

Abstract
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On request of the police and the public prosecutor team Illicit Drugs of the Netherlands Forensic Institute is analyzing samples which are suspected to contain substances which are listed in the Dutch Narcotics Law (Opiumwet). Up to 10 years ago the drugs market was quite conservative and mainly a limited number of drugs were encountered in case work: cocaine, heroin and synthetic drugs like amphetamine and MDMA (XTC). After 2009, the synthetic drug market has been rapidly expanding to include many new psychoactive substances (NPS). Most of these drugs have chemical structures closely related to 'traditional' drugs, and therefore are called designer drugs, but are not listed as a drug. Some of these NPS induce similar psychoactive effects, but also cause severe health effects to the user, including death. These substances are brought under (inter)national control. As soon as an NPS is controlled as an illicit substance new variants, e.g. positional isomers, emerge that have not yet been listed. The identification of the precise isomeric forms is of significant forensic relevance since the legal status of these isomers may differ. The challenges associated with the identification of new NPS have become more apparent with the increasing number of new drugs in the market: fenethylamines, cathinones, tryptamines, piperazines, synthetic cannabinoids (cannabimimetics), new synthetic opioids and new benzodiazepines. The need to identify specific isomers due to legislation in combination with the lack of reference standards for comparison makes the identification process a daunting task. In 2019 the Dutch government proposed new drugs legislation with the intention to restrict the production, sale and supply of a number of NPS classes. In the lecture the focus will be on the advances in the identification process of illicit drugs, the analytical techniques that are involved and the future prospects of the newly proposed NPS drug legislation in the Netherlands.