Introduction. According to the bibliographic data, in the aerial parts of the *B. incana* L. species, there are various chemical compounds: apigenin, luteolin dihidroquercetin, gallic acid, neochlorogenic acid, due to which the plant material possesses antibacterial, spasmolytic and hypotensive properties. The plant is toxic due to its alkaloid content.
Aim of the study. Spectrophotometric determination of total phenolic and flavonoid content in plant materials *B. incanae herba* and *B. incanae radices*.
Materials and methods. Plant materials were collected from spontaneous flora in different periods (june, september, november). Dosage of total flavonoid and polyphenol was performed by the spectrophotometric method, using 70% ethyl alcohol as solvent. Optical density was measured at *Metertech* UV / VIS SP 8001 spectrophotometer at wavelengths 400 and 760 nm.
Results. The total phenolic contents (TPC) of hydroetanolic extracts of sp. *B. incana* L. were determined according to the *Folin–Ciocalteu* procedure and it were expressed as gallic acid equivalents; flavonoid contents were expressed as luteolin equivalents. Extracts from the aerial parts had higher total phenol and flavonoid contents than roots extracts. The highest level of total flavonoid content was determined in the aerial parts collected in june (0,30%), followed by the plant material collected in september (0,273%) and then in november (0,16%). The major content of flavonoids in roots was found in plant material collected in september (0,11%), followed by november (0,03%) and then in june (0,01%). The TPC was found to be the highest in aerial parts collected in june (8,02%), followed by september (6,80%) and november (5,74%). In the case of roots of sp. *B. incana* L., the highest level of TPC was found in samples collected in september (4,80%), followed in june (2,77%) and then in november (2,54%).
Conclusions. The significant diferences in total phenolic content were found between aerial parts and roots of sp. *B. incana* L. The lowest flavoids and phenol level were determined in roots. It was proved that the collection period of plant materials influence the quantitative content of the phenolic compounds.
Key words: *Berteroa incana*, polyphenols, flavonoids.

428. HOMEOPATHIC PRODUCTS CONTAINING ALKALOIDS

Author: **Elena Pogornila**
Scientific adviser: Maria Cojocaru-Toma, PhD, associate professor, Department of Pharmacognosy and Pharmaceutical Botany, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Alkaloids are one of the largest groups of secondary metabolites in plants, which have basic nitrogen-containing heterocyclic compounds, which in physiological doses have therapeuthical effects on the body and in high doses are toxic, this is why there are many products with alkaloids in homeopathic medicinal products. Some practitioners claim that homeopathy works by stimulating the body to heal itself.
Aim of the study. Evaluation of medicinal plants and vegetal products containing alkaloids (pyrrolizidine, tropane, quinolizidine, isoquinoline, nicotine, indole, acyclic) and their homeopathic medicinal products.
Materials and methods. The analysis of scientific literature regarding to the medicinal plants containing alkaloids using the databases: *eLibrary*, *PubMed*, *ResearchGate* (20 sources). It was evaluated vegetal products and their homeopathic medicinal products with alkaloids following the State Nomenclature of Medicines from Republic of Moldova.

Results. We mention that homeopathy is a concept for the manufacture and use of various highly diluted products to treat diseases, which was created in 1796 by Samuel Hahnemann. His doctrine was based on 'like cures like', whereby a substance that causes a symptom is used to treat the same symptom in illness. A second central principle is the 'law of infinitesimals', which involves a process of serial dilution and shaking that is asserted to increase potency. According to State Nomenclature of Medicines, the homeopathic pharmaceutical forms are presented in the top for tropane alkaloids: *Belladonnae folia* (Dentokind, Guna Dermo, Bronhalis Hell, Tonsilotren); followed by indole alkaloids: *Strichni semina* (Eubioflor, Guna Addict, Guna Bowel, Guna Digest, Nux-Vomica, Mucosa compositum) and isoquinoline alkaloids: *Berberidis folia* (Discus Compositum, Reneel, Guna Diur) and *Chelidonii herba* (Hepeel, Hepar Compositum, Guna Addict). Pyrrolizidene, quinolizidine and acyclic alkaloids are presented with a smaller number of homeopathic products that those with indole alkaloids.
Conclusions. Alkaloids have approximately 50 homeopathic pharmaceutical products after State Nomenclature of Medicines from Republic of Moldova, mostly in tablets, oral and injectable solutions.
Key words: alkaloids, homeopathic medicinal products.

429. ANTIOXIDANT NANOPARTICLES FOR PATHOLOGICAL ANGIOGENESIS INHIBITION: OBTAINING AND IN VIVO CAM MODEL EVALUATION

Author: **Adrian Duncă**
Scientific advisers: Oana-Maria Dragostin, PhD, Associate professor, Elena-Lăcrămioara Lisă, PhD, Associate professor, *Dunarea de Jos* University of Galati, Faculty of Medicine and Pharmacy

Introduction. With an increasing incidence among young people, cancer is a disease that affects millions of people worldwide. Lately, many studies have been conducted to investigate the connection between antioxidants and pathological angiogenesis. In this context, the use of antioxidants in the form of nanoparticles could improve the efficiency of this therapy due to specific surface area of nanostructures, thereby ensuring a better contact with cells which would increase the chances of pathological angiogenesis inhibition.
Aim of the study. In addition to the existing results, the purpose of the present work is to develop new nanoparticles based on chitosan low molecular weight derivatives for cancer therapy, taking into account not only their role as carriers but their action itself: the antioxidant potential which is benefical in inhibiting angiogenesis, as discussed above.
Materials and methods. As a continuation of previous studies, carried out on chitosan, this paper purpose has as starting point the use of four previously obtained chitosan derivatives, note here with CLA, CLB, CLC and CLD, to obtain innovative nanoparticles formulations by ionic reticulation using as cross-linking agent sodium tri-polyphosphate (STPP). The infrared measurements were acquired with a Bruker ALPHA FT-IR spectrophotometer, in the spectral region of 4000-500 cm-1. For biological evaluation, in vivo CAM model was used, to assess the antiangiogenetic activity of chitosan derivatives nanoparticles.
Results. In the spectrum of chitosan nanoparticles as well as that of its functionalized derivatives (CLA-CLD), the characteristic bands have been identified. In connection with biological evaluation, all four types of nanoparticles resulted in reduced angiogenesis, but the