PHARMACY SECTION

COMPARATIVE STUDY OF EXTRACTION TECHNIQUES FOR *CYNARA SCOLYMUS* L. CULTIVATED IN THE REPUBLIC OF MOLDOVA

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Introduction: Artichoke *Cynara scolymus* L. is a plant native to the Mediterranean basin with a long folk history in treating many liver diseases was introduced and adapted to specific climatic conditions of the Republic of Moldova.

Aim: This study aimed to analyze artichoke leaves extraction to identify its contents and to optimize conventional extraction of biologically active compounds various extraction techniques, solvent ratio were used.

Materials and methods: The dry leaves of *C. scolymus* L.were provided from the Centre for the Cultivation of Medicinal plants of the State Medical and Pharmaceutical University "Nicolae Testemițanu". The powdered leaves were subjected to extraction by Soxhlet extraction, maceration and percolation with ethanol (35, 70 and 90 %) and absolute methanol, using several sampling techniques multiple stage extraction, Squibb's and Bosin's exhaustive extraction. The extracts were further subjected to phytochemical tests using standard procedures.

Rezults: The tested ethanol plant extracts contained appreciable amounts of flavonoids. The highest flavonoids yield were exhibited in extracts with ethanol 70% as solvent: artichoke tincture (1:5) - (1,38%); fluid extract (1:2) – (0.77%). Generally higher total flavonoids content were obtained using aqueous (2,06 %) and methanol solvents (5,62%), as compared to the respective ethanol solvents.

Conclusions: The results of this study showed that the aqueous and methanol extracts can be used as raw materials for artichoke dry extract obtain. The Bosin percolation with ethanol 70% solvent was the suitable method for reaching fluid extracts with the highest yield of the flavonoids content.

Keywords: Artichoke, extraction, percolation, flavonoids.

SYNTHESIS AND ANTIOXIDANT POTENTIAL EVALUATION OF SOME NEW THIAZOLIDINE-4-ONE DERIVATIVES

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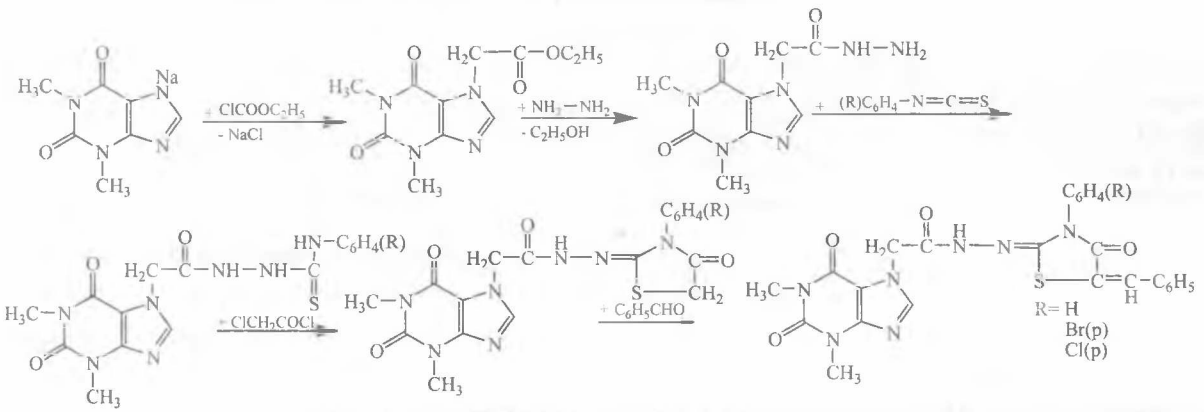
Introduction: Diabetes mellitus (DM) is a chronic metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. It is a major and growing threat to global public health. It is estimated that more than 285 million people worldwide have DM and according to WHO statistics, in 2025 the number of those affected by this disease will have risen to over 380 million. There are two main categories of this disease. Type 1, diabetes mellitus (T1DM), also called insulin-dependent diabetes mellitus and Type 2, diabetes mellitus (T2DM), the noninsulin dependent diabetes mellitus.

Type 2 is far more common and it is characterized by disorders in insulin secretion and insulin resistance. This type of disease accounts for 90 to 95% of all diabetic patients. Diabetes claims four million lives every year and it is a leading cause of blindness, kidney failure, heart attack, stroke and amputation.

Motivation and objectives: The classical therapy of the T2DM mellitus has four categories of pharmacological agents: sulfonylureas and glinides, biguanides, thiazolidinediones and alpha-glucosidase inhibitors. In the development and progression of diabetes and its complications, it is generally accepted that the increased oxidative stress plays a key role too. Diabetes is usually accompanied by an increased production of free radicals or impaired antioxidant defences. The aim and the objectives of this study is synthesis and antioxidant potential evaluation of new benzyliden-thiazolidine-4-one derivatives as potential antidiabetic drugs.

Materials and methods: Benzylidine-thiazolidin-4-one derivatives with xanthine structure were obtained in several steps. Starting from 1,3-dimethyl-xanthine by reaction with chloracetyl chloride the corresponding ester was obtained, that with hydrazine hydrate leads to the hydrazide appropriate. This intermediary by reaction with aryl isothiocyanates (phenyl-, 4-chloro-phenyl- and 4-bromo-phenyl isothiocyanate) lead to the thiosemicarbazides that are cyclised with chloracethyl chloride. In the last step the obtained thiazolidine-4-ones were condensed with benzaldehyde. The antioxidant potential of the compounds was evaluated using phosphomolybdenum method.



Results: By chemical modulation of the 1,3-dimethyl-xanthine at nitrogen from 7 position, new thiazolidine-4-ones and benzylidene-thiazolidine-4-ones were synthesized. The intermediary and final compounds were purified by recrystalization and flash chromatography. In the IR spectra all functional groups were found which is an argument to confirm their structure.

Conclusions: Starting from 1,3-dimethyl-xanthine new thiazolidine-4-one derivatives with xanthine structure were obtained. The compounds were physico-chemical characterized and their structure was confirmed by IR spectroscopy. The antioxidant potential was also evaluated.

Keywords: xanthine, thiazolidine-2-one, antioxidant potential.

PHARMACY CUSTOMERS' CONFIDENCE IN PHYTOTHERAPY

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