



**Chemistry Conference for Young Scientists**  
**Blankenberge, Belgium**

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# **BOOK OF ABSTRACTS**

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## Development of the criteria for standardization of the quality of *Inula helenium* L.

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Rhizomes with roots are the officinal raw material of *Inula helenium* L. Decoctions with the medicinal plant raw material (MPRM) of *I. helenium* exhibit the expectorant, anti-inflammatory, antimicrobial, diuretic, choleric and tonic effects, normalize the motor and secretory function of the gastrointestinal tract.

In the chemical composition of rhizomes and roots of *Inula helenium* L. the main classes of biologically active substances (BAS) – sesquiterpenoids and carbohydrates – glucose, inulin (up to 44 %) have been identified. In addition, the essential oil has been found; it contains a mixture of bicyclic sesquiterpene lactones (SL) – alantolactone, isoalantolactone, dihydroalantolactone, dihydroisoalantolactone. Thus, the peculiarity of the *I. helenium* standardization is identification and the quantitative determination by the main classes of BAS – SL and polysaccharides (PS) affecting the pharmacological activity of medicines on the basis of this MPRM. When performing the comparative analysis of approaches to standardization of the *I. helenium* rhizomes with roots given in the several modern Pharmacopoeias it has been found that none of the monographs contains the methods for identification and the quantitative determination by two classes of BAS – SL and PS. Therefore, development of the modern criteria for standardization of the quality of domestic MPRM is relevant.

Currently, in the pharmacopoeial quality control of MPRM and herbal drugs there is a common procedure for identification by the presence of marker substances, which allow us to unambiguously identify the starting raw material. Based on the research were carried out two methods of identification have been developed by TLC: inulin (after its hydrolysis by two analytical markers – fructose and glucose) and SL (by the analytical marker – alantolactone) in the essential oil obtained by steam distillation from MPRM. To determine the quantitative content of active substances the method of the total PS content has been developed by the gravimetric method, and the quantitative content of SL is controlled by the essential oil content. The spectrophotometric method for the assay of the total amount of SL calculated with reference to alantolactone and the selective method of determining the quantitative content of alantolactone in MPRM by the method of HPLC have been also developed.