2	350.000 g	0.808 g	0.3548 mg	15098405.5641	6.8011 µCi	1.0137 mg/kg	1.372
052M	Day 17	dose2	358.000 g	0.835 g	0.3684 mg	15677376.0744	7.0620 µCi	1.0291 mg/kg	2.909
052M	Day 18	dose2	365.000 g	0.825 g	0.3640 mg	15490814.6195	6.9778 µCi	0.9973 mg/kg	0.268
052M	Day 19	dose2	367.000 g	0.838 g	0.3680 mg	15658369.9290	7.0536 µCi	1.0027 mg/kg	0.265
052M	Day 20	dose2	378.000 g	0.880 g	0.3864 mg	16443808.0401	7.4071 µCi	1.0223 mg/kg	2.227
052M	Day 21	dose2	379.000 g	0.888 g	0.3899 mg	16593297.2039	7.4745 µCi	1.0288 mg/kg	2.884
052M	Day 22	dose2	389.000 g	0.904 g	0.3970 mg	16892275.5321	7.6091 µCi	1.0205 mg/kg	2.045
052M	Day 23	dose2	391.000 g	0.910 g	0.3996 mg	17004392.4049	7.6596 µCi	1.0220 mg/kg	2.197
052M	Day 24	dose2	399.000 g	0.928 g	0.4075 mg	17340743.0239	7.8111 µCi	1.0213 mg/kg	2.129
052M	Day 25	dose2	405.000 g	0.935 g	0.4106 mg	17471546.0425	7.8701 µCi	1.0137 mg/kg	1.375
052M	Day 26	dose2	412.000 g	0.939 g	0.4123 mg	17546290.6246	7.9037 µCi	1.0008 mg/kg	0.079
052M	Day 27	dose2	414.000 g	0.916 g	0.4022 mg	17116509.2779	7.7101 µCi	0.9716 mg/kg	2.844
052M	Day 28	dose2	421.000 g	0.972 g	0.4268 mg	18162933.4260	8.1815 µCi	1.0138 mg/kg	1.381
053F	Day 1	dose1	172.000 g	0.426 g	0.1878 mg	7842608.7097	3.5327 µCi	1.0919 mg/kg	9.195
053F	Day 2	dose1	166.000 g	0.414 g	0.1825 mg	7621890.1545	3.4332 µCi	1.0895 mg/kg	9.954
053F	Day 3	dose1	176.000 g	0.409 g	0.1803 mg	7529640.7563	3.3917 µCi	1.0245 mg/kg	2.454

