

POSTER PRESENTATIONS

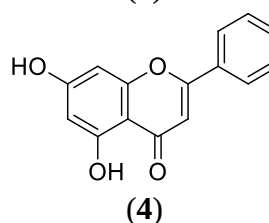
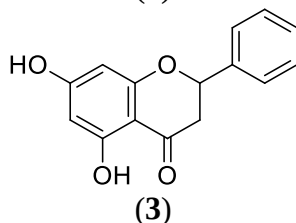
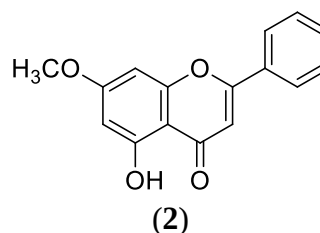
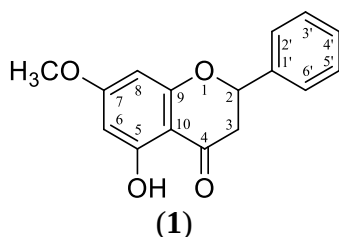
TECHNOLOGY OF AN ANTI-INFLAMMATORY AND WOUND-HEALING FLAVONOID PHYTOFILM

**A.T. Boldysh, S.Ye. Yesengali, D.L. Savchenko, V.V. Polyakov,
S.M. Adekenov**

*JSC “Research and Production Center “Phytochemistry”, 100009, Karaganda,
Republic of Kazakhstan, e-mail: info@phyto.kz*

Biologically active polyphenolic compounds of the buds of balsam poplar (*Populus balsamifera* L.) are of interest for the development of new pharmaceutical substances and of finished dosage forms based on them. This report describes the development of a flavonoid phytofilm based on the total flavonoids of balsam poplar buds and polyvinyl alcohol (PVA), intended for use in wound and burn lesions of the skin.

The phytofilm was prepared on a PVA base using glycerol as a plasticizer and a flavonoid substance isolated from the buds of *Populus balsamifera* L. To recover the target substances, the poplar buds were extracted with ethanol at room temperature. The extract obtained was separated and purified by column chromatography, which afforded pinostrobin (1), tectochrysin (2), pinocembrin (3) and chrysin (4).



A technological method was developed for the preparation of the phytofilms, comprising the preparation of a polymer base into which the flavonoid substance was introduced and heated with stirring; the resulting mass was then applied to glass substrates and dried at room temperature. The samples had a homogeneous structure, a lemon-yellow colour and a thickness of 0.05–0.07 mm.

The study of moisture absorption showed that the phytofilms were characterized by uniform water uptake. In the study of adhesion, it was established that the detachment force of the phytofilm was $1011.85 \text{ N} \times 10^{-3}$. Studies of the acute and chronic toxicity of the phytofilm sample demonstrated its relatively low toxicity.

Thus, a technological method has been developed for the production of phytofilms that makes it possible to obtain a polymeric flavonoid phytofilm based on the total flavonoids of the buds of balsam poplar *Populus balsamifera* L. and PVA.