**Contract 77329 – Table 1: Quantitative assessment of biomaterial from rats of both genders to study 239Pu dynamics (D) and late effects (LE) at different delivery routes and minimization of damage**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Group | Different exposure factors | | | | | | | Number of rats, ♂ | | | cells of biomaterial storage |
| Ionizing radiation (IR) | | | | | | Other factors | Used in test,  Lp | Transferred from L-0 to  L-2 | Samples  (paraffin) |  |
| type | source | Delivery route | Dose approach | Administered amount | dose1,  Gy | Characteristics |
| 1 LE  test (4)\*, ♂ | α | 239Pu, IV, nitrate, рН 1  CMD-1 μm | inhalation | single | 2.2-3.0 kBq | 3.4÷9.1 | СаDTPA  ZnDTPA (2)  treatment | 365 (4) | 338 | 6464 | 46-52 |
| 2 LE  test (12)  control (4)  ♂,♀ | α | 239Pu, IV, нитрат, рН 1  нитрат-полимер, рН 6;  tributyl phosphate in hexachlorobutadiene | puncture  (muscle) | single | 92.5 kBq/kg | 68÷280 | none | 268 (6) | 265 | 5845 | 1-30 |
| 75÷273 | СаDTPA  treatment | 263 (6) | 262 | 5894 |
| none | none | none | none | none | none | solution HNO3  рН 1; hexachlorobutadiene single, intramuscular | 133 (4) | 132 | 3214 |
| 3 LE  test (4)  ♂ | α | 239Pu, IV, nitrate, рН 1 | scratch  (2 - 1 сm2) | single | 40 and 164  kBq /cm2 | 1.4÷36 | wound dressing | 142 (2) | 137 | 3223 | 31-36 |
| 164 and 722  kBq/cm2 | 1.4÷36 | wound dressing +  СаDTPA  treatment | 141 (2) | 141 | 3678 |
| 4 LE  test (8), ♂ | α | 239Pu, IV, citrate, рН 6.5, | intra peritonial | single | 92.5 kBq/kg |  | No dressing | 779 (8) | 616 | 14964 | 37-44 |
| Ca-,Zn-, CoDTPA  treatment |
| 5 D  test (4), ♂ | α | 239Pu, IV, nitrate, рН 1  nitrate-polymer | puncture  (muscle) | single | 103.6 kBq/kg |  | 7 sacrifices dates up to 512 days | 90 (4) | 90 | 491 | 51 |
| 6  test (11)  ♂ | α | 239Pu, IV, citrate, рН 6.5, | intravenous | single | 92.5 kBq/kg |  | treatment СаDTPA (9)  none (2) | 44 (11) | 44 | 133 | 52 |

note: \* ‑ in parentheses – number of test groups;

1 – dose in main deposition: lungs through inhalation; muscles through puncture; skin through scratch

