

UDC: 615.014.2:615.015.32:615.453.3:54.061

PREPARATION AND ANALYSIS OF HOMEOPATHIC MEDICINE LILIUM

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Introduction. Homeopathic medicine is a natural pharmaceutical science in which a practitioner seeks to find a substance which would cause in overdose similar symptoms to those a sick person is experiencing. A practitioner takes a detailed history of health, lifestyle, preferences and symptoms and categorizes your illness and your personal type. The homeopath has a large selection of potential remedies, to apply depending on the details on how you provide the homeopath. In recent years detailed databases of systematized diagnosis's and available remedy components have been compiled to allow for the average practitioner to provide a more detailed diagnosis and a highly targeted remedy.

Once attenuated to the desired potency, homeopathic pharmaceuticals can be processed into a variety of dosage forms including: triturate tablets, compressed tablets, medicated tablets, lozenges, capsules, powders, pellets (globules), oral liquids, syrups, ophthalmic solutions, nasal sprays, ointments, creams, gels, injectables and suppositories. The most common dosage forms are tablets, pellets and liquids.

For the future development of homoeopathy, new homoeopathic medications are necessary for creation of normative base for their making and introduction in homoeopathic practice. This remedy may be helpful if a woman is inclined toward rage during PMS, makes other people “walk on eggs,” and is extremely sensitive and irritable: Bowel syndrome, adnexitis; parametritis, endometritis; vaginitis; dysmenorrhoea; intermenstrual pain; climacteric neurosis.

In connection with the search and study of plant raw material there is an actual question for the creation of medicines and further developments of homeopathy. For this reason, it is the perspective of conducting researches on the creation of homoeopathic medicines on the basis of Tiger Lily (*Lilium tigrinum*). [3, 5]

Aim. Development of the technology and analysis of the main homeopathic medicines *Lilium*.

Methods. In our work the retrospective, logical, analytical and standard pharmacopoeian research methods have been used to analyze the data of special literature, preparation and evaluation of qualitative, technological parameters of homeopathic medicines *Lilium*. The basic methods of the investigation of the guidance of Dr. V. Shvabe have been applied also. One of this method is capillar analysis. It is carried out by method of “Plan” depending to guidance of Dr. V. Shvabe. From the filter or chromatography paper of one sort in direction perpendicular to the texture of the paper, cut strips of 2 cm and long approximately 25 cm and suspend in a cylindrical glass vessel, in height about 5 cm and diameter about 3 cm so that the ends of paper strips touch the bottom of the vessel. In a vessel we place 5 ml of the explored basic homeopathic medicine – essence of *Lilium* obtained from fresh all plant. Put the vessel in a moderately warm place and in 24 hours or to the moment, when all liquid has been absorbed, take out strips, dry and explore daily or in the ultraviolet light radiated by a quartz analytical lamp. During research of more high dilutions in place of wide

capillary strips the strips are used with width no more than 2.5 mm. The results of analysis are shown that the at the relative humidity 52 % and the temperature 16⁰C: the height of ascent for essence is 125 mm; upper zone 70 mm is a water transparency zone, reddish-brown; 55 mm – is a light-brown non-transparency zone. The results correspond with standard of guidance of Dr. V. Shvabe. [4] This method can be used for standardization of basic homeopathic medicine *Lilium*.

The preparation of tincture and dilutions *Lilium* is carried out according to State Pharmacopoeia of Ukraine. Homeopathic tincture *Lilium D1* are prepared using method 1a (method is applying for the fresh plant raw material contents more than 70 % of pressed juice, ether oils and without resins and mucus). [1]

To obtain the homeopathic tincture of *Lilium D1*, 10 g of *Lilium θ* essence was weighed on the prescripational balance, placed in a dark glass. On the prescripational balance 40.0 g of ethyl alcohol 45% was weighed and transferred to glass with essence. The glass was covered with a lid, thoroughly shaken 10 times and registered by label. Thus, a homeopathic tincture was obtained, which is 1/10 part of the drug and is the first decimal potency (*D1*).

For the evaluation of the qualitative characteristics of prepared basic medicines *Lilium*, we studied the main groups of biologically active substances in their composition using well-known qualitative reactions.

