

Why do we need a new open access journal devoted to microbiology?

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The infectious diseases of humans and animals are major problem for modern public health care and veterinary medicine. According to the WHO, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and tuberculosis are among the main causes of mortality in the world along with systemic diseases such as ischemic heart disease, stroke, and chronic obstructive pulmonary disease (COPD) (<http://www.who.int/mediacentre/factsheets/fs310/en/>).

In the past 13 years, several infectious agents have caused a number of high mortality outbreaks among the human population. In 2002, we witnessed the sudden appearance and rapid spread through China, Europe, and the US of a new infectious disease called severe acute respiratory syndrome (SARS), which is also known as “atypical pneumonia”. The unprecedented collaboration between scientists from different countries combined state-of-the-art technology of the leading world laboratories and knowledge of the best experts in this field, thereby enabling scientists to identify the pathogen, to genotype it, and to develop reliable analytical test systems for virus identification. An inadequate or untimely response by at least one of the countries involved in this collaboration could put the safety of all of humankind under threat. Previously unrecognized virus from the Coronaviridae family – the pathogen that causes SARS – was identified within several weeks after the beginning of the outbreak, which allowed scientists to prevent the further spreading of this virus almost immediately.

In 2012, an outbreak of a similar disease caused by another dangerous virus of Coronaviridae family – Middle East Respiratory Syndrome (MERS) – emerged in South Korea. Currently, the MERS virus is found in Europe and Northern Africa where approximately 1,500 people are infected with it. The mortality rate of the patients infected with MERS can reach up to 30% [1].

The cases of human infections by the highly pathogenic avian influenza viruses of H5N1 and H7N9 subtypes are routinely observed starting from 2006. The mortality rate of humans infected with these viruses can reach up to 50% [2]. The wide spreading of the Ebola virus in Equatorial and Western Africa has been of great public concern since 2013. The Ebola virus causes an infection leading to hemorrhagic fever with the mortality rate of 79% [3].

The zoonotic nature of all the mentioned infectious diseases was identified. Coronaviruses were introduced into the human population from the raccoon dogs and bats, influenza viruses affect mostly poultry and waterfowl, while the Ebola virus is transferred by bats and monkeys. Close control of the distribution of viruses

among the mammals and birds along with the strict epidemiological monitoring – detection of sick species and their isolation – are the measures that, if focused on, will assist in the prevention of the transfer of viruses from animals to the human population and their further spreading among people. The close cooperation between scientists and doctors worldwide is the only possible way to prevent the spreading of new infectious diseases. The infectious agents do not recognize country borders and no one country can deal with this global threat alone.

Since the number of efficient antiviral drugs is limited, the most effective way to prevent the spreading of infectious diseases is vaccination. However, vaccines exist only for a few pathogens and some of them have limited effectiveness. For the efficient control of the spreading of infectious diseases and the development of new and more efficient vaccines and antivirals, it is necessary to establish a fast and regular information exchange between scientists worldwide. This means that the results of scientific research need to be easily accessible for the whole scientific community. Publication of scientific results in an online open access journal is the best possible way to solve this problem.

Publications related to medical disciplines are the fastest growing group among scientific publications. At present, medical journals account for 20% (15,900) among the 78,400 printed scientific journals that are published in the world. According to the Ulrich's Periodic Directory database (<http://ulrichsweb.serialssolutions.com>), 25% of all the electronic journals are devoted to medical science. The share of Russian medical journals in this database is only 1.6% [3]. The major world medical search engine – MEDLINE (Medical Literature Analysis and Retrieval System), which is founded by the US National Medical library, offers the publications of 5,600 biomedical journals. Among them there are only 40 Russian medical journals and just a few of them are focused on microbiological problems. The publications from a number of Russian journals like “Questions of virology” (Voprosi virusologii), “Medical parasitology and parasitic diseases” (Meditsinskaja parazitologija i parazitarnye bolezni), “The journal of microbiology, epidemiology and immunobiology” (Zhurnal mikrobiologii, epidemiologii, i immunobiologii) and “Microbiology” (Mikrobiologija) are represented in MEDLINE in English only by the title of the paper, list of authors, and abstract. The body of the research paper, written in Russian, remains inaccessible for the world scientific community. The author's affiliation and e-mail addresses are also not always available, which prevents the exchange of scientific information. Research papers from the journal “Molecular genetics, microbiology and

virology” (Molekulyarnaya genetika, mikrobiologiya i virusologiya) are translated in English, but this journal is not currently indexed by MEDLINE. The good example is the journal “Acta Naturae” which was recently founded by the Russian Ministry of Education and Science together with the M. V. Lomonosov Moscow State University. “Acta Naturae” is an open access journal, which publishes papers both in English and in Russian on academic and applied research with the focus in molecular biology.

To sum up all the above mentioned facts, it is reasonable to conclude that, presently, in Russia there is a shortage of scientific journals which publish papers devoted to microbiology in English. Therefore, starting a new online open access journal covering all the aspects of microbiology is of current importance especially now in the era of Ebola, MERS, SARS, tuberculosis, and AIDS.

The electronic journal “Microbiology Independent Research journal” (MIR journal), which was founded in 2014 in Russia, is a new international resource for research scientists working for academia and biopharmaceutical companies as well as medical doctors. MIR journal publishes research papers on the recent achievements and new methods in microbiology and biotechnology. MIR journal is focused on publications related to the major discoveries in virology, bacteriology, and mycology.

The main priorities of the new microbiology journal MIR are the following:

1. All the papers that are submitted for publication go through the peer review process. In order to be published, the manuscript has to receive at least two positive reviews from the experts working in the same or close branch of science. All reviews are anonymous. These requirements ensure a high quality of publications.

2. MIR journal is an open access electronic journal. All the accepted manuscripts are immediately published

on the MIR journal website and become accessible for all readers free of charge. The fast, easy, and convenient access to the full text of publications provides information about the emergence, properties, and spread of new as well as known pathogens to the scientific community, which is absolutely necessary to ensure the timely and effective protection of public from infectious diseases.

3. One of the goals of MIR journal is to enhance the number of publications from Russian research laboratories in English. Manuscripts written both in Russian and English are accepted for publication by MIR journal, although manuscripts in English have priority. MIR journal translates all of the manuscripts written in Russian into English with the subsequent editing of the text by English native speakers.

Therefore, the main goal of this new electronic journal is the prompt and high quality coverage of the current problems and achievements in microbiology. The objective of the journal’s editorial board is the international recognition of MIR journal as well as its indexing in the major scientific databases, namely MEDLINE, Web of science, Scopus, and Springer.

REFERENCES

1. To KK, Hung IF, Chan JF, Yuen KYJ From SARS coronavirus to novel animal and human coronaviruses. *Thorac Dis.* 2013; 5 Suppl 2,S103-8.
2. Romanova J. The fight against new types of influenza virus. *Biotechnol J.* 2006 1(12), 1381-92.
3. Anthony SM, Bradfute SB. Filoviruses: One of These Things is (not) Like the Other. *Viruses* 2015, 7, 5172–90.
4. Kirillova OV. Current Status and Prospects of Russian Medical Journals and Publications. *Vestnik Eksp. Klinich. hirurgii*, 2014; VII, 1, 10-24 (In Russian).