**SUPPLEMENT TABLE 1.** Results from mixed models evaluating effects of extreme heat wear time on permethrin dose

|  |  |  |
| --- | --- | --- |
|  | **LN(*cis-*DCCA)****β (p-value)** |  **LN(*trans-*DCCA)** **β (p-value)** |
| **Model 1 (expeditionary conditions-33h consecutive; comparing heat (Group 1) to ambient, control (Group 3) conditions)** |
| Group 1Group 3 | 0.617 (0.0001)Reference | 0.549 (<0.0001)Reference |
| Creatinine (mg/dL) | 0.007 (<0.0001) | 0.007 (<0.0001) |
| % Body Fat | -0.017 (0.162) | 0.010 (0.338) |
| **Model 2 (garrison conditions-8h/day over 3 days; comparing heat (Group 2) to ambient, control (Group 4) conditions)** |
| Group 2Group 4 | 0.419 (0.0004)Reference | 0.550 (0.0002)Reference |
| Creatinine (mg/dL) | 0.009 (<0.0001) | 0.009 (<0.0001) |
| % Body Fat | -0.046 (0.004) | -0.021 (0.205) |
| **Model 3 (in heat conditions; comparing 33h consecutive (Group 1) 8h/day over 3 days (Group 2) wear-time durations)** |
| Group 1Group 2 | 0.518 (<0.0001)Reference | 0.217 (0.0004)Reference |
| Creatinine (mg/dL) | 0.009 (<0.0001) | 0.009 (<0.0001) |
| % Body Fat | 0.022 (0.08) | 0.052 (<0.0001) |
| **Model 4 (in control conditions; comparing 33h consecutive (Group 3) 8h/day over 3 days (Group 4) wear-time durations)** |
| Group 3Group 4 | 0.208 (0.173)Reference | -0.040 (0.686)Reference |
| Creatinine | 0.008 (<0.0001) | 0.007 (<0.0001) |
| % Body Fat | -0.026 (0.112) | -0.002 (0.820) |
| SmokerNon-smoker | 0.180 (0.236)Reference | 0.036 (0.722)Reference |

**SUPPLEMENT TABLE 2.** Summary of creatinine-adjusted median and 95th percentile concentrations compared to the U.S. general population

|  |  |
| --- | --- |
|  | Median, 95th Percentile Concentrations (µg/g creatinine) |
|  | 3-PBA | *trans-*DCCA | *cis-*DCCA | ∑DCCA |
| **Group 1**  U2 (Day 1 afternoon, following work week) U4 (Day 4 morning, following weekend) U12 (12 hours after removing treated study uniform, Day 6 morning) U19 (Day 8 afternoon, following study week) U21 (End of study, following weekend, Day 11 morning) | 16.10, 61.499.41, 35.3795.01, 180.6323.0, 56.3312.99, 40.60 | 25.64, 57.1911.44, 37.80132.68, 174.2323.79, 48.0315.58, 38.28 | 9.41, 29.295.61, 17.6544.71, 74.3310.71, 19.546.08, 17.10 | 35.53, 86.4816.98, 52.78190.85, 248.5634.49, 64.7021.66, 53.49 |
| **Group 2** U2 (Day 1 afternoon, following work week) U4 (Day 4 morning, following weekend) U16 (12 hours after removing treated study uniform, Day 7 morning) U19 (Day 8 afternoon, following study week) U21 (End of study, following weekend, Day 11 morning) | 18.80, 41.012.05, 18.9860.06, 143.6324.40, 52.8116.39, 35.86 | 25.20, 59.3514.44, 18.0861.14, 144.6227.57, 52.7516.51, 35.17 | 10.67, 20.186.41, 9.2823.65, 66.1415.58, 18.297.37, 13.07 | 38.26, 79.5320.85, 27.3684.76, 210.7643.97, 70.0625.41, 48.24 |
| **Group 3**  U2 (Day 1 afternoon, following work week) U4 (Day 4 morning, following weekend) U12 (12 hours after removing treated study uniform, Day 6 morning) U19 (Day 8 afternoon, following study week) U21 (End of study, following weekend, Day 11 morning) | 16.81, 43.4710.50, 20.3538.13, 54.3424.28, 32.5612.90, 19.86 | 18.95, 58.3011.33, 18.5856.64, 64.8433.66, 44.1213.56, 15.78 | 7.66, 17.615.91, 10.6223.06, 30.6312.0, 24.087.97, 11.17 | 26.09, 75.9117.57, 28.1377.0, 94.9444.58, 67.8022.61, 26.26 |
| **Group 4** U2 (Day 1 afternoon, following work week) U4 (Day 4 morning, following weekend) U16 (12 hours after removing treated study uniform, Day 7 morning) U19 (Day 8 afternoon, following study week) U21 (End of study, following weekend, Day 11 morning) | 19.97, 44.568.16, 30.5249.85, 42.2739.55, 58.6415.94, 19.47 | 32.35, 46.9011.13, 29.3550.56, 91.1841.34, 43.7615.15, 31.36 | 14.34, 21.025.06, 14.3826.04, 88.0323.08, 51.798.15, 36.07 | 46.88, 68.4315.94, 42.5276.56, 130.4265.60, 105.1723.23, 55.24 |
| **Adult US Population, aged 20-59 (NHANES 2009-2010)6** | 0.365, 4.72 | <LOD, 4.37 | <LOD, <LOD | NA |

U = Urine collection time point; LOD = Limit of detection (LOD for *trans*-DCCA and *cis*-DCCA=0.6 µg/L)

3-PBA = 3-phenoxybenzoic acid

*trans-*DCCA *= trans*-3-(2,2-dichlorovinyl)-2,2-dimethyl-cyclopropane-1-carboxylic acid

*cis-*DCCA *= cis*-3-(2,2-dichlorovinyl)-2,2-dimethyl-cyclopropane-1-carboxylic acid

∑DCCA= sum of *trans-*DCCA+ *cis-*DCCA