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Poster

## [P26-2] P26-2: Central nervous system drugs (1)

Chair: Atsushi Yonezawa, Japan

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## [P26-2-7] Fully automatized LC-MS/MS analysis of neuroleptics using a novel sample preparation system

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### Background

Neuroleptics also known as antipsychotics are a class of drug used for medication primarily used to manage psychosis. Their active principle is influencing the synaptic conduction in the central nervous system. Their precise quantitation for therapeutic purpose is necessary as for several class of drugs like antidepressants, benzodiazepines, anti-epileptics... Such analysis are mainly done by liquid chromatography coupled to tandem mass spectrometry (LC-MS/MS) with multi-analytes approach nowadays. In order to streamline the workflow, we demonstrate here the use of a novel fully automated sample preparation system coupled online with LC-MS/MS.

### Methods

In order to demonstrate that this multi-analytes approach with a fully automated system MS/MS can be used as a walk-away unit, we used the commercial kit Neuroleptics 1/extended (Chromsystems, 92912/XT) which is part of the TDM platform including antidepressants, benzodiazepines, TCAs, AEDs, Anti-mycotics, ...Such a platform enables the analysis of more than 150 parameters without switching column or changing the mobile phases, thereby minimising required workload in the laboratory. The set Neuroleptics 1/Extended includes 11 analytes (9-OH-risperidone, Aripiprazole, Clozapine, Dehydroaripiprazole, Haloperidol, N-Desmethylclozapine, N-Desmethyloanzapine, Norquetiapine, Olanzapine, Quetiapine, Risperidone). All parameters, mobile phases, column, Labelled Stable Isotopes, Calibrators are delivered with the kit.

### Results

A complete neuroleptics analysis using an automated sample preparation system, seamlessly integrated online with a UHPLC-MS/MS, with a ready to use Neuroleptics kit, demonstrates the capability of CLAM-2000 to be used for a standardized platform for TDM. Classical LC-MS method limitations are dramatically decreased eliminating errors associated with manual sample handling.

### Conclusions

The novel system workflow results in easier and safer operation for users even without Chromatography and Mass Spectrometry experience, thus reducing risk of exposure. It allows to access and analyse hundreds of analytes on the same system without any modification thus improving the quality of service delivered to doctors for quick decision.

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