BULLETIN OF NATIONAL ACADEMY OF SCIENCES
OF THE REPUBLIC OF KAZAKHSTAN
ISSN 1991-3494
Volume 2, Number 366 (2017), 5 – 12

UDC 615.07:615.32:582.923.1:543.544

Ya. Proskurova[1], S. Gubar[1], E. Kotova[2], A. Kotov[2], U. Datkhayev[3]

[1]National university of pharmacy, Ukraine,
[2]Ukrainian scientific pharmacopoeial center for quality of medicines, Ukraine,
[3]Asfendiyarov kazakh national medical university, Almaty, Kazakhstan.
E-mail: Bakonya_mg.1989@mail.ru

DEVELOPMENT OF THE METHOD FOR CENTAURY HERB IDENTIFICATION BY THIN LAYER CHROMATOGRAPHY FOR THE STATE PHARMACOPOEIA OF UKRAINE MONOGRAPH

Abstract. This article describes experimental results of comparing the pharmacopoeia requirements concerning "Identification. TLC" test of Centaury herb on 7 series of raw material. Swertiamarin and rutin were selected as standard samples (marker substances). It is shown that PhEur 8.4 requirements to chromatographic conditions are the most appropriate for the separation of these markers. A new method for Centaury herb BAS identification was developed by the method of TLC after replacement of expensive marker substance swertiamarin by more affordable SPhU CRS Centaury extract, and expensive reagents – ethyl formate by more affordable solvent – ethyl acetate. Harmonization of the SPhU requirements with PhEur 8.4 was carried out to develop national requirements concerning the quality of domestic raw material for the SPhU monograph «Centaury herb».

Keywords: Centaury herb, identification, thin layer chromatography, State Pharmacopoeia of Ukraine.

Common centaury *(Centaurium erythraea Rafn.)* and Centaurium pulchellum *(Centaurium pulchellum (Sw.) Druce)* are typical representatives of domestic medicinal herbal material (MHM) Centaury grass (Centaurii herba); its other species are rare and do not have any commercial value. Therefore, there is a need for standardization of MHM [5-10], which implies, above all, a reasonable choice of criteria for the quality of MHM.

In Ukraine, Centaury is not cultivated, but the need for this kind of material is satisfied by wild plants gathering. The raw material is harvested at the beginning or during the flowering period (July-August), because in this period it is the maximum accumulation of biologically active substances (BAS) which belong to the class of iridoids – sekoiridoide glycosides. Iridoids is a group of monoterpene compounds of herbal origin, which are most often found in the form of glycosides. The main substance of the sekoiridoide glycosides group, presenting in the Centaury herb and causes its pharmacological effect, is swertiamarin [1-4].

The requirements to the quality of Centaury herb are displayed in the monographs of the leading pharmacopoeias: European Pharmacopoeia (PhEur 8.4) monograph «Centaury», German Pharmacopoeia (DAB 10) monograph «Tausendgüldenkraut», British herbal Pharmacopoeia (BHP) monograph «Centaury», and the USSR State Pharmacopoeia (SP XI) article «Herb centaury» [7, 11-13]. Currently, in the State Pharmacopoeia of Ukraine (SPhU) the monograph on the Centaury herb does not exist.

Thin layer chromatography (TLC) method is one of rather sensitive and acceptable methods for identification of Centaury herb in the mentioned monographs [8-10, 14, 15, 18-21]. In SP XI identification of Centaury herb by TLC is not represented [7].