

# Study of the chemical and stereochemical stability of N-ethylpentedrone in biological matrices and mobile phase

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## Annotation

Nowadays the number of new psychoactive substances (NPS) is increasing rapidly. Among various compound classes, many NPS are chiral and few publications deal with the different pharmacological and toxicological properties of their enantiomers. Previous studies have shown that many of the synthetic cathinones are quite unstable in the various biological matrices, which are used for forensic and toxicological analysis.

Based on the abovementioned information, part of this study is focused on the stability of N-ethylpentedrone (NEP) in the various biological matrices such as blood, oral fluid and urine.

For the chemical stability commercially available racemic NEP standard was used. Since enantiomerically pure forms of the NEP are not commercially available, for the stereochemical stability studies both enantiomers of NEP were collected. The collected fractions were used to study racemization process both in the mobile phase and in different biological matrices at  $-25^{\circ}\text{C}$ ,  $+5^{\circ}\text{C}$  and room temperature. Based on the collected experimental results basic pharmacokinetic parameters of chemical and stereochemical transformation of NEP were calculated.