THE STUDY OF ESTERS CHROMATOGRAPHY-MASS SPECTROMETRY OF ABSOLUTE ETHANOL EXTRACT OF THE CENTRAL ASIAN MINT PLANT (LAMIACEAE).

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Annotation: The chemical composition of ethanol mint extract was studied using chromatography-mass spectrometry. 46 compounds were identified, for which mass spectra and structural formulas were obtained, the quantitative content of the latter was determined, and the structural and group composition of the extract was calculated. The basis of the extract is alcohols with the dominance of diatomic; ketones, aldehydes, esters and esters.
Key words: mint, ethanol extract, chromatography-mass spectrometry, structural formulas, hydrocarbons, alcohols, carboxylic acids, esters and esters, lactones.

INTRODUCTION

Essential oils are considered volatile substances, and there are 2,500 tons of essential oils in the world. Their 650 species grow in Uzbekistan.

About 1000 components have been isolated from essential oils, which are considered hydrocarbons, alcohols, acids, esters and esters, lactones and other chemically active compounds. essential oils are collected in flowers, fruits, leaves, motherwort, sometimes in the roots and in the pubescent part of the plant. Such plants include basil, ziziphora, turaikhan, valerian, sage, dill, coriander, mint and other herbs.

Antipruritic, bactericidal, antispasmodic, is a part of sedatives and other medicines. They use them as a source of obtaining aromatic products in an industrial form.

METHOD AND RESULTS

The purpose of the study is a detailed study of the structural organization of compounds that determine the chemical composition of the organic substance mint, using the example of its ethanol extract, using chromatography–mass spectrometry, expanding the set of individual compounds, in addition to those known in the scientific literature, to calculate the structural and group composition of the extract, in order to determine the quantitative ratio of various groups of components, to obtain their mass spectra and structural formulas; to make an assumption about the direction of the pharmacological action of mint preparations, taking into account the peculiarities of the structure of compounds of its organic matter. Medicinal raw materials were collected leaves after mint flowering. The chemical composition of mint leaves is determined by the content of mucus, the basis of which is determined by the high-molecular polysaccharide mannan, hydrolyzed to mannose, as well as dextrins, starch, protein substances, bitterness, pentosans, methylpentosans, sugars, essential oil, mineral salts [1-10]. A decoction of peppermint leaves helps regulate blood pressure. Another useful property is counteraction to fermentation processes in the intestine, as well as stimulation of peristalsis.

THE EXPERIMENTAL PART

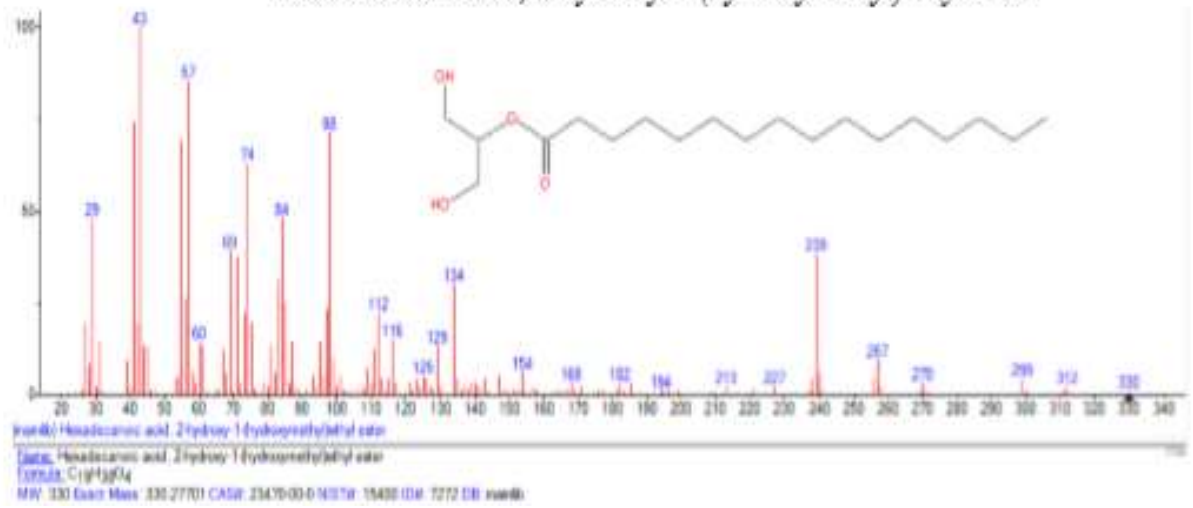
Due to its pronounced antiseptic effect, it is actively used in various branches of medicine and even cooking. This effect is justified by the content of essential oils that inhibit spore-forming

bacteria, for example, Staphylococcus aureus. [1-20]. The object of the study was an ethanol extract of mint leaves obtained by exhaustive extraction of raw materials with ethanol with a mass of 95% in a Scraper apparatus. The extract was released from ethanol in a vacuum rotary evaporator model RE-52AA Rotary Evaporator, the residue was weighed and its chemical composition was studied by chromatography-mass spectrometry.

