Figure S1. Circadian rhythms of peripheral and central markers in Visit 1/Day 1 and Visit 1/Day 2 in the placebo group and their stability in response to sleep. Mean levels (±SEM) and harmonic regressions of plasma cortisol (μg/dl) (A, B), plasma melatonin (pg/ml) (C, D), *BMAL1* (% of mean) (E, F), *PER1* (% of mean) (G, H), *PER2* (% of mean) (I, J) and *PER3* (% of mean) (K, L). Visit 1/Day 1 and Visit 1/Day 2 are represented by black and white circles for mean levels (A, C, E, G, I, K), respectively, and by solid and dashed lines for harmonic regressions (B, D, F, H, J, L), respectively. For analysis purposes, bedtimes and wake times were assigned a relative clock time of 00:00 and 08:00, respectively (x-axis). Above the x-axis, the hatched gray bars represent the 8-h sleep periods (Visit 1/Day 1) or the projected time of the sleep period (Visit 1/Day 2) and white bars represent the waking periods (both days of Visit 1). The time of the first placebo administration during Visit 1/Day 2 is indicated by an arrow. Harmonic regressions are represented by solid and dash lines when statistically significant and by dotted lines when non-significant (F). When rhythms were significant in Visit 1/Day 2 and Visit 1/Day 1, their phases were statistically compared using *nlmixed* model (cortisol, *PER1*-3) or unpaired t-test (melatonin) to assess a masking effect of sleep. Results were reported for each marker (B, D, H, J, L). n.s., non-significant.

Figure S2. Circadian rhythms of peripheral and central markers in Visit 1/Day 1 and Visit 1/Day 2 in the Cortef group and their stability in response to sleep. Mean levels (±SEM) and harmonic regressions of plasma cortisol (μg/dl) (A, B), plasma melatonin (pg/ml) (C, D), *BMAL1* (% of mean) (E, F), *PER1* (% of mean) (G, H), *PER2* (% of mean) (I, J) and *PER3* (% of mean) (K, L). Visit 1/Day 1 and Visit 1/Day 2 are represented by black and white squares for mean levels (A, C, E, G, I, K), respectively, and by solid and dashed lines for harmonic regressions (B, D, F, H, J, L), respectively. For analysis purposes, bedtimes and wake times were assigned a relative clock time of 00:00 and 08:00, respectively (x-axis). Above the x-axis, the hatched gray bars represent the 8-h sleep periods (Visit 1/Day 1) or the projected time of the sleep period (Visit 1/Day 2) and white bars represent the waking periods (both days of Visit 1). The time of the first Cortef administration during Visit 1/Day 2 is indicated by an arrow and increased levels of cortisol (A) and *PER1* (G) can be observed following the administration. Harmonic regressions are represented by solid and dash lines when statistically significant. When rhythms were significant in Visit 1/Day 2 and Visit 1/Day 1, their phases were statistically compared using *nlmixed* model (cortisol, *BMAL1, PER1*-3) or unpaired t-test (melatonin) to assess a masking effect of sleep. Results were reported for each marker (B, D, F, H, J, L). n.s., non-significant.