**Supplementary material**

**Supplementary Table 1.** Mann-Whitney U and p values of cortical levels of cytokines and chemokines

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cytokine/chemokine** | **Control** | **Laser** | **U** | **p** |
| **G-CSF** | 16.2±1.7 | 12.6±0.4 | 6.000 | 0.147 |
| **Eotaxin** | 2.9±0.1 | 2.8±0.1 | 12.500 | 1.000 |
| **GM-CSF** | 23.1±6.5 | 21.8±5.6 | 9.500 | 0.902 |
| **IL-1** | 3.3±0.3 | 10.5±1.3 | <0.0001 | 0.008\* |
| **Leptin** | 99.3±12.1 | 124.7±18.4 | 9.000 | 0.463 |
| **MIP-1** | 2.1±0.2 | 1.8±0.1 | 12.500 | 1.000 |
| **IL-4** | 40.5±2.2 | 33.1±2.7 | 4.500 | 0.090 |
| **IL-1** | 2.8±0.2 | 3.1±0.3 | 8.500 | 0.343 |
| **IL-2** | 3.2±0.3 | 3.1±0.3 | 8.500 | 0.339 |
| **IL-6** | 58.8±5.9 | 72.9±3.8 | 4.000 | 0.072 |
| **IL-13** | 54.1±6.5 | 48.0±6.1 | 10.500 | 0.673 |
| **IL-10** | 2.5±0.2 | 3.3±0.4 | 5.000 | 0.118 |
| **IL-5** | 567.8±107.3 | 267.3±25.7 | 3.000 | 0.046\* |
| **IL-17** | 36.2±2.6 | 35.8±2.9 | 9.000 | 0.459 |
| **IL-18** | 129.6±3.0 | 126.7±2.6 | 7.000 | 0.457 |
| **MCP-1** | 245.5±81.3 | 278.9±54.0 | 10.000 | 0.602 |
| **IP-10** | 22.1±2.4 | 24.3±2.0 | 7.500 | 0.539 |
| **VEGF** | 21.6±3.1 | 19.6±0.5 | 8.000 | 0.340 |
| **Fractalkine** | 183.8±10.7 | 181.0±6.1 | 10.000 | 0.602 |
| **MIP-2** | 13.2±1.1 | 10.1±1.1 | 4.500 | 0.089 |
| **TNF** | 0.1±0.0 | 0.1±0.0 | 12.500 | 1.000 |
| **RANTES** | 29.9±2.4 | 33.3±2.0 | 6.500 | 0.203 |

**Legend.** Cortical expression of cytokines and chemokines are shown in picogram per microgram of protein (pg/mg of total protein). \* Significant difference between groups (p<0.05; Mann-Whitney test).

**Supplementary Table 2.** Mann-Whitney U and p values of hippocampal levels of cytokines and chemokines

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cytokine/chemokine** | **Control** | **Laser** | **U** | **p** |
| **G-CSF** | 14.3±1.1 | 11.4±0.4 | 3.000 | 0.079 |
| **Eotaxin** | 2.5±0.1 | 2.6±0.1 | 8.500 | 0.655 |
| **GM-CSF** | 23.1±9.3 | 24.1±9.7 | 6.000 | 0.653 |
| **IL-1** | 3.1±0.5 | 8.4±2.5 | 1.500 | 0.035\* |
| **Leptin** | 93.2±20.6 | 57.4±2.6 | 5.000 | 0.221 |
| **MIP-1** | 1.5±0.2 | 1.0±0.1 | 6.000 | 0.176 |
| **IL-4** | 43.7±7.7 | 89.6±38.1 | 5.500 | 0.268 |
| **IL-1** | 1.6±0.1 | 1.7±0.2 | 5.000 | 0.091 |
| **IL-2** | 2.6±0.2 | 2.0±0.1 | 4.000 | 0.074 |
| **IL-6** | 64.1±10.0 | 78.8±2.1 | 6.000 | 0.655 |
| **IL-13** | 23.7±2.6 | 22.1±3.8 | 8.000 | 0.610 |
| **IL-10** | 2.1±0.2 | 2.2±0.2 | 9.500 | 0.866 |
| **IL-5** | 567.4±73.1 | 255.5±58.2 | 1.000 | 0.027\* |
| **IL-17** | 27.8±0.6 | 24.9±2.6 | 7.500 | 0.532 |
| **IL-18** | 119.6±8.8 | 94.1±6.8 | 2.000 | 0.049\* |
| **MCP-1** | 338.6±108.7 | 543.3±84.0 | 5.000 | 0.221 |
| **IP-10** | 19.9±2.6 | 15.9±1.0 | 5.500 | 0.266 |
| **VEGF** | 17.3±1.9 | 12.2±1.2 | 3.000 | 0.085 |
| **Fractalkine** | 158.1±6.5 | 130.8±6.8 | 1.500 | 0.037\* |
| **MIP-2** | 11.4±0.6 | 10.5±0.8 | 7.000 | 0.451 |
| **TNF** | 0.1±0.0 | 0.3±0.1 | 10.000 | 1.000 |
| **RANTES** | 23.0±3.8 | 61.0±24.8 | 3.000 | 0.081 |

**Legend.** Hippocampal expression of cytokines and chemokines are shown in picogram per microgram of protein (pg/mg of total protein). \* Significant difference between groups (p<0.05; Mann-Whitney test).

