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News alert¹

Europe gives €32 million for vaccines to stop tuberculosis

The European Commission today launched the largest-ever collaborative tuberculosis (TB) initiative for World TB-day, March 24. Fifty-two research teams from academia and industry from 15 European and African countries are joining forces with the European Commission to help eradicate TB. Globally, TB kills 2 million people a year, with one-third of the world's population currently infected with the bacillus, Mycobacterium tuberculosis (Mtb). While most cases and deaths occur in developing countries, resistant Mtb strains are mainly found among the poorest people in developed countries, as incomplete treatment increases drug resistance. The European Union is confronting the re-emerging threat of TB by investing €32 million in two overlapping research projects. This cash will be used in an accelerated effort to develop new, effective vaccines to fight TB.

“Despite today’s potential in scientific knowledge and technology, poverty-related diseases such as tuberculosis are not eradicated yet. More than ever, the only way is through a concentrated and integrated effort. More than ever, scientific and technological efforts must be co-operative so that scientific advances can benefit everyone,” Commissioner Busquin said.

The only way to eradicate TB is to find an effective vaccine. The current vaccine, BCG, only protects infants from severe TB. It fails to protect the adult population against contagious TB and can be unsafe for people infected with HIV, which is the most significant catalyst for TB in poor countries. To stop TB, new vaccines against both TB and HIV are therefore urgently needed.

EU research into tuberculosis

Researchers in the TB-VAC project will select vaccines for TB that work in adults and are safe to use in poor health infrastructure settings. The second project, MUVAPRED, focuses on vaccine delivery by developing HIV and TB vaccines that can be taken orally or as a nasal spray. Co-operation between the two projects will boost our general knowledge about TB, while the participation of industrial partners will ensure that scientific successes are translated into concrete health care results.

¹ For more information on the European Commission’s Research DG, including previous press releases, visit our Web site at <http://europa.eu.int/comm/research>

Affecting the poor

Poor countries are the most severely affected by TB. Today, a combination of antibiotics can be used to treat the disease, but the treatment must continue for at least six months. As a result, the treatment is often abandoned or not properly followed. "This can lead to the appearance of antibiotic-resistant strains. In some cases, the disease may become untreatable" warns Brigitte Gicquel, professor at Institut Pasteur in Paris and a partner in both projects. "The most important thing is to develop a new vaccine". Fortunately, the recent sequencing of Mycobacterium tuberculosis genome opens up promising avenues. The TB-VAC project, coordinated by Dr Jelle Thole, from the Netherland's ID-Lelystad, will develop new vaccines based on protein antigens, non-protein antigens, improved BCG, live attenuated mycobacteria and new delivery systems. The project will lead from the laboratory to the initiation of phase I human clinical trials in Europe and Africa.

Combating TB and HIV without needles

TB is one of the leading causes of death among people affected by AIDS, with more than one-third of HIV-infected people co-infected with TB. Development of an effective HIV vaccine that can be easily administered to people in poor countries will thus greatly contribute to TB control worldwide. Vaccines work by teaching the immune system to recognise and destroy viruses and bacteria. In addition to the general immune system, some specialised immune cells settle in the mucous membranes, that are the "internal skin" of organs such as the intestine, breathing tube and genital organs. The aim of MUVAPRED is to stimulate this local immunity to neutralise both HIV and Mtb where the virus or bacteria enters the body. As all local immune systems exchange information, easily accessible mucous membranes such as those in the mouth and nose can be used to provide global protection to the body. Using pills or nasal sprays to vaccinate people will also avoid the risks involved in using needles. Dr Rino Rappuoli, Vice President and Chief Scientific Officer of Chiron, the 5th largest commercial vaccine manufacturer globally, and co-ordinator of the MUVAPRED project concluded: "This is a unique opportunity to allow the world's leading scientists in this field to co-operate and provide leadership in an area that is so important for humankind and particularly the developing world."

Note for editors

For the **thematic priority** on life sciences, genomics and biotechnology for health in the Sixth Framework Programme (FP6) see also: <http://www.cordis.lu/lifescihealth/home.html>

For information on World Tuberculosis Day (24 March 2004), please visit http://www.stoptb.org/events/world_tb_day/2004/

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Annex

Integrated Project "**Design and testing of vaccine candidates against tuberculosis: Identification, development and clinical studies**" (TB-VAC)

No of participants: 30 from the following countries: FR, BE, DK, ET, DE, IT, SN, ES, CH, NL, UK

Budget: EUR 20.8 million; EU contribution: EUR 16.8 million; Duration: 5 years

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Integrated Project "**Mucosal Vaccines for Poverty Related Diseases**" (MUVAPRED)

No of participants: 22 from the following countries: IT, DE, DK, FR, GN, CZ, SE, CH, IE, UK

Budget: EUR 18.0 million; EU contribution: EUR 15.2 million; Duration: 5 years.

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