

**NEPHROPROTECTIVE AND ANTIFIBROTIC ACTIVITY OF THE EXTRACT COMPOSITION  
FROM THE AERIAL PARTS OF *AGRIMONIA EUPATORIA* (ROSACEAE), *BIDENS TRIPARTITA* AND  
*SOLIDAGO CANADENSIS* (ASTERACEAE) ON TOXIC NEPHROPATHY**

© K. V. Sivak,<sup>\*</sup> <sup>1</sup>E. E. Lesiovskaya,<sup>2</sup> M. G. Ozhigova,<sup>3</sup> Hakim Al Mabruki,<sup>3</sup> E. K. Novikova<sup>3</sup>

<sup>1</sup> Ministry of Healthcare of Russian Federation Research Institute of Influenza, St.  
Petersburg, Russia

<sup>2</sup> I. M. Sechenov First Moscow State Medical University, Moscow, Russia

<sup>3</sup> Saint-Petersburg State Chemical-Pharmaceutical Academy, St. Petersburg, Russia

\* E-mail: kvsivak@gmail.com

**SUMMARY**

The aim of this study was to develop a composition of extracts for medical treatment and relapse prevention of renal diseases, including iatrogenic poisoning. The objectives of the study included: (i) literature search for promising medicinal plants; (ii) the creation of a composite formulation in the form of granulate of extracts from pharmacologically different plants such as *Agrimonia eupatoria* L., *Bidens tripartita* L. and *Solidago canadensis* L.; (iii) screening studies to evaluate primary pharmacodynamics of selected compositions of extracts; (iv) an expanded study of nephropathology on several models (cisplatin-induced renal tubulointerstitial fibrosis and calcium oxalate crystalline nephropathy). The composition of extracts provided the nephroprotective, anti-hypoxic, antifibrotic, antioxidant, membrane-protective and diuretic effect on the kidneys of animals with toxic nephropathy. The efficacy of this composition of extracts was comparable or superior to the reference drugs. Thus, the results of the studies on experimental models of renal pathology warrant further evaluation of this composition of extracts in a clinical trial.

Key words: composition of extracts, *Agrimonia eupatoria*, *Bidens tripartita*, *Solidago canadensis*, renal pathology, primary pharmacodynamic studies.