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
053F	Day 4	dose 1	179.000 g	0.432 g	0.1905 mg	7953057.9873	3.5825 µCi	1.0640 mg/kg	6.402
053F	Day 5	dose 1	182.000 g	0.417 g	0.1838 mg	7676919.7933	3.4581 µCi	1.0101 mg/kg	1.015
053F	Day 6	dose 1	178.000 g	0.430 g	0.1896 mg	7916248.2280	3.5659 µCi	1.0650 mg/kg	6.505
053F	Day 7	dose 1	191.000 g	0.442 g	0.1949 mg	8137166.7831	3.6654 µCi	1.0203 mg/kg	2.026
053F	Day 8	dose 1	193.000 g	0.459 g	0.2024 mg	8450134.7364	3.8084 µCi	1.0485 mg/kg	4.852
053F	Day 9	dose 1	199.000 g	0.467 g	0.2059 mg	8597413.7732	3.8727 µCi	1.0346 mg/kg	3.463
053F	Day 10	dose 2	196.000 g	0.460 g	0.2020 mg	8595626.9300	3.8719 µCi	1.0306 mg/kg	3.056
053F	Day 11	dose 2	202.000 g	0.476 g	0.2090 mg	8894605.2580	4.0086 µCi	1.0347 mg/kg	3.473
053F	Day 12	dose 2	207.000 g	0.478 g	0.2099 mg	8931977.5491	4.0234 µCi	1.0140 mg/kg	1.398
053F	Day 13	dose 2	211.000 g	0.499 g	0.2191 mg	9324386.6044	4.2002 µCi	1.0385 mg/kg	3.846
053F	Day 14	dose 2	200.000 g	0.466 g	0.2046 mg	8707743.8029	3.9224 µCi	1.0231 mg/kg	2.313
053F	Day 15	dose 2	214.000 g	0.497 g	0.2182 mg	9287014.3135	4.1833 µCi	1.0198 mg/kg	1.980
053F	Day 16	dose 2	199.000 g	0.470 g	0.2064 mg	8782488.3850	3.9561 µCi	1.0371 mg/kg	3.709
053F	Day 17	dose 2	221.000 g	0.511 g	0.2244 mg	9548620.3505	4.3012 µCi	1.0153 mg/kg	1.532
053F	Day 18	dose 2	209.000 g	0.486 g	0.2134 mg	9081466.7130	4.0908 µCi	1.0211 mg/kg	2.109
053F	Day 19	dose 2	222.000 g	0.513 g	0.2253 mg	9585992.6414	4.3180 µCi	1.0147 mg/kg	1.470
053F	Day 20	dose 2	223.000 g	0.515 g	0.2261 mg	9623364.9325	4.3348 µCi	1.0141 mg/kg	1.409
053F	Day 21	dose 2	226.000 g	0.531 g	0.2332 mg	9922343.2606	4.4695 µCi	1.0317 mg/kg	3.171
053F	Day 22	dose 2	215.000 g	0.491 g	0.2156 mg	9174887.4404	4.1328 µCi	1.0028 mg/kg	0.280
053F	Day 23	dose 2	231.000 g	0.549 g	0.2411 mg	1025863.8794	4.6210 µCi	1.0436 mg/kg	4.360
053F	Day 24	dose 2	228.000 g	0.541 g	0.2376 mg	1010924.7155	4.5537 µCi	1.0419 mg/kg	4.192
053F	Day 25	dose 2	229.000 g	0.530 g	0.2327 mg	9903657.1149	4.4611 µCi	1.0163 mg/kg	1.628
053F	Day 26	dose 2	222.000 g	0.513 g	0.2253 mg	9585992.6416	4.3180 µCi	1.0147 mg/kg	1.470

Dosing report
Group 7

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
053F	Day 27	dose2	232.000 g	0.550 g	0.2415 mg	10277380.0250	4.6295 µCi	1.0410 mg/kg	4.098
053F	Day 28	dose2	236.000 g	0.546 g	0.2398 mg	10202635.4430	4.5958 µCi	1.0159 mg/kg	1.591
054F	Day 1	dose1	173.000 g	0.449 g	0.1980 mg	8266035.9404	3.7234 µCi	1.1442 mg/kg	14.425
054F	Day 2	dose1	173.000 g	0.420 g	0.1852 mg	7732149.4319	3.4830 µCi	1.0703 mg/kg	7.034
054F	Day 3	dose1	177.000 g	0.411 g	0.1812 mg	7566460.5155	3.4083 µCi	1.0237 mg/kg	2.374
054F	Day 4	dose1	177.000 g	0.414 g	0.1825 mg	7621690.1544	3.4332 µCi	1.0312 mg/kg	3.121
054F	Day 5	dose1	184.000 g	0.416 g	0.1834 mg	7658509.9135	3.4498 µCi	0.9968 mg/kg	0.323
054F	Day 6	dose1	184.000 g	0.437 g	0.1927 mg	8045117.3851	3.6239 µCi	1.0471 mg/kg	4.709
054F	Day 7	dose1	189.000 g	0.444 g	0.1958 mg	8173986.5425	3.6820 µCi	1.0357 mg/kg	3.572
054F	Day 8	dose1	187.000 g	0.445 g	0.1962 mg	8192396.4219	3.6903 µCi	1.0492 mg/kg	4.915
054F	Day 9	dose1	192.000 g	0.447 g	0.1971 mg	8229216.1811	3.7069 µCi	1.0264 mg/kg	2.642
054F	Day 10	dose2	194.000 g	0.459 g	0.2016 mg	8576940.7845	3.8635 µCi	1.0389 mg/kg	3.893
054F	Day 11	dose2	197.000 g	0.463 g	0.2033 mg	86511685.3665	3.8972 µCi	1.0320 mg/kg	3.202
054F	Day 12	dose2	199.000 g	0.465 g	0.2042 mg	8689057.6575	3.9140 µCi	1.0261 mg/kg	2.606
054F	Day 13	dose2	204.000 g	0.479 g	0.2103 mg	8950663.6944	4.0318 µCi	1.0310 mg/kg	3.105
054F	Day 14	dose2	212.000 g	0.493 g	0.2165 mg	921269.7315	4.1497 µCi	1.0211 mg/kg	2.114
054F	Day 15	dose2	210.000 g	0.512 g	0.2248 mg	9567306.4960	4.3096 µCi	1.0706 mg/kg	7.059
054F	Day 16	dose2	207.000 g	0.480 g	0.2108 mg	8969349.8399	4.0402 µCi	1.0182 mg/kg	1.823
054F	Day 17	dose2	214.000 g	0.504 g	0.2213 mg	9417817.3320	4.2423 µCi	1.0342 mg/kg	3.417
054F	Day 18	dose2	215.000 g	0.507 g	0.2226 mg	9473875.7686	4.2675 µCi	1.0355 mg/kg	3.548
054F	Day 19	dose2	218.000 g	0.513 g	0.2253 mg	9585992.6415	4.3180 µCi	1.0333 mg/kg	3.332
054F	Day 20	dose2	218.000 g	0.519 g	0.2279 mg	9698108.5146	4.3685 µCi	1.0454 mg/kg	4.540
054F	Day 21	dose2	225.000 g	0.514 g	0.2257 mg	9604678.7870	4.3264 µCi	1.0031 mg/kg	0.312

