

EXPERT FORENSIC RESEARCH OF SMOKING AROMATIC MIXTURES

Key words: new psychoactive substances, forensic research of narcotic drugs and psychotropic substances, illegal drug trafficking, synthetic cannabinoids, problems that can be resolved by forensic examination of narcotic drugs and psychotropic substances.

Anahtar kelimeler: yeni psikoaktif maddeler, narkotik ilaçlar ve psikotrop maddelerin adli araştırması, yasa dışı uyuşturucu kaçakçılığı, sentetik kanabinoidler, narkotik ilaçlar ve psikotrop maddelerin adli muayenesi ile çözülebilecek sorunlar.

Drug trafficking and drug addiction is one of the most global problems in the world today. Combating these

problems requires the combined efforts of the entire world. The scale of the spread of illicit drug trafficking is becoming alarming and poses a serious threat to the national security of any state.

Currently, there is a worldwide trend of increasing distribution of new synthetic psychoactive substances, causing an increase in deaths.

“New psychoactive substances” (abbreviated NPS) is a group of narcotic and psychotropic substances being problematic due to the fact that not all of them belong to the list of prohibited substances and their legal status is not determined in all countries. These new psychoactive substances imitate the most common classic drugs. Based on their action, they can be divided into groups, the most important of which are:

- synthetic cannabinoids that act similarly to hemp products;
- synthetic amphetamines, which act similarly to amphetamine;
- synthetic hallucinogens that act like hallucinogens) [1].

In order to classify a new psychoactive substance as a psychotropic substance in the

process of expert research, it is necessary to establish a chemical structure similar to the structure of the psychotropic substance.

Currently, the production, use and transit of hallucinogenic and psychostimulant synthetic drugs of various natures, which are somewhat new for Azerbaijan, are widespread in European countries.

Synthetic cannabinoids began to be submitted for examination in 2013-2014 in the form of smoking aromatic mixtures in Azerbaijan. A solution of synthetic cannabinoids is absorbed into plants such as chamomile, yarrow and calendula.

Synthetic cannabinoids are white, grey, brown or yellow in color and has the form of small molecule crystals. Many of these compounds are highly soluble in low polar solutions (for example, isooctane), as well as in ethanol, acetonitrile, ethyl acetate, acetone and other organic solvents of medium polarity. Synthetic cannabinoids absorbed into the herbal mass are poorly soluble in water.

Synthetic cannabinoids are used both in pure form and in mixtures intended for smoking. They are added to vegetative matters such as crushed or sliced plant leaves, by soaking or spraying an organic solvent containing one or more synthetic cannabinoids evaporating

easily. Sometimes, powdery crystals collect in the packages as a result of mixing the herbal mass with the drug in powder form. [2].

The mixtures are packaged in 5x7.5 cm bags of 3 g. Spiced products are smoked like cannabis and have varying degrees of flammability depending on the mixture of synthetic cannabinoids they contain. The effects vary individually depending on the user. It typically produces relaxation, euphoria, creative thoughts, enhanced musical senses, increased alertness, muscle relaxation, pain relief, and appetite stimulating effects. Meanwhile, it exerts a negative effect on a person, creating a feeling of anxiety, rapid heartbeat, nausea, muscle spasms and cramps, hallucinogenic and psychostimulant effects.



The most common method of widespread distribution of new synthetic psychoactive substances among young people is their sale on the Internet. This product can be purchased without any age restrictions, which contributes to the growth of popularity. [3]

Synthetic cannabinoid compounds belonging to the group of aminoalkylindoles are most common in herbal smoking mixtures. Synthetic cannabinoids included in this group are easier to synthesize than synthetic cannabinoids included in other groups and they are obtained outside of laboratory conditions, using inexpensive chemicals and reagents. A series of synthetic cannabinoids belonging to the naphthoylindoles group are found in many mixtures.

Based on their chemical structure, synthetic cannabinoids are grouped as follows:

- Classic cannabinoids: THC, other compounds that are synthetic analogues of these compounds in their structure, included in cannabis, for example HU-210;

- non-classical cannabinoids: cannabicyclohexanol, CP-55,940, CP-47,497 (C6 homologues), CP-47,497 (C6 homologues);

- hybrid cannabinoids: compounds with classical and non-classical cannabinoid structures, such as AM-4030.

