

Platform-based Vaccines – Short-cut to Protection

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The current COVID-19 pandemic illustrates the need for fast availability of safe and effective vaccines, when a significant pathogen fast spreads world-wide from its wild-life pool. Well described for flu pandemics with few interlaying decades in the past, respiratory pathogens will be a constant future challenge even long after the situation around SARS-CoV-2 has normalized.

Without a preformed preparedness of the scientific and regulatory community in the past, it would have been impossible to shrink vaccine development times from 10 to 15 years to less than 1 year. This presentation will outline the vaccine development concept that allowed the fast development of the highly effective and safe available COVID-19 vaccines: The use of platform technologies that can be adapted to different emerging pathogens.

Using measles vaccine virus (MeV) as an example, this talk will outline why and how such well known and tried and tested vaccines can be used to also protect against other diseases of interest. The measles vaccines are among the most effective vaccines utilized so far, which would permit eradication of this most contagious disease. Recombinant MeV can be modified to additionally present foreign antigens to the immune system after vaccination, and thereby trigger immune responses that can protect against the secondary emerging pathogen of choice. Using this example, the presentation will visualize what is needed for prove of concept of such a vaccine, and why the development in general can progress on virtually another time-scale without impairing the thoroughness of the process.