

**Observation of morphological abnormalities in silkworm pupae after feeding  
<sup>137</sup>CsCl-supplemented diet to evaluate the effects of low dose-rate exposure**

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Table S1 Wing and whole-body length of silkworm pupae in control group

| Control ♂ |              |                       |            | Control ♀ |              |                    |            |
|-----------|--------------|-----------------------|------------|-----------|--------------|--------------------|------------|
| No.       | Wing<br>(mm) | Whole<br>body<br>(mm) | wing/whole | No.       | Wing<br>(mm) | Whole<br>body (mm) | wing/whole |
| 1         | 10.60        | 24.08                 | 0.44       | 1         | 10.37        | 25.77              | 0.40       |
| 2         | 11.49        | 20.80                 | 0.55       | 2         | 12.45        | 26.08              | 0.48       |
| 3         | 10.07        | 22.63                 | 0.44       | 3         | 10.70        | 24.58              | 0.44       |
| 4         | 10.21        | 23.34                 | 0.44       | 4         | 8.20         | 24.30              | 0.34       |
| 5         | 11.09        | 20.80                 | 0.53       | 5         | 8.70         | 24.26              | 0.36       |
| 6         | 12.17        | 22.18                 | 0.55       | 6         | 11.58        | 24.41              | 0.47       |
| 7         | 10.10        | 21.39                 | 0.47       | 7         | 10.34        | 23.45              | 0.44       |
| 8         | 10.89        | 22.11                 | 0.49       | 8         | 9.93         | 24.30              | 0.41       |
| 9         | 11.29        | 20.53                 | 0.55       | 9         | 9.81         | 26.87              | 0.36       |
| 10        | 10.03        | 21.26                 | 0.47       | 10        | 10.26        | 23.06              | 0.45       |
| 11        | 10.85        | 20.99                 | 0.52       | 11        | 10.84        | 24.52              | 0.44       |
| 12        | 9.71         | 22.15                 | 0.44       | 12        | 9.30         | 23.32              | 0.40       |
| 13        | 10.31        | 20.83                 | 0.49       | 13        | 9.34         | 25.54              | 0.37       |
| 14        | 11.64        | 20.54                 | 0.57       | 14        | 9.46         | 25.11              | 0.38       |
| 15        | 11.12        | 20.60                 | 0.54       | 15        | 11.97        | 21.40              | 0.56       |
| 16        | 8.95         | 21.48                 | 0.42       | 16        | 11.30        | 24.56              | 0.46       |
| 17        | 9.09         | 20.52                 | 0.44       | 17        | 11.17        | 23.22              | 0.48       |
| 18        | 9.47         | 22.02                 | 0.43       | 18        | 10.88        | 24.47              | 0.44       |
| 19        | 11.35        | 20.15                 | 0.56       | 19        | 9.65         | 25.62              | 0.38       |
| 20        | 10.88        | 19.54                 | 0.56       | 20        | 11.32        | 25.98              | 0.44       |

Table S2 Wing and whole-body length of silkworm pupae in  $^{137}\text{CsCl}$ -supplemented group

