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# German-Russian bilateral tuberculosis control and research projects aim at successfully fighting multidrug-resistant tuberculosis in Eastern Europe

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## Двусторонние германо-российские усилия в борьбе с туберкулезом и научно-исследовательские проекты, направленные на успешную борьбу с множественной лекарственной устойчивостью микобактерий туберкулеза в Восточной Европе

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### Резюме

Самой большой проблемой в борьбе с туберкулезом в Европейском регионе ВОЗ является быстрый рост распространенности лекарственно-устойчивых штаммов микобактерий туберкулеза в регионе. Форум им. Р. Коха и И.И. Мечникова (КМФ) создан по инициативе партнеров в Российской Федерации в области иммунологии, медицинской микробиологии, эпидемиологии и общественного здоровья. Различные проекты с партнерами в Санкт-Петербурге, Смоленске, Екатеринбурге, Новосибирске и Томске направлены на решение проблем в диагностике туберкулеза. КМФ принимает участие в конференциях и симпозиумах в Российской Федерации. КМФ принял участие в ежегодном конгрессе Национальной ассоциации физиотерапевтов, где проходило обсуждение текущих проблем борьбы с ТБ, позволяющем осуществлять обмен знаниями и опытом между экспертами ТБ из всех областей России, физически или виртуально присутствующими на конгрессе.

**Ключевые слова:** Форум им. Р. Коха и И.И. Мечникова, туберкулез, множественная лекарственная устойчивость, российско-германское сотрудничество

### Summary

The biggest challenge in fighting tuberculosis in the WHO-European Region is the fast growing rate of multidrug-resistant strains of *Mycobacterium tuberculosis* in the region. Koch Mechnikov Forum (KMF) and its partners in the Russian Federation initiated scientific collaborative projects in the fields of immunology, medical microbiology, epidemiology and public health. Besides immunology, various projects with partners in St. Petersburg, Smolensk, Yekaterinburg, Toms and Novosibirsk aimed and still aim at addressing problems in TB diagnostics, in case notification and infection epidemiology. KMF and its partners developed a scientific network and a variety of publications. KMF is eager to contribute not only to TB projects, but also to meetings, conferences and symposia within the Russian Federation: Namely the annual

congress of the National Association of Phthisiatrists, an all-Russian conference which took place in November 2015 for the 4<sup>th</sup> time and headed by Prof. P.Yablonskiy, is very suitable to discuss current TB problems on a large scale and allow exchange of expertise and experiences

between TB experts from all Russian oblasts (physically or virtually present at the congress).

**Keywords:** Koch Metchnikoff Forum, Russian-German collaboration, an international conference

The biggest challenge in fighting tuberculosis in the WHO-European Region is the fast growing rate of multidrug-resistant strains of *Mycobacterium tuberculosis* in the region. Multidrug-resistance, aggravated by an emerging HIV-epidemic in many of the successor states of the former Soviet Union, counteracts all efforts to efficiently control tuberculosis. In fact, we more and more lose control, and tuberculosis already gets virtually untreatable in some areas of our WHO-European Region. Thus, the development of new drugs and novel vaccine candidates becomes more and more urgent.

To address these challenges, Koch Mechnikov Forum (KMF) and its partners in the Russian Federation initiated scientific collaborative projects in the fields of immunology, medical microbiology, epidemiology and public health. The first scientific partnership dates back to November 2001 and is still active: The characterization of host pathogen interactions in human tuberculous lung tissue is of great importance to better understand immunological processes that are correlated with protection against infection or disease. The Central Tuberculosis Research Institute in Moscow is specialized in dissecting human lung tissue and combine human and animal model approaches. Besides immunology, various projects with partners in St. Petersburg, Smolensk, Yekaterinburg, Toms and Novosibirsk aimed and still aim at addressing problems in TB diagnostics, in case notification and infection epidemiology. KMF and its partners developed a scientific network and a variety of publications.

