EPFL joins forces with pharmaceutical company to fight tuberculosis

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Credit: Clifton E. Barry III, Ph.D., NIAID, NIH

The pharmaceutical company Nearmedic is collaborating with EPFL to participate in the development of a treatment against tuberculosis. The company bought a license covering the use of the molecule in most countries of the former Soviet Union, where multi-resistant strains are prevalent.

EPFL is one step closer to the development of its antituberculosis agent. In March, the school gave birth to the Innovative Medicines for Tuberculosis Foundation (iM4TB Foundation) with the mission of developing a new and promising treatment against multi-resistant forms of the disease. This unusual approach is necessary to overcome the pharmaceutical industry's lack of interest in this condition that continues

to kill more than 1.3 million people per year. The researchers were able to enter into a partnership with the Moscow company Nearmedic. Countries of the former Soviet Union are experiencing a troubling resurgence of the disease in a form resistant to most treatments. This is why the partners have committed to providing the public with effective and affordable treatment.

Called "PBTZ169," the molecule has been very effective in combination with standard therapy, pyrazinamide, as well as with a newer drug, Bedaquiline, approved by the European Union and the U.S. FDA for cases of multidrug-resistant tuberculosis (MDR-TB). According to Stewart Cole, who led the research at EPFL in collaboration with the Bach Institute in Moscow, "these molecules attack different targets in bacteria. By combining them, we drastically reduce the risk that it could mutate into resistant forms."

Accelerating market placement

Nearmedic has more than 2,000 employees in Russia and across the globe. The company is best known for developing a diagnostic system for MDR-TB. The licenses it purchased from EPFL will primarily go toward financing the activities of the iM4TB Foundation. The Russian company will benefit from data produced by the foundation as well as from exclusive rights to the countries of the Commonwealth of Independent States.

"This collaboration will accelerate the placement of our molecule on the market," explains Jean-Yves Gillon, Director of the Development of Drugs at the iM4TB Foundation. "MDR-TB is a serious public health problem, particularly in Russia, and our partners are highly motivated."

A molecule simple to synthesize, an affordable treatment

For now, iM4TB retains the rights for the rest of the world. "We remain open to partnerships with other regions," explains Stewart Cole. "But tuberculosis does not arouse great interest in the industry. For now, this disease affects mostly poor populations, and our priority is to place a treatment on the market at an affordable price."

As it is relatively simple to synthesize, the PBTZ169 molecule can be produced inexpensively. Initial tests showed good compatibility with other TB treatments, and it is expected to be compatible with antiretroviral drugs against HIV. People with HIV are particularly vulnerable to TB bacteria, and cases of cross infections are on the rise.

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