

Forensic analysis of biogenic recreational drugs by non-aqueous capillary electrophoresis – mass spectrometry

Posch, T., Jülich, Pütz, M., Wiesbaden, Martin, N., Wiesbaden, Huhn, C., Jülich

Tjorben Posch, Forschungszentrum Jülich, Wilhelm-Johnen-Straße, 52425 Jülich

This study presents a new generic method for the analysis of indole alkaloids by non-aqueous capillary electrophoresis coupled to mass spectrometry (NACE-MS) especially suited for the separation of structurally closely related compounds or stereoisomers. With the method developed here, we analyzed a large number of samples of the biogenic drug Kratom, both from herbal shops and from drug seizures. Despite their different provenience declared by the vendor all samples analyzed showed surprisingly similar alkaloid profiles. The addition of O-desmethyltramadol to one drug seizure was verified.

The method developed here can further be used for a large range of other biogenic drug samples containing indole alkaloids as demonstrated with the analysis of tryptamine, harmala and iboga alkaloids in various methanolic plant extracts. Direct injection was possible, successful separation of the structurally closely related active ingredients was usually achieved within 12 minutes. MS detection provided the identification of the alkaloids.