Development of homeopathic dilutions is carried out according to State Pharmacopoeia of Ukraine by methods 5a and 5b. For the preparation of dilution as a solvent used 45 % ethyl alcohol (*m/m*). As a result, dilutions *D2*, *D3* and *D4* are obtained. [1]

The range of homeopathic medicinal forms is diverse. However, according to results of the investigations, the traditional form in the form of granules is considered traditional in homeopathic practice. It connected with some advantages, including portability, ease of technology, convenient transportation and storage, dosage, long shelf life, etc. [3].

The next stage of our work was the development of the technology of granules *Lilium D3* for using in homeopathic practice in the treatment and prevention of female genital diseases.

At the choosing of the rational dilution index, we take into account the qualified advice of homeopathic physicians and the literature data, according to which the low dilutions are applying for acute inflammatory disease and higher dilutions for chronic.

Since inflammation is characterized by acute flow and requires operative medicinal intervention, the dilution *D3* have been chosen for the technology of granules *Lilium*.

Homoeopathic granules are prepared according to the State Pharmacopoeia of Ukraine by the saturation of sugar granules the necessary homoeopathic dilution. Granules are prepared in classic correlation 1:100 [2].

Before preparing of granules the sanitary preparation of premise was conducted. For the saturating of granules, the special glass bottle was used (it must be in 1.5 times more than volume of granules mass). In this bottle weighed out 150.0 g of sugar granules, added 15 g of ethyl alcohol 60 % (*m/m*). Bottle was closed and shake during 1 minute. Added 1.5 g of *Lilium* tincture *D1* and shake during 10 min by hand from

top to bottom. Granules were poured out by a hill on the parchment paper and dried on air at the temperature $18 \pm 2^\circ\text{C}$ about 60 minutes. [2]

After preparing, some physical, chemical and technological parameters (homogeneity, time of disintegration, fluidity, loss in-bulk at drying, amount of the stickled together granules) were studied using pharmacopoeian methods.

Results. The obtained results indicate the presence of alkaloids, flavonoids, saponins, tannins, carbohydrates, amino acids, iridoids, and mucus in our investigated objects. The main physical-chemical characteristics of the basic homeopathic medicines such as: description, concentration of ethyl alcohol, dry remain and density are represented in table 1.

Table 1

Physical-chemical characteristics of the basic homeopathic medicines *Lilium*

Objects	Description	Concentration of ethyl alcohol /refractive index, %	Dry remain, %	Density, g/cm ³
Essence <i>Lilium</i>	Transparent reddish-brown liquid with a specific spice-sweet and astringent taste (burning from alcohol); mechanical inclusions are absent	44.85	3.5 ± 0.5	0.945 ± 0.005
Tincture <i>Lilium D1</i>	Transparent yellowish-brown liquid with a weak specific odor and spicy and burning taste; mechanical inclusions are absent	44.60	2.0 ± 0.3	0.963 ± 0.004

As we can see, the results of our investigation are satisfactory and corresponded to the normative documentation requirements.

According to the organoleptic analysis, prepared homeopathic dilutions are yellowish or colourless transparent liquids. Some biological active compounds, such as: alkaloids, saponins, flavonoids, tannins, aminoacids, carbohydrates were identified in dilution *D2* and *D3* by well-known reaction of identification.

The obtained granules were with a light yellow color, uniform in color and size, had satisfactory technological properties, namely, the moisture content did not exceed 2%, which allows to predict the stability of this index in storage term. The result of the technological parameters of granules are represented in the table 2. As we can see, the average volatility is 16.51 g/s, which indicates about fluidity of the granules in the bunker, and relatively equal values of the bulk density and volume density allow us to conclude that granules are not able to condense, compress while storing and transporting.

Technological parameters of granules Liliun D3

№	Parameters	Granules Liliun D3
1	Original appearance and homogeneity	homogeneous granules of light -yellowish color
2	Time of granules disintegration, min	3.35±0.30
3	Middle mass of one granule, mg	9.3±0.2
4	Average amount of granules in 1.0 g, pieces	60±2
5	Fluidity, g/s	16.51±0.40
6	Bulk volume, g/sm ³	0.95±0.05
7	Bulk density, g/sm ³	0.94±0.05
8	Loss in mass during drying, %	1.75±0.03
9	Amount of the stickled together granules, %	0.50±0.02

Conclusion.

1. The technology of the basic homeopathic medicines *Lilium* (essence, tincture, dilutions) and granules have been developed in pharmacy conditions.
2. The main physical, chemical and technological parameters of the prepared medicines *Lilium* have been studied and considered.

Literature

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