**Contract 77329 Table 2: Layout for paraffin biomaterial from rats used to study LE and D\***

**FSUE SUBI, bld 3, floor 2, room. № 256, locker 1**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Row** | **Shelf number** | | | | | | | | | | | | | | |
| **1** | **1** | **2** | **3** | **4** | | **5** | | **6** | | **7** | | **8** | | **9** | |
| intramuscular  cage № 1-4, ♀  control  HNO3 | intramuscular  cage№ 23-25,♂  control  HNO3 | intramuscular  cage № 5-7, ♀  239Pu nitrate  +treatment | intramuscular  cage№ 8-10, ♀  239Pu nitrate  +treatment | | intramuscular  cage № 11-13, ♀  239Pu nitrate | | intramuscular  cage № 14-16, ♀  239Pu nitrate | | intramuscular  cage № 17-19, ♂  239Pu nitrate  +treatment | | intramuscular  cage № 20-22, ♂  239Pu nitrate  +treatment | | intramuscular  cage № 26-28, ♂  239Pu nitrate | |
| **2** | **10** | **11** | **12** | **13** | | **14** | | **15** | | **16** | | **17** | | **18** | |
| intramuscular  cage № 29-31,♂  239Pu nitrate | intramuscular  cage№ 32-34, ♂  239Pu citrate-polymer  +treatment | intramuscular  cage№ 35-37, ♂  239Pu citrate-polymer  +treatment | intramuscular  cage№ 38-40, ♂  239Pu citrate-polymer | | intramuscular  cage№ 41-43, ♂  239Pu citrate-polymer | | intramuscular  cage№ 44-46, ♀  239Pu citrate-polymer  +treatment | | intramuscular  cage № 47-49. ♀  239Pu citrate-polymer  +treatment | | intramuscular  cage № 50-52, ♀  239Pu citrate-  polymer | | intramuscular  cage № 53-55, ♀  239Pu citrate-  polymer | |
| **3** | **19** | **20** | **21** | **22** | | **23** | | **24** | | **25** | | **26** | | **27** | |
| intramuscular  cage№56-58,♀  239Pu nitrate  in GHBD and TBP +treatment | intramuscular  cage№ 59-61, ♀  239Pu nitrate  in GHBD and TBP +treatment | intramuscular  cage№ 62-64, ♀  239Pu nitrate  in GHBD and TBP | intramuscular  cage№ 65-67,♀  239Pu nitrate  in GHBD and TBP | | intramuscular  cage№ 68-70, ♂  239Pu nitrate  in GHBD and TBP +treatment | | intramuscular  cage№ 71-73, ♂  239Pu nitrate  in GHBD and TBP +treatment | | intramuscular  cage№ 74-76, ♂  239Pu nitrate  in GHBD and TBP | | intramuscular  cage№ 77-79, ♂  239Pu nitrate  in GHBD and TBP | | intramuscular  cage№ 80-82, ♀  GHBD control | |
| **4** | **28** | **29** | **30** | **31** | | **32** | | **33** | | **34** | | **35** | | **36** | |
| intramuscular  cage№ 83-86,♀  GHBD control | intramuscular  cage№ 87-89, ♂  GHBD  control | intramuscular  cage№ 90-93, ♂  GHBD  control | grazes | | grazes | | grazes | | grazes | | grazes | | grazes | |
| cage  94-  96, ♂  О+Л1 | cage  97-  99,♂  О2 | cage  100-  102,♂  О+Л1 | cage  103-  105,♂  О2 | cage  106-  110,♂  О+Л1 | cage  111-  115,♂  О2 | cage  116-  120,♂  О+Л1 | cage  121-  123,♂  О2 | cage  124-  126,♂  О+Л1 | cage  127-  129,♂  О2 | cage  130-132,♂  О+Л1 | cage  133-  135,♂  О2 |
| **5** | **37** | **38** | **39** | **40** | | **41** | | **42** | | **43** | | **44** | | **45** | |
| peritoneal  239Pu citrate  control  cage11-13, ♂  set I | peritoneal  239Pu citrate  + treatment  cage14-25, ♂  set II | peritoneal  239Pu citrate  + treatment  cage26-38, ♂  set III | peritoneal  239Pu citrate  + treatment  cage39-51, ♂  set IV | | peritoneal  239Pu citrate  + treatment  cage53-64, ♂  set VII | | peritoneal  239Pu citrate  + treatment  cage65-78, ♂  setVI | | peritoneal  239Pu citrate  + treatment  cage79-92, ♂  set VIII | | peritoneal  239Pu citrate  + treatment  cage93-106, ♂  set IX | |  | |
| **6** | **46** | **47** | **48** | **49** | | **50** | | **51** | | **52** | | **53** | | **54** | |
| inhalation  239Pu nitrate  +treatment  cage85,86,88,  89,91,95,  96, 97, ♂  set Х | inhalation  239Pu nitrate  cage87,90,92,  93,94,98,  99, 100, ♂  set Х | inhalation  239Pu nitrate  +treatment  cage101,103,  104,106,107,  109,111,113, ♂  set ХI | inhalation  239Pu nitrate  cage102,105,  108,110,112,  114,115,116,♂  set ХI | | intramuscular  dynamics  1h-512 day  239Pu nitrate  with treatment  and without  treatment, ♂ | | intramuscular  dynamics  1h-512 day  239Pu citrate-polymer  with treatment  and without treatment, ♂ | | intravenous  new  complexes  500μМ/kg/day  killing 3 day  ♂ | |  | |  | |
| Note: \* ‑ RLA – Remote Lesion After effects; LD – Lesion Dynamics; 1 – treatment of grazes+СаDTPA; 2 – treatment of grazes | | | | | | | | | | | | | | | |