To the standardization of dry extract from *Galii veri* herb

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Introduction. Nowadays, a clear trend towards an increase in the number of herbal medicines and the commitment of patients to their use are obvious. For this reason, modern pharmaceutical science faces a need for the search for new medicinal plants among popular ethnomedicinal herbs. The species of *Galium* L. genus are widely used in folk medicine for the treatment of gastrointestinal tract disorders, malignant neoplasms, and bacterial infections [1]. We obtained 70% ethanolic extract from *Galium verum* herb, purified this extract from lipophilic compounds, and in result obtained the dry extract. The extract obtained showed hepatoprotective properties [2] and cytotoxic effect *in vivo* [3]. Previously, we studied the elemental profile of this extract [4], and the aim of the present research was to standardize the dry extract from *G. verum* herb as a promising herbal preparation.

Materials and methods. The dry extract is a dark brown, amorphous, hygroscopic powder of specific smell and bitter taste; the extract is easily soluble in *water R*, moderately soluble in *ethanol (50 and 70 per cent V/V) R*, insoluble in *ethanol (96 per cent V/V) R* and organic solvents.

Currently, we performed the following tests according to pharmacopoeial requirements: Loss on drying, Total ash, Toxic metals, Microbial limits, Assay.

Results and discussion. As a result of our research into standardization of dry extract from *G. verum* herb, the following data were obtained: Loss on drying – maximum 5.0 per cent; Total ash – maximum 9.0 per cent; Toxic metals – maximum 0.01 per cent.

Microbial limits: not more than 10^3 CFU/g for total aerobic microbial count (TAMC) and not more than 10^2 CFU/g for total combined yeasts and molds count (TYMC); absence of *Enterobacteriaceae* (1 g), *Staphylococcus aureus* (1 g) and *Pseudomonas aeruginosa* (1 g).

At this stage of our research, we suggest to quantify phenolic compounds in dry extract from *G. verum* herb, namely hydroxycinnamic acids and flavonoids by differential spectrophotometry. The specifications for the content of phenolic compounds are the following: hydroxycinnamic acids – not less than 9.00%, expressed as chlorogenic acid (on absolutely dry weight); flavonoids – not less than 3.00%, expressed as rutin (on absolutely dry weight).

Conclusions. The dry extract from *Galium verum* herb was first standardized using five pharmacopoeial tests, namely Loss on drying, Total ash, Toxic metals, Microbial limits and Assay (spectrophotometric method). Going forward, we are planning to develop the HPLC method for the quantification of phenolic compounds. In order to develop a comprehensive specification for the dry extract from *G. verum* herb, tests Residual solvents (chloroform), Mycotoxins and Pesticides will be carried out.

References

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