

NATIONAL ACADEMY OF SCIENCES OF UKRAINE
Palladin Institute of Biochemistry

BIOTECHNOLOGIA ACTA

Vol. 14, No 4, 2021

BIMONTHLY

Editorial Staff

Serhiy Komisarenko	Editor-in-Chief; Professor, Dr. Sci., Academician; Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine, Kyiv
Rostislav Stoika	Deputy Editor-in-Chief; Dr. Sci. in Biology, Professor, corresponding member of the National Academy of Sciences of Ukraine, Institute of Cell Biology of the National Academy of Sciences of Ukraine, Lviv
Denis Kolybo	Deputy Editor-in-Chief; Dr. Sci. in Biology, Professor, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine
Tatiana Borysova	Dr. Sci. in Biology, Professor, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine
Leonid Buchatskiy	Dr. Sci. in Biology, Professor, Taras Shevchenko National University of Kyiv, Ukraine
Liudmila Drobot	Dr. Sci. in Biology, Professor, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine
Serhiy Dzyadevych	Dr. Sci. in Biology, Professor, Institute of Molecular Biology and Genetics of the National Academy of Sciences of Ukraine
Valeriy Filonenko	Dr. Sci. in Biology, Professor, Institute of Molecular Biology and Genetics of the National Academy of Sciences of Ukraine
Olexander Galkin	Dr. Sci. in Biology, Professor, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine
Mykola Kuchuk	Dr. Sci. in Biology, Professor, Institute of Cell Biology and Genetic Engineering of the National Academy of Sciences of Ukraine
Leonid Levandovskiy	Dr. of Engineering Sci., Professor, Kyiv National University of Trade and Economics, Ukraine
Lyubov Lukash	Dr. Sci. in Biology, Professor, Institute of Molecular Biology and Genetics of the National Academy of Sciences of Ukraine
Olga Matyshevska	Dr. Sci. in Biology, Professor, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine
Olexander Minchenko	Dr. Sci. in Biology, Professor, corresponding member of the National Academy of Sciences of Ukraine, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine
Olexander Obodovich	Dr. of Engineering Sci., Institute of Technical Thermophysics of the National Academy of Sciences of Ukraine
Serhiy Oliinichuk	Dr. of Engineering Sci., SO "Institute of Food Resources" of the Ukrainian Academy of Agrarian Sciences, Ukraine
Yuriy Prylutskyy	Dr. Sci. in Physical and Mathematical Sciences, Professor, Taras Shevchenko National University of Kyiv, Ukraine
Olexiy Soldatkin	Dr. Sci. in Biology, Professor, Academician of the National Academy of Sciences of Ukraine, Institute of Molecular Biology and Genetics of the National Academy of Sciences of Ukraine
Mykola Spivak	PhD, Professor, corresponding member of the National Academy of Sciences of Ukraine, Institute of Microbiology and Virology of the National Academy of Sciences of Ukraine
Tetiana Todosiichuk	Dr. of Engineering Sci., National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine
Artem Tykhomyrov	Scientific Editor, PhD, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine
Alyona Vinogradova	Executive Editor, Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine

Editorial Council

Ahmad Ali (India), Yaroslav Blume (Ukraine), Judit Csabai (Hungary), Koula Doukani (Algeria), Mehmet Gokhan Halici (Turkey), Michailo Honchar (Ukraine), Vitaliy Kordium (Ukraine), Giorgi Kvesitadze (Georgia), Hristo Najdenski (Bulgaria), Valentyn Pidgors'kyj (Ukraine), Jacek Piosik (Poland), Isaak Rashal (Latvia), Uwe Ritter (Germany), Nazim Şekeroğlu (Turkey), Andriy Sibirnyi (Ukraine), Volodymyr Sidorov (USA), Volodymyr Shirobokov (Ukraine), Ivan Simeonov (Bulgaria), Marina Spinu (Romania), Anthony Turner (United Kingdom), Alexei Yegorov (Russian Federation), Anna Yelskaya (Ukraine), Dmitry Zhernossekov (Republic of Belarus)

Editorial address:

Palladin Institute of Biochemistry of the NAS of Ukraine, 9 Leontovich Street, Kyiv, 01601, Ukraine;
Tel.: +3 8 044-235-14-72; *E-mail*: biotech@biochem.kiev.ua; *Web-site*: www.biotechnology.kiev.ua

According to the resolution of the Presidium of the National Academy of Sciences of Ukraine from 27.05.2009 №1-05 / 2 as amended on 25.04.2013 number 463 Biotechnologia Acta has been included in High Attestation Certification Commission list of Ukraine for publishing dissertations on specialties "Biology" and "Technology".

Certificate of registration of print media KB series №19650-9450IIP on 01.30.2013

Literary editor — H. Shevchenko; Computer-aided makeup — O. Melezhyk

Authorized for printing 30.08.2021, Format — 210×297. Paper 115 g/m². Gaqrn. SchoolBookC. Print — digital. Sheets 11.6. An edition of 100 copies. Order 4.6. Make-up page is done in Palladin Institute of Biochemistry of the National Academy of Sciences of Ukraine. Print — O. Moskalenko FOP