Dosing report
 Group 7

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
054F	Day 22	dose2	225.000 g	0.527 g	0.2314 mg	9847598.6784	4.4359 µCi	1.0285 mg/kg	2.849
054F	Day 23	dose2	228.000 g	0.528 g	0.2319 mg	9866284.8240	4.4443 µCi	1.0169 mg/kg	1.689
054F	Day 24	dose2	227.000 g	0.531 g	0.2332 mg	9922343.2604	4.4695 µCi	1.0272 mg/kg	2.717
054F	Day 25	dose2	233.000 g	0.555 g	0.2437 mg	10370810.7525	4.6715 µCi	1.0459 mg/kg	4.595
054F	Day 26	dose2	236.000 g	0.545 g	0.2393 mg	10183949.2975	4.5874 µCi	1.0140 mg/kg	1.405
054F	Day 27	dose2	233.000 g	0.555 g	0.2437 mg	10370810.7524	4.6715 µCi	1.0459 mg/kg	4.595
054F	Day 28	dose2	230.000 g	0.542 g	0.2380 mg	10127890.8609	4.5621 µCi	1.0348 mg/kg	3.477
055F	Day 1	dose1	173.000 g	0.429 g	0.1891 mg	7897838.3484	3.5576 µCi	1.0933 mg/kg	9.328
055F	Day 2	dose1	170.000 g	0.428 g	0.1887 mg	7879428.4688	3.5493 µCi	1.1100 mg/kg	10.998
055F	Day 3	dose1	179.000 g	0.407 g	0.1794 mg	7492820.9972	3.3751 µCi	1.0024 mg/kg	0.245
055F	Day 4	dose1	182.000 g	0.423 g	0.1865 mg	778379.0709	3.5078 µCi	1.0247 mg/kg	2.468
055F	Day 5	dose1	185.000 g	0.433 g	0.1909 mg	7971477.8669	3.5908 µCi	1.0319 mg/kg	3.190
055F	Day 6	dose1	187.000 g	0.427 g	0.1883 mg	7861018.5891	3.5410 µCi	1.0067 mg/kg	0.672
055F	Day 7	dose1	194.000 g	0.445 g	0.1962 mg	8192396.4221	3.6903 µCi	1.0113 mg/kg	1.130
055F	Day 8	dose1	193.000 g	0.448 g	0.1975 mg	8247626.0608	3.7151 µCi	1.0234 mg/kg	2.339
055F	Day 9	dose1	198.000 g	0.467 g	0.2059 mg	8597413.7733	3.8727 µCi	1.0399 mg/kg	3.985
055F	Day 10	dose2	192.000 g	0.452 g	0.1985 mg	8446137.7660	3.8046 µCi	1.0337 mg/kg	3.374
055F	Day 11	dose2	205.000 g	0.484 g	0.2125 mg	9044094.4220	4.0739 µCi	1.0367 mg/kg	3.673
055F	Day 12	dose2	208.000 g	0.485 g	0.2130 mg	9062780.5676	4.0823 µCi	1.0239 mg/kg	2.389
055F	Day 13	dose2	210.000 g	0.492 g	0.2160 mg	919383.5859	4.1413 µCi	1.0288 mg/kg	2.877
055F	Day 14	dose2	211.000 g	0.501 g	0.2200 mg	9361758.8956	4.2170 µCi	1.0426 mg/kg	4.263
055F	Day 15	dose2	218.000 g	0.519 g	0.2279 mg	9698109.5145	4.3685 µCi	1.0454 mg/kg	4.540
055F	Day 16	dose2	201.000 g	0.466 g	0.2046 mg	8707743.8030	3.9224 µCi	1.0180 mg/kg	1.804

