

## **Description of Additional Supplementary Files**

File Name: Supplementary Movie 1

Description: Typical transition between non-REM sleep (NREMS) and REM sleep (REMS) captured by functional Ultrasound (fUS) and EEG - Rat #1 - Coronal plane - Bregma = -4.0 mm

File Name: Supplementary Movie 2

Description: Typical transition between non-REM sleep (NREMS) and REM sleep (REMS) captured by functional Ultrasound (fUS) and EEG - Rat #2 - Coronal plane - Bregma = -6.0 mm

File Name: Supplementary Movie 3

Description: Typical transition between non-REM sleep (NREMS) and REM sleep (REMS) captured by functional Ultrasound (fUS) and EEG - Rat #3 - Diagonal plane - Delta = 45° from sagittal plane.