Qualitative and quantitative assays: Flavonoids in the plant are identified by cyanidin reaction and TLC, tannins by the reaction with iron (III) chloride. Total flavonoid content is determined by spectrophotometry at 335 nm and calculated as apigenin. Tannins are titrated with potassium permanganate [10].

Qualitative and quantitative standards: Loss on drying, not more than 8.0%. Ash, not more than 9.0%. Organic matter, not more than 0.5% and mineral matter, not more than 1.0%. Heavy metals, not more than 0.01%. Water-soluble extractive, not less than 32%. Total flavonoid content calculated as apigenin, not less than 3.5%. Tannins, not less than 1.5% [10].

Bioactivities: Hemostatic, antitumor activity, antibacterial [13,14]. Cinaropicrin, apigenin, and apigenin-7-*O*-glycoside have choleretic effect [10].

References:

1. Olziikhutag, N. (Ed). (1983). Latin-Mongolian-Russian Dictionary of Vascular Plants of Mongolia (p. 271). Ulaanbaatar: Press of Mongolian Academy of Sciences.
2. Gubanov, I.A. (1996). Conspectus on Mongolian Flora (vascular plants) (p. 104). Moscow: Valang Press.
3. Malishev, L.I., and Peshkova, G.A. (1979). Flora of Central Siberia (Vol. 2, p. 874). Novosibirsk: Science Printing.
4. Sanchir, Ch., Batkhuu, J., Boldsaikhan, B., and Komatsu, K. (2003). Illustrated Guide of Mongolian Useful Plants. (Vol. 1, p. 53). Ulaanbaatar: Admon Printing.
5. Ligaa, U., Davaasuren, B., and Ninjil, N. (2005). Medicinal Plants of Mongolia Used in Western and Eastern Medicine. (p. 83). Ulaanbaatar: JCK Printing.
6. Yuthok Yonten Gonpo., Four Medical Tantras, VIII-IXth century.
7. Danzanpuntsag., Crystal rosary. XVIIIth century.
8. Boldsaikhan, B. (2004). Encyclopedia of Mongolian Medicinal Plants (p. 123). Ulaanbaatar: Mongolian University of Science and Technology.
9. Khurelchuluun, B., Suran, D., and Zina, C. (2007). Illustrated Guide of Raw Materials Used in Traditional Medicine. (p. 214). Ulaanbaatar: Erkhes Printing.
10. Daariimaa, Kh. (2006). The phytochemical investigaton of *Saussurea amara* (L.) DC. (p. 79, 108). A thesis submitted for the degree of Doctor of Philosophy in Pharmacy. Ulaanbaatar: Health Sciences University of Mongolia.
11. Konovalova, O.A., Rubalka, K.S., and Pimenov, M.G. (1979). Sesquiterpene lactones from *Saussurea amara*. *Khim. Prir. Soedin*. 6, 856.
12. Tsevegsuren, N., Aitzetmuller, K., and Vosmann, K. (1997). Unusual fatty acids in Compositae. γ-Linolenic acid in *Saussurea* spp. seed oils. *J. High Resoln. Chromatogr*. 20, 315.
13. Sokolov, P.D. *et al*. (1993). Plants Review of USSR: Family Asteraceae. (p. 165). Leningrad: Science Printing.
14. Modonova, L.L., Semenov, A.A., Japova, Ts., Ivanova, N.D., Djanarova, A.K., Fedoseev, A.P., Kirdei, E.G., and Malcova, T.I. (1986). Bioactivity of *Saussurea amara*. *Chem.-Pharm. J*. 20, 1472.