

Third Laureate Applied Research

26th Khwarizmi International Award (KIA)



- **Research Work Title:** Basic approaches for pharmacological correction of liver pathology and associated extrahepatic diseases
- **Researcher:** Prof. Vyacheslav U. Buko
- **Nationality:** Belarus
- **Date of Birth:** 1942
- **Field:** Biochemistry, pharmacology
- **Position:** Head, Division of Biochemical Pharmacology
- **Scientific Affiliation:** Institute of Biochemistry, National Academy of Sciences

● Abstract:

The aim of the presented research work is to substantiate modern approaches in treatment of experimental liver pathology and diseases either stipulated by liver abnormalities (atherosclerosis) or caused by these abnormalities (diabetes, metabolic syndrome, and obesity). We proposed two original hypotheses: prostaglandin deficiency in alcoholic liver damage and antioxidant defense by non-structural lipids.

We investigated and described the following phenomena:

- molecular mechanisms of liver damage by aldehydes;
- hepatoprotective, anti-diabetic and anti-fibrotic properties of prostaglandins;
- the role of nitric oxide in liver fibrosis;
- ursodeoxycholic acid: mechanisms of protection in diabetes and liver pathology;
- mechanisms of anti-atherogenic activities of estrogen and testosterone derivatives;
- pharmacological mechanisms of genistein-8-C-glycoside, panthenol, melatonin, and statins in different experimental pathology.

Therefore, this research forms a fundamental basis for pharmacological correction of experimental liver pathology and extrahepatic diseases by using known medicines for new prescription and for creation of new drugs.



● Biography:

Presently, Prof. Vyacheslav Buko is the Head of the Department of Biochemical and Pharmacology at the Institute of Biochemistry (in 2012-2006 – Institute of Pharmacology and Biochemistry), National Academy of Sciences. He studied medicine at Grodno Medical University (1964 – 1958) and worked as physician in clinics of Brest (Belarus). Since 1971 he works at the Institute of Biochemistry in Grodno. Doctoral thesis in 1976, habilitation – in 1990, full Professor since 2000. His research fields are molecular mechanisms and pharmacological correction of liver diseases and extrahepatic pathology; biochemistry of lipids, oxidative stress, microsomes- and mitochondria-related processes. Prof. V. Buko collaborates with Belarusian pharmaceutical industry. He is a member of the European Association on the Study of the Liver, the European (ESBRA) and International Societies on Biochemical Research of Alcoholism, symposium organizer and chairman at a number of ESBRA Congresses. Prof. V. Buko collaborates with a number of European universities and industries.