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose adm	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
055F	Day 17	dose2	221.000 g	0.507 g	0.2226 mg	9473875.7684	4.2675 µCi	1.0074 mg/kg	0.737
055F	Day 18	dose2	216.000 g	0.508 g	0.2231 mg	5492561.9140	4.2759 µCi	1.0327 mg/kg	3.272
055F	Day 19	dose2	222.000 g	0.520 g	0.2283 mg	9716795.6600	4.3769 µCi	1.0285 mg/kg	2.855
055F	Day 20	dose2	225.000 g	0.521 g	0.2288 mg	9735481.8056	4.3854 µCi	1.0168 mg/kg	1.678
055F	Day 21	dose2	226.000 g	0.532 g	0.2336 mg	9941029.4059	4.4779 µCi	1.0337 mg/kg	3.366
055F	Day 22	dose2	223.000 g	0.536 g	0.2354 mg	10015773.9881	4.5116 µCi	1.0554 mg/kg	5.544
055F	Day 23	dose2	229.000 g	0.536 g	0.2354 mg	10015773.9881	4.5116 µCi	1.0278 mg/kg	2.779
055F	Day 24	dose2	233.000 g	0.551 g	0.2419 mg	10296066.1704	4.6379 µCi	1.0384 mg/kg	3.841
055F	Day 25	dose2	232.000 g	0.551 g	0.2419 mg	10296066.1706	4.6379 µCi	1.0429 mg/kg	4.289
055F	Day 26	dose2	229.000 g	0.546 g	0.2398 mg	10202635.4429	4.5958 µCi	1.0470 mg/kg	4.696
055F	Day 27	dose2	237.000 g	0.554 g	0.2433 mg	10352124.8071	4.6631 µCi	1.0264 mg/kg	2.644
055F	Day 28	dose2	235.000 g	0.550 g	0.2415 mg	10277380.0250	4.6295 µCi	1.0277 mg/kg	2.770
056F	Day 1	dose1	175.000 g	0.427 g	0.1883 mg	7861018.5891	3.5410 µCi	1.0757 mg/kg	7.575
056F	Day 2	dose1	177.000 g	0.431 g	0.1927 mg	8045117.3852	3.6239 µCi	1.0885 mg/kg	8.850
056F	Day 3	dose1	183.000 g	0.419 g	0.1847 mg	7713739.5523	3.4747 µCi	1.0094 mg/kg	0.945
056F	Day 4	dose1	179.000 g	0.419 g	0.1847 mg	7713739.5523	3.4747 µCi	1.0320 mg/kg	3.200
056F	Day 5	dose1	185.000 g	0.427 g	0.1883 mg	7861018.5893	3.5410 µCi	1.0176 mg/kg	1.760
056F	Day 6	dose1	190.000 g	0.436 g	0.1922 mg	8026707.5057	3.6156 µCi	1.0117 mg/kg	1.170
056F	Day 7	dose1	190.000 g	0.448 g	0.1975 mg	8247626.0807	3.7151 µCi	1.0395 mg/kg	3.955
056F	Day 8	dose1	190.000 g	0.444 g	0.1958 mg	8173986.5423	3.6820 µCi	1.0303 mg/kg	3.027
056F	Day 9	dose1	196.000 g	0.464 g	0.2046 mg	8542184.1344	3.8478 µCi	1.0437 mg/kg	4.312
056F	Day 10	dose2	200.000 g	0.464 g	0.2037 mg	8670371.5120	3.9056 µCi	1.0187 mg/kg	1.874
056F	Day 11	dose2	198.000 g	0.465 g	0.2042 mg	8589057.6574	3.9140 µCi	1.0312 mg/kg	3.124