| Cs-137 ♂ |              |                    |            | Cs-137 ♀ |              |                    |            |
|----------|--------------|--------------------|------------|----------|--------------|--------------------|------------|
| No.      | Wing<br>(mm) | Whole body<br>(mm) | wing/whole | No.      | Wing<br>(mm) | Whole<br>body (mm) | wing/whole |
| 1        | 9.08         | 20.18              | 0.45       | 1        | 9.65         | 22.62              | 0.43       |
| 2        | 10.68        | 19.35              | 0.55       | 2        | 9.41         | 19.85              | 0.47       |
| 3        | 10.13        | 20.64              | 0.49       | 3        | 9.59         | 21.39              | 0.45       |
| 4        | 10.36        | 19.64              | 0.53       | 4        | 9.82         | 24.17              | 0.41       |
| 5        | 8.60         | 18.42              | 0.47       | 5        | 10.13        | 27.76              | 0.36       |
| 6        | 9.34         | 19.04              | 0.49       | 6        | 10.09        | 27.01              | 0.37       |
| 7        | 10.06        | 18.57              | 0.54       | 7        | 10.45        | 24.03              | 0.43       |
| 8        | 11.23        | 20.26              | 0.55       | 8        | 9.90         | 19.50              | 0.51       |
| 9        | 9.88         | 19.04              | 0.52       | 9        | 10.31        | 19.31              | 0.53       |
| 10       | 9.04         | 20.26              | 0.45       | 10       | 9.59         | 18.80              | 0.51       |
| 11       | 10.05        | 21.33              | 0.47       | 11       | 9.18         | 22.41              | 0.41       |
| 12       | 9.82         | 18.12              | 0.54       | 12       | 10.42        | 20.84              | 0.50       |
| 13       | 8.70         | 20.52              | 0.42       | 13       | 9.81         | 22.26              | 0.44       |
| 14       | 10.10        | 20.83              | 0.49       | 14       | 10.45        | 21.53              | 0.49       |
| 15       | 9.47         | 21.52              | 0.44       | 15       | 9.02         | 23.79              | 0.38       |
| 16       | 9.98         | 21.51              | 0.46       | 16       | 9.88         | 21.31              | 0.46       |
| 17       | 10.31        | 18.87              | 0.55       | 17       | 10.67        | 21.10              | 0.51       |
| 18       | 10.01        | 17.45              | 0.57       | 18       | 8.90         | 21.05              | 0.42       |
| 19       | 11.36        | 19.08              | 0.60       | 19       | 9.48         | 21.61              | 0.44       |
| 20       | 9.08         | 20.27              | 0.45       | 20       | 9.76         | 22.15              | 0.44       |
| 21       | 9.52         | 21.83              | 0.44       | 21       | 10.39        | 26.86              | 0.39       |
| 22       | 9.35         | 21.86              | 0.43       | 22       | 10.08        | 20.91              | 0.48       |
| 23       | 9.30         | 18.98              | 0.49       | 23       | 10.00        | 21.35              | 0.47       |
| 24       | 9.64         | 22.57              | 0.43       | 24       | 9.48         | 23.54              | 0.40       |
| 25       | 10.93        | 21.07              | 0.52       | 25       | 9.47         | 20.39              | 0.46       |
| 26       | 10.06        | 19.79              | 0.51       | 26       | 9.72         | 22.27              | 0.44       |
| 27       | 10.33        | 17.30              | 0.60       | 27       | 9.35         | 22.33              | 0.42       |
| 28       | 10.13        | 20.74              | 0.49       | 28       | 11.01        | 21.63              | 0.51       |
| 29       | 10.18        | 18.53              | 0.55       | 29       | 9.40         | 24.05              | 0.39       |
| 30       | 10.03        | 19.04              | 0.53       | 30       | 9.95         | 24.36              | 0.41       |

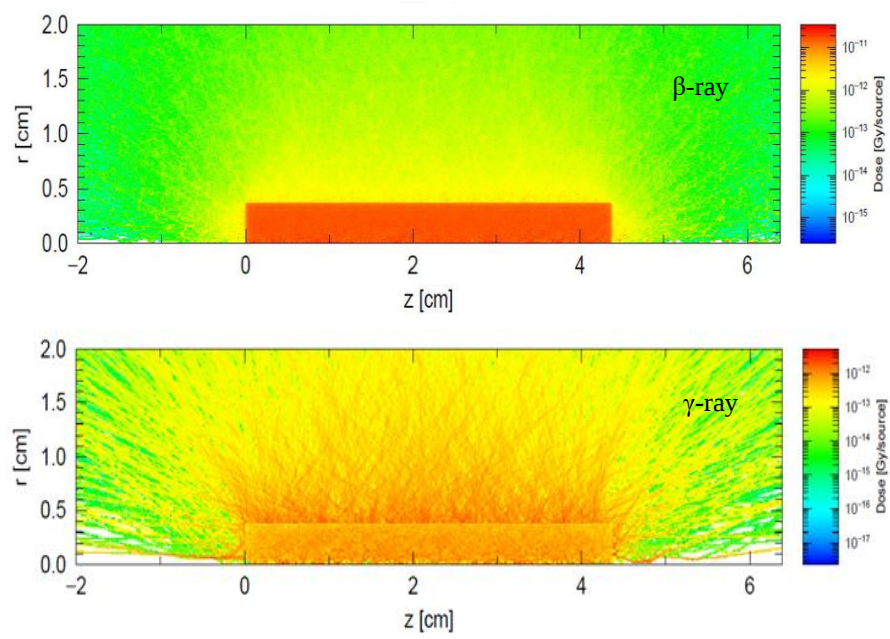


Fig. S1 Behavior of radiation from  $^{137}\text{Cs}$  in silkworm larvae simulated by PHITS