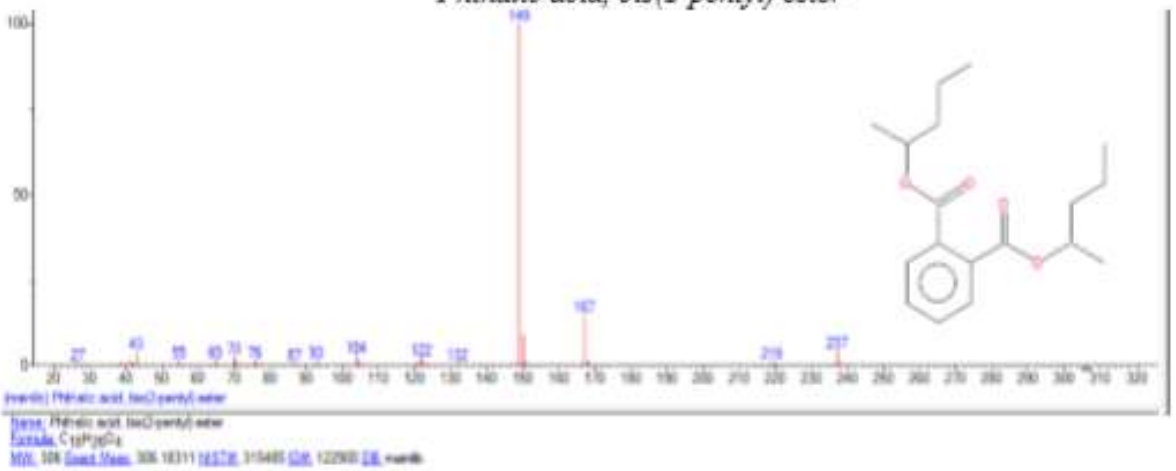
Hexanoic acid, 2-oxo-, methyl ester, 2-Methylbutanoic anhydride, 2-Butenedioic acid, 2-methyl-, (E)-, Pentanedioic acid, 2,2-dimethyl-, bis(1-methylpropyl) ester, Carbamic acid are the basis of the structural organization of the compounds of ethanol extract of various nature, 2-(dimethylamino)ethyl ester, Phthalic acid, bis(2-pentyl) ester.

Carbamic acid, 2-(dimethylamino)ethyl ester

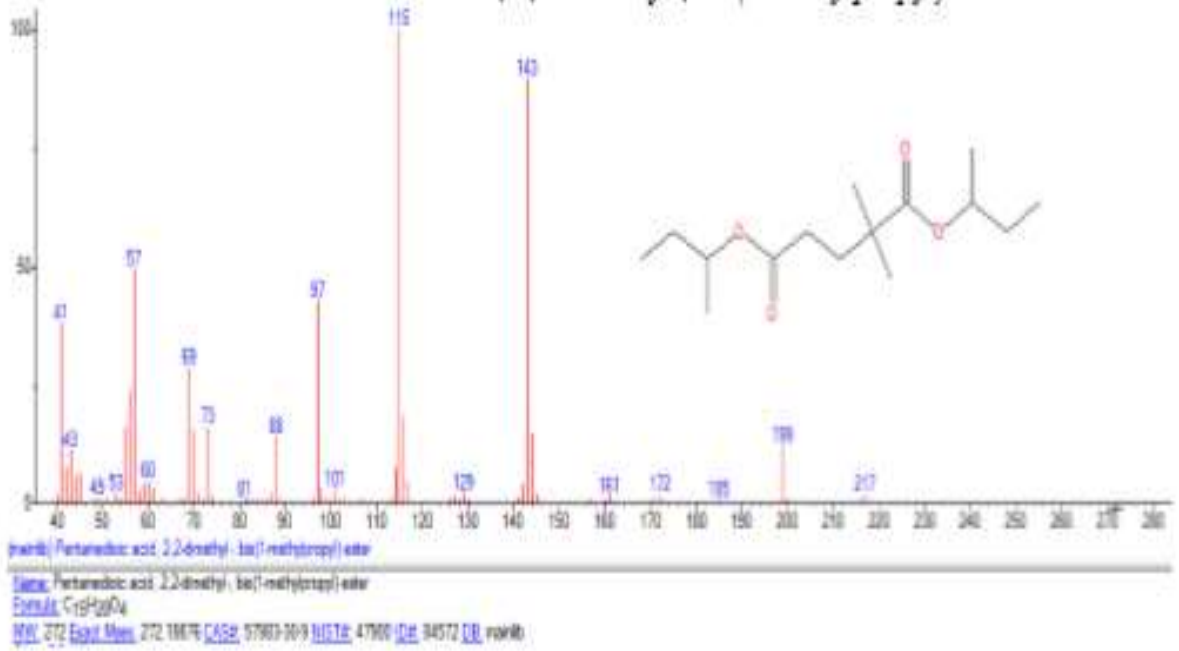
Hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl)ethyl ester



