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PRESS RELEASE

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MUCOSIS B.V. and PATH start development of pneumococcal vaccines

Dutch biotechnology company Mucosis B.V. and the global nonprofit organization PATH today announced a partnership to advance the development of pneumococcal vaccine candidates.

Under the collaboration agreement, Mucosis will develop intranasal vaccines based on Mucosis's proprietary pneumococcus-specific antigens and its Mimopath™ technology. PATH will provide approximately €400,000 for a 12-month study to further Mucosis's preclinical research of multivalent protein vaccine candidates through evaluation of the immunization route and optimization of antigens for protection. Radboud University Nijmegen Medical Centre (The Netherlands) will evaluate vaccine candidates in established models of pneumococcal diseases. If the study results are positive, Mucosis and PATH intend to extend their collaboration.

“Working with PATH offers us yet another opportunity to demonstrate the capabilities of our technology in an important indication” said Govert Schouten, CEO of Mucosis. “Our common goal is to produce a broadly protective pneumococcal vaccine that offers the public health systems efficacy and ease of administration.”

Pneumonia is the leading cause of death in young children in the developing world. Each year, more than two million children die from this disease. Pneumococcus (scientific name *Streptococcus pneumoniae*), the bacterium that is the most common cause of severe pneumonia, also causes sepsis (blood infection) and meningitis (brain infection), which disable and kill children worldwide. In addition, it is one of the leading causes of otitis media (middle ear infection).

“While current pneumococcal vaccines are effective in preventing morbidity and mortality due to pneumococcal disease, additional vaccines are ultimately needed to expand protection for children in low-income countries, where most pneumococcus deaths occur,” noted Dr. Mark Alderson, director of PATH's Pneumococcal Vaccine Project. “We are pleased to partner with Mucosis on this approach to developing

pneumococcal vaccines that will be effective and affordable in the countries that most urgently need them.”

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About Mucosis

Mucosis B.V. is a Dutch biotechnology company developing innovative mucosal vaccines that can be applied needle-free via the nose or mouth. Mucosis's lead product candidate is FluGEM™, an intranasal vaccine to prevent influenza. Mucosis's vaccines are based on the patented Mimopath™ technology. This technology enables a more natural immune response as well as a broad base of protection.

About Mimopath™ technology

Mimopath™ technology is based on *Lactococcus lactis*, a safe bacterium commonly used in the food industry. Mucosis has developed an easy technique to formulate the *L. lactis* bacteria into non-living particles that can be loaded with antigens from viral, bacterial, or parasitic origin. The antigen-covered particles form a vaccine that can be delivered into the nose or mouth, without the need for a needle. These vaccines raise protective immunity by activation of both the innate and the adaptive immune system.

About PATH

PATH is an international nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being. For more information, please visit www.path.org.