**Supplementary Table 1: Time spent in wakefulness, NREM, and REM sleep after CNO and saline injections**

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| --- | --- | --- | --- |
|  | Treatment condition(mean values ± standard error) | Mixed-effect analysis  | Effect size for post-hoc comparisons (Cohen’s d) |
| Vigilance state | Parameter | Saline(n=16) | CNO1 mg/kg(n=11)  | CNO 5 mg/kg(n=15)  | CNO10 mg/kg(n=14)  | *F* | *p* | low dose | medium dose | high dose |
| **Wake** |  |  |  |  |  |  |  |  |  |  |
|  | 2-h time window (%) | 38.7813±3.2743 | 38.3636±5.7692 | 33.5444±3.8399 | 29.6429±3.9910  | F (1.939, 23.91) = 1.468 | 0.2504 | -0.0234 | -0.3393 | -0.4815 |
|  | 6-h time window (%) | 28.3530±1.3114 | 29.3232±2.5037 | 26.9321±1.5278 | 26.2553±1.7923 | F (1.730, 21.34) = 0.6888 | 0.4928 | 0.1467 | -0.1715 | -0.2633 |
| **NREM** |  |  |  |  |  |  |  |  |  |  |
|  | 2-h time window (%) | 51.9896±2.6391 | 53.7020±4.6576 | 58.7741±3.2742 | 63.7103±3.7117 | F (1.911, 23.57) = 3.054 | 0.0682 | 0.1157 | 0.4941 | 0.6961 |
|  | 6-h time window (%) | 59.0799±1.1641 | 58.9074±1.9870 | 62.1914±1.2667 | 62.6111±1.6784 | F (1.531, 18.88) = 2.028 | 0.1661 | -0.0361 | 0.4130 | 0.4630 |
| **REM** |  |  |  |  |  |  |  |  |  |  |
|  | 2-h time window (% of TST) | 10.4160±0.5877 | 8.1286±1.0534 | 8.4071±0.8351 | 6.5371±0.5937 | F (1.783, 21.99) = 8.951 | 0.0019 | -0.5802 | -0.5594 | -1.2743 |
|  | 6-h time window (% of TST) | 13.1740±0.3774 | 12.3119±0.4884 | 11.1629±0.5722 | 11.0742±0.4606 | F (1.839, 22.68) = 7.525 | 0.0038 | -0.4697 | -0.7724 | -0.9333 |
|  | 2-h time window (% of NREM) | 11.6996±0.7374 | 8.9862±1.2086 | 9.3021±0.9672 | 7.0497±0.6714 | F (1.858, 22.91) = 9.140 | 0.0015 | -0.5895 | -0.5673 | -1.2707 |
|  | 6-h time window (% of NREM) | 15.2055±0.5001 | 14.0760±0.6364 | 12.6328±0.7455 | 12.4919±0.5741 | F (1.788, 22.05) = 7.382 | 0.0045 | -0.4658 | -0.7509 | -0.9430 |
|  | 2-h time window (%) | 6.1354±0.5709 | 5.2121±0.8723 | 5.5296±0.6426 | 4.3492±0.4418 | F (2.366, 29.18) = 2.590 | 0.0839 | -0.3251 | -0.2348 | -0.6559 |
|  | 6-h time window (%) | 8.9329±0.2401 | 8.2963±0.4838 | 7.8568±0.4849 | 7.7619±0.3314 | F (2.350, 28.99) = 2.959 | 0.0601 | -0.3718 | -0.5591 | -0.8140 |