Development of a high performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS) method for separation of enantiomers of N-Ethylhexedrone and its phase-1 metabolites

Gizo Dolidze

e-mail: Gizo.dolidze@gmail.com

Faculty of exact and natural scienses

Ivane Javaxishvili Tbilisi State univetsity, I. Chavchavadze Ave 3, Tbilisi, Georgia

Annotation

This study describes a method for separation of enantiomers and stereoisomers of N-Ethylhexedrone and its phase-1 metabolites in human oral fluid (OF) using a high-performance liquid chromatography-tandem mass spectrometry (HPLC-MS/MS)..

The trend of developing and using novel chiral psychoactive substances (NPS) is rapidly growing. This leads to increasing interest for enantioselective methods for forensic toxicology. The reason for this is that among NPS of different classes many are chiral and there aren't many works which address the difference in pharmacological and toxicological properties of their enantiomers. This work is part of the study, in which we attempted developing analytical method for enantioselective analysis of N-ethylhexedrone and its phase-1 metabolites.

Several chiral stationary phases were tested in order to create the method. The best chiral column for our purpose was Cellulose tris(3,5-dimethylphenylcarbamate) coated on silica-gel (Lux Cellulose-1). After some screening, methanol and 5mM ammonium acetate buffer in water with 60:40 (v/v) ratio was chosen as a mobile phase.

This method was suitable to quantitatively determine the parent compound and some of its phase-1 metabolites, as well. For the separation of enantiomers of phase-1 metabolites different stationary and mobile phases were also used.