Cannabis sativa is one of the oldest herb plants in the history of medicine. Nowadays, cannabinoids are used throughout the world in various therapeutic applications from pain to epilepsy. In the central nervous system, the endocannabinoid system exerts important functions by the activation of CB1 receptors, such as retrograde inhibition of neurotransmitter release, control of neuronal excitability and regulation of various forms of synaptic plasticity. Moreover, cannabinoids seem to play a main role in the regulation of sleep.

In the present study the sleep inducing effect of cannabinoid agonists, synthetic and phytocannabinoids included, is explored. It is investigated whether the sedating effect found in the synthetic agonist also applies for the phytocannabinoids and whether it applies to specific components of the phytocannabinoid spectrum. The sedating effects of cannabinoids were investigated in freely-moving Wistar rats. Movements of the animals were recorded with an analogic passive infrared detector (PIR). EEG and EMG electrodes were implanted in male rats at age of 8-month and after recovery cannabinoids were injected subcutaneously. The synthetic cannabinoid agonist R(+)-WIN55, 212 caused a dose-dependent decrease in motor activity, which is an indication for sedation, with an apparent ED50 of 9.9 mg/kg (95%CI: 6.3-16 mg/kg). Analysis of the EEG, EMG and PIR signals of the phytocannabinoids are presently being processed and analyzed and will be presented at the forum.