

A local barrier against respiratory viruses

How can a respiratory virus be stopped before it spreads throughout the body? In the MucoShield project, Prime Vector Technologies, the NMI Tübingen, and Fraunhofer IGB are developing an intranasal vaccine candidate against human metapneumovirus (hMPV), which causes hundreds of thousands of cases of severe respiratory disease worldwide each year – especially among children, older people, and immunocompromised individuals. The novel approach: A mucoadhesive formulation is designed to activate the immune response directly at the virus's point of entry – the nasal mucosa.

Human metapneumovirus (hMPV) causes hundreds of thousands of cases of severe respiratory infections worldwide each year, many of which require hospitalization. Young children, older adults, and immunocompromised individuals are particularly at risk. However, to date, neither an approved vaccine nor a specific antiviral therapy is available.

The MucoShield project, launched on August 1, 2026, and funded by the Baden-Württemberg Ministry of Economic Affairs, Labor, and Tourism of Baden-Württemberg, the Tübingen-based startup Prime Vector Technologies GmbH, the NMI Natural and Medical Sciences Institute at the University of Tübingen, and the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB are now jointly developing a vaccine candidate based on a virus-based platform technology.

The novel approach: A mucoadhesive formulation is designed to specifically trigger a local immune response in the nasal mucosa – thereby creating a protective barrier directly at the site of the initial viral infection. Prime Vector Technologies provides the technology for the intranasal vaccine candidate through its Orf virus vector platform. A scalable manufacturing process is intended to ensure GMP-compliant production.

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