**Background & Purpose**

Assessment of CNS related toxicity requires the development of predictive models and objective readouts.

Drugs may alter the sleep macrostructure with potential negative impact on patients.

EEG is a valuable tool for CNS activity live monitoring.

Development of an automated method for assessment of drug-induced changes in sleep macrostructure using EEG recording.

**Translational approach**

**Material & Methods**

**Correlation between automatic scoring (HYPNOS) and manual scoring (video) of sleeping time**

Significant correlation

**Effect of caffeine on sleeping time**

- Vehicle (n=8)
- Caffeine (n=8)

**Effect of caffeine on sleep macrostructure**

**Results**

**Conclusion**

We were able to highlight the stimulant effect of caffeine using “HYPNOS” supporting the validity of our model for polysomnography studies. Additional experimentations aiming at highlighting the effect of a CNS depressant are currently ongoing. We propose our automated method as a valuable tool for assessment of drug-induced changes in sleep patterns in the framework of CNS safety pharmacology studies.