As a platform for scientific exchange, the symposium on World Tuberculosis Day has been launched in March 2007. The first symposium was organized to prepare the Ministerial Forum on Tuberculosis in Berlin in October 2017 which then adopted the so-called Berlin Declaration on Tuberculosis. The symposia following the first year 2007 which also commemorated the 125<sup>th</sup> anniversary of Robert Koch's famous lecture "Ueber Tuberculose" each had a specific scientific focus:

- 2007 125th anniversary of Koch's lecture and preparation of the Ministerial Forum and the Berlin Declaration on Tuberculosis;
- 2008 Current research topics in diagnostics, therapy and prevention;
- 2009 Public health intervention in TB control;

- 2010 Exchange of expertise in TB control between Eastern Europe and South Africa;
- 2011 Childhood tuberculosis;
- 2012 Evaluation of progress made in TB control four years after the adoption of the Berlin Declaration on Tuberculosis;
- 2013 Public private partnerships in diagnostics, therapy and prevention of TB;
- 2014 HIV-TB-comorbidity in different WHO world regions;
- 2015 Public health interventions and vaccine development; in collaboration with Tuberculosis Vaccine Initiative, TBVI;
- 2016 TB and migration

Today, KMF's TB symposium on the occasion of World Tuberculosis Day is a well-established scientific meeting with both interactions among TB experts and scientists as well as with representatives of politics, public private partnerships, and other decision makers including those from WHO. The 10<sup>th</sup> symposium in March 2016 was opened by the Vladimir Grinin, ambassador of the Russian Federation to Germany, highlighting the importance of joint Russian-German projects in TB control even in times of political turbulences (see *figure 1*)

The long-term collaboration in TB control and research projects produced some other Russian-German projects in neighboring fields: Between KMF and the Northwestern State Medical University named after I.I. Mechnikov, a memorandum of understanding was based on the joint TB work. On this basis, a joint master program in public health was developed and launched in September 2014. With the Smolensk State Medical University, a students' exchange program was launched, with a special focus on TB projects.

KMF is eager to contribute not only to TB projects, but also to meetings, conferences and symposia within the Russian Federation: Namely the annual congress of the National Association of Phthisiatrists, an all-Russian conference which took place in November 2015 for the 4<sup>th</sup> time and headed by Prof. Yablonskiy, is very suitable to discuss current TB problems on a large scale and allow exchange of expertise and experiences between TB experts from all Russian oblasts (physically or virtually present at the congress). KMF aims at establishing a formal collaboration with the National Association of Phthisiatrists in the nearer future.



**Figure 1.** Dr. Vakrusheva, TB-Institute Yekaterinburg; Prof. Starchinova, TB-Institute St. Petersburg; Vladimir Grinin, Ambassador of the Russian Federation to Germany in Berlin; Prof. Hahn, President of the Koch-Mechnikov-Forum (KMF); Prof. Myakisheva, Smolensk State Medical University (SSMA); Vera Zaytseva, Int. Department SSMA; Dr. Igor Medvinskiy, TB-Institute Yekaterinburg; Prof. Yablonskiy, President of the National Association of Phthisiatrists, St. Petersburg; Anastasia Stepanovich, Project manager of KMF; Prof. Ulrichs, Akkon-University for Human Sciences and KMF

### Koch-Mechnikov-Forum

In 2006, in the presence of president Putin and chancellor Merkel the Koch Mechnikov Forum (KMF) was founded as initiative of the Petersburg dialogue and providing the organizational framework for collaborative projects in the field of fighting infectious diseases. The field of tuberculosis forms the center of KMF. The Forum is named after Robert Koch, the bacteriologist who described *Mycobacterium tuberculosis* as the etiologic agent of tuberculosis, and Ilya Metchnikov who discovered macrophages as the key immune cells in the immune response against *M. tuberculosis* and many other pathogens. KMF is funded by grants of the German Ministry of Education and Research and by several companies involved in diagnostics and vaccine development.

The aim of KMF is to further the scientific cooperation, the exchange of ideas, scientists and materials (capacity building in the partner institutions). It also intends to improve the WHO strategy of containing tuberculosis, DOTS (directly observed therapy, short-course). Besides tuberculosis, there are other sections for HIV/AIDS, hepatitis, transfusion medicine, e-health and hospital management. Partners of the KMF are in Germany: Charité University Medicine, National Reference Center for Mycobacteria, Max-Planck-Institute for Infection Biology; in Russia: Central Tuberculosis Research Institute in Moscow, Institute for Experimental Medicine and Institute for Phthisiopulmonology in St. Petersburg, Siberian State Medical University in Tomsk, Federal Tuberculosis Center in Novosibirsk, Smolensk State Medical University, Institute for Phthisiopulmonology in Yekaterinburg.

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