

## **Development of a sensitive CE-LIF method for the analysis of synthetic cathinones**

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Synthetic cathinones (SCs) are phenylalkylamine compounds related to natural cathinone from *Catha Edulis* leaves. Given their structural similarities with amphetamines, these compounds are mainly drugs of abuse. Indeed these substances constitute the second most frequently seized group of new psychoactive substances (NPS) and counted more than 130 compounds in Europe (EMCDDA 2016). In this context, reliable analytical tools are required to track these substances.

In this study, our goal was to develop a capillary electrophoresis separation method coupled to laser induced fluorescence detection (CE-LIF) to analyze SCs. CE separation was optimized by means of BGE composition study. Various additives have been investigated to achieve separation of these closely related compounds. Due to their lack of native fluorescence, analytes were derivatized using fluorescein isothiocyanate isomer I (FITC). A protocol adapted to small basic compounds was previously optimized using DoE strategy.

The CE-LIF optimized method could be proposed as a generic method for the screening of SCs.

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**Thematic:**

- Target and drug discovery
- Biopharmaceutic(al)s
- Nanomedecine
- Personalized Medicine
- Methodological or technical developments
- Other