Phthalic acid, bis(2-pentyl) ester

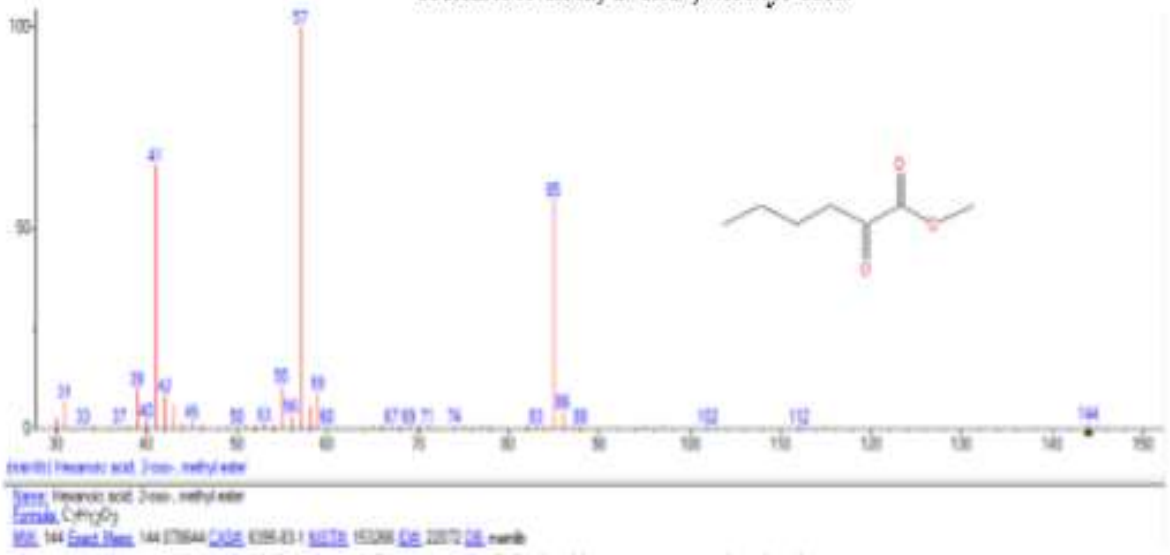


Pentanedioic acid, 2,2-dimethyl-, bis(1-methylpropyl) ester



2-Butenedioic acid, 2-methyl-, (E)-

Hexanoic acid, 2-oxo-, methyl ester



CONCLUSION

For the first time, the chemical composition of the organic substance of Asian mint crendium was studied in detail by chromatography-mass spectrometry, which made it possible to identify 46 individual compounds in its ethanol extract, for which the quantitative content was determined, mass spectra and structural formulas were obtained. The features of the structural organization of compounds, which include fragments of furan, piran, bi- and tricyclans, arenes substituted with aldehyde, ketone, alcohol, simple and complex ether functional groups, have been established. The proportion of nitrogen- and sulfur-containing compounds of different nature is significant, there are practically no phenols and glycosides. Steroid compounds are represented by derivatives of cyclopentanoperhydrophenanthrene with alcohol and ketone groups. Some conclusions are made about the essential role of furan, piran derivatives, as well as nitrogen- and sulfur-containing structures in the formation of the direction of pharmacological action of preparations based on mint.

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