- aminoalkylindoles: they can be divided into the following groups:

- 1) naphthoylindoles (JWH-015, JWH-018, JWH-081, JWH-122, JWH-200, JWH-210, JWH-073, JWH-398);

- 2) phenylacetylindoles (JWH-250, JWH-251);

- 3) benzoylindole (AM-694, RSC-4 butyl homologue);

- 4) naphthyl-methylindoles (JWH-184)

- 5) cyclopropylindoles (UR-144, XLR-11))

- 6) adamantoylindoles (AV-001, AM-1248)

- 7) indole carboxamides (APICA, STS-135)

- eicosanoids: anandamide (AEA) and their synthetic endocannabinoid analogs such as methanandamide (AM-356).

- diaryl pyrazole (e.g., rimonabant), naphthoylpyrrole (JWH-307), naphthylmethylindene (JWH-176) and indazole carboxamide (Apinaca) [4].

Our country pays special attention to the fight against drug addiction. Thus, the “2019-2024 State Program on combating illegal trafficking of narcotics, psychotropic substances and their precursors and drug addiction” was approved and adopted by Decree dated July 22, 2019 of the President of the Republic of Azerbaijan. Monitoring the implementation of the State Program approved by this order and coordination with the relevant authorities of work during its implementation is entrusted to the State Commission on Combating Drug Abuse and Illicit Trafficking in Drugs.

This Program also provides for strengthening the material and technical base of judicial investigative bodies, including expert institutions

whose tasks are conducting research on physical evidence and providing opinions on specific criminal cases. Laboratories studying narcotic drugs and psychotropic substances at the Forensic Science Center of the Ministry of Justice are equipped with modern equipment allowing them to study a wide range of narcotic drugs and psychotropic substances and solution of various problems related to the investigation of cases of illegal trafficking of these drugs and substances.

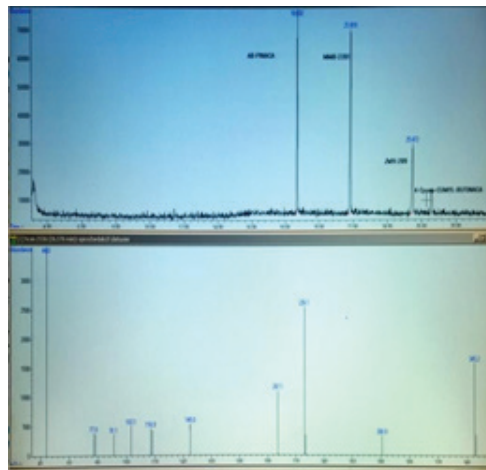
One of these modern highly sensitive instruments is a gas chromatograph-mass spectrometer. This device allows to use them for the analysis of complex mixtures of organic substances, including their microquantities. This combination of two methods allows to overcome the disadvantages of each of them, while maintaining all their advantages, including high separating ability, high sensitivity, and information content) [5].

In the case of gas chromatography-mass spectrometric research of narcotic drugs and psychotropic substances, the obtained information is chromatograms recorded by the total ion current of the mass spectrometric detector and a set of mass spectra recorded at any point of the chromatographic peaks.

Using the database available in the device, peak identification is carried out by retention time and mass spectra. The database (library) of this device is periodically updated; now the number of mass spectra has increased to

830.000. With the help of the library, it was

possible to detect new psychoactive substances that were submitted for examination. Recently, research has identified substances such as 5F-APINACA (5F-AKB-48), ADB-CHMINACA (MAB-CHMINACA), JWH-018, AB-PINACA, MDMB-4en-PINACA, 5CL-ADB-A.



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SUMMARY

The article deals the illicit trafficking of new psychoactive substances, the chemical structure of synthetic cannabinoids, their legal status, and the use of special knowledge in the investigation of crimes related to the illicit trafficking of narcotic drugs and psychotropic substances.

SİĞARA AROMATİK KARIŞIMLARIN UZMAN ADLİ ARAŞTIRMA

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ÖZET

Makalede yeni psikoaktif maddelerin yasa dışı ticareti, sentetik kanabinoidlerin kimyasal yapısı, yasal statüleri ve narkotik uyuşturucu ve psikotrop maddelerin yasa dışı ticaretine ilişkin suçların soruşturulmasında özel bilgilerin kullanımı ele alınmaktadır.