**Supplementary Table 3.** Mann-Whitney U and p values of cortical expression and activation of signaling proteins

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Signaling protein** | **Control** | **Laser** | **U** | **p** |
| **Akt** | 1.0±0.1 | 0.8±0.1 | 5.000 | 0.117 |
| **p70S6K** | 1.0±0.1 | 1.0±0.1 | 12.000 | 0.917 |
| **STAT3** | 1.0±0.1 | 0.8±0.1 | 5.000 | 0.117 |
| **STAT5** | 1.0±0.2 | 0.9±0.2 | 10.000 | 0.602 |
| **ERK** | 1.0±0.0 | 0.9±0.0 | 2.000 | 0.028\* |
| **JNK** | 1.0±0.1 | 0.9±0.1 | 7.000 | 0.251 |
| **NF-kB** | 1.0±0.2 | 0.9±0.2 | 12.000 | 0.917 |
| **p38** | 1.0±0.1 | 0.7±0.1 | <0.0001 | 0.009\* |
| **p-Akt/ Akt** | 1.0±0.1 | 1.0±0.1 | 12.000 | 0.917 |
| **p-p70S6K/ p70S6K** | 1.0±0.5 | 0.9±0.3 | 12.000 | 0.917 |
| **p-STAT3/ STAT3** | 1.0±01 | 1.5±01 | 1.000 | 0.016\* |
| **p-STAT5/ STAT5** | 1.0±0.2 | 0.8±0.1 | 10.000 | 0.602 |
| **p-ERK/ ERK** | 1.0±0.1 | 1.7±0.1 | <0.0001 | 0.014\* |
| **p-JNK/ JNK** | 1.0±0.1 | 1.1±0.0 | 11.000 | 0.754 |
| **p-NF-kB/ NF-kB** | 1.0±0.2 | 1.0±0.1 | 12.000 | 0.917 |
| **p-p38/ p38** | 1.0±0.3 | 0.8±0.1 | 12.000 | 0.917 |

**Legend.** Cortical expression and activation of signaling proteins were normalized to the mean fluorescence intensity (MFI) of the control group. \* Significant difference in relation to the control group (p<0.05; Mann-Whitney test).

**Supplementary Table 4.** Mann-Whitney U and p values of hippocampal expression and activation of signaling proteins

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Signaling Protein** | **Control** | **Laser** | **U** | **p** |
| **Akt** | 1.0±0.1 | 0.8±0.1 | 5.000 | 0.117 |
| **p70S6K** | 1.0±0.2 | 2.0±0.2 | 1.000 | 0.016\* |
| **STAT3** | 1.0±0.0 | 1.1±0.2 | 8.000 | 0.624 |
| **STAT5** | 1.0±0.1 | 1.5±0.2 | 2.000 | 0.050\* |
| **ERK** | 1.0±0.0 | 1.0±0.0 | 5.000 | 0.117 |
| **JNK** | 1.0±0.1 | 1.0±0.1 | 12.000 | 0.917 |
| **NF-kB** | 1.0±0.2 | 1.2±0.2 | 6.000 | 0.175 |
| **p38** | 1.0±0.1 | 0.7±0.1 | 2.000 | 0.028\* |
| **p-Akt/ Akt** | 1.0±0.1 | 1.2±0.1 | 6.000 | 0.175 |
| **p-p70S6K/ p70S6K** | 1.0±0.4 | 0.9±0.1 | 12.000 | 0.917 |
| **p-STAT3/ STAT3** | 1.0±0.3 | 1.4±0.0 | 8.000 | 1.000 |
| **p-STAT5/ STAT5** | 1.0±0.2 | 0.9±0.2 | 11.000 | 0.754 |
| **p-ERK/ ERK** | 1.0±0.3 | 1.2±0.2 | 9.000 | 0.465 |
| **p-JNK/ JNK** | 1.0±0.1 | 1.3±0.1 | 4.000 | 0.076 |
| **p-NF-kB/ NF-kB** | 1.0±0.2 | 0.7±0.1 | 6.000 | 0.175 |
| **p-p38/ p38** | 1.0±0.1 | 1.1±0.1 | 10.000 | 1.000 |

**Legend.** Hippocampal expression and activation of signaling proteins were normalized to the mean fluorescence intensity (MFI) of the control group. \* Significant difference in relation to the control group (p<0.05; Mann-Whitney test).