**Dosing report
Group 7**

Subject	Timepoint	Treatment	Subj Wt	Dose admn	Cmpd rec	DPM rec	Act rec	Act dose rate	Dose error (%)
056F	Day 12	dose2	202.000 g	0.460 g	0.2020 mg	8595626.9299	3.8719 µCi	1.0000 mg/kg	0.005
056F	Day 13	dose2	211.000 g	0.496 g	0.2178 mg	9268328.1680	4.1749 µCi	1.0322 mg/kg	3.222
056F	Day 14	dose2	207.000 g	0.490 g	0.2152 mg	9156211.2950	4.1244 µCi	1.0394 mg/kg	3.944
056F	Day 15	dose2	210.000 g	0.509 g	0.2235 mg	9511248.0596	4.2843 µCi	1.0643 mg/kg	6.432
056F	Day 16	dose2	192.000 g	0.450 g	0.1976 mg	8408765.4749	3.7877 µCi	1.0292 mg/kg	2.916
056F	Day 17	dose2	215.000 g	0.503 g	0.2209 mg	9399131.1866	4.2338 µCi	1.0273 mg/kg	2.731
056F	Day 18	dose2	220.000 g	0.507 g	0.2226 mg	9473875.7684	4.2675 µCi	1.0119 mg/kg	1.195
056F	Day 19	dose2	220.000 g	0.513 g	0.2253 mg	9585992.6416	4.3180 µCi	1.0239 mg/kg	2.392
056F	Day 20	dose2	217.000 g	0.496 g	0.2178 mg	9268328.1681	4.1749 µCi	1.0037 mg/kg	0.368
056F	Day 21	dose2	226.000 g	0.537 g	0.2358 mg	10034460.1335	4.5200 µCi	1.0434 mg/kg	4.337
056F	Day 22	dose2	217.000 g	0.496 g	0.2178 mg	9268328.1679	4.1749 µCi	1.0037 mg/kg	0.368
056F	Day 23	dose2	228.000 g	0.537 g	0.2358 mg	10034460.1335	4.5200 µCi	1.0342 mg/kg	3.422
056F	Day 24	dose2	222.000 g	0.531 g	0.2332 mg	9922343.2604	4.4695 µCi	1.0503 mg/kg	5.030
056F	Day 25	dose2	232.000 g	0.546 g	0.2398 mg	10202635.4430	4.5958 µCi	1.0334 mg/kg	3.342
056F	Day 26	dose2	237.000 g	0.560 g	0.2459 mg	10464241.4800	4.7136 µCi	1.0376 mg/kg	3.756
056F	Day 27	dose2	236.000 g	0.549 g	0.2411 mg	10258693.8796	4.6210 µCi	1.0215 mg/kg	2.149
056F	Day 28	dose2	232.000 g	0.531 g	0.2332 mg	9922343.2605	4.4695 µCi	1.0050 mg/kg	0.503

APPENDIX 4**TISSUE WEIGHTS PER UNIT BODYWEIGHT.**

The following values were used to determine the total weight of tissues that were examined as samples:-

Muscle	45.5% of bodyweight*
Bone	5.46% of bodyweight*
Fat	7.1% of bodyweight*
Skin	18.0% of bodyweight*
Plasma	4% of bodyweight [†]
Whole blood	7% of bodyweight [†]

* Caister, W.O. et al, (1956) Proc. Soc. Exptl. Med., **91**, 122

[†] International Commission of radiological protection, Report of Committee 2 (1959)