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DAS181: A novel host directed approach to prevent and treat respiratory virus infections

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Abstract

Vaccines and virus specific antivirals (NAI's) are currently the main approaches to prevent and treat influenza virus infections. Recently the 2009H1N1 pandemic and the H7N9 outbreaks exemplify the unpredictable nature of influenza viruses. Particularly concerning was the documentation of a strain of H7N9 with potential drug resistance to licensed NAI's. Alternative medical countermeasures are urgently needed. DAS181, a novel inhaled sialidase fusion protein, has shown *in vitro* and *in vivo* activity against many subtypes and strains of influenza virus including H7N9, and H5N1. In addition the drug has shown *in vitro* and *in vivo* activity against parainfluenza virus strains (PIV-1, PIV-2, PIV-3, PIV-4), by inactivating the virus binding receptors. For parainfluenza infection, significant morbidity and mortality is observed in immunosupressed transplant patients without any licensed vaccines or antiviral drugs. The host directed approach of DAS181 contrasts virus specific antivirals, by potentially circumventing considerable issues related to antiviral drug resistance and prediction of strains required for vaccines. DAS181, an investigational drug, is currently in phase 2 clinical trials for the treatment of influenza and parainfluenza infection. Preclinical and clinical data from studies with DAS181 will be presented.

Biography

Dr. Moss trained in the Laboratory of Clinical Investigation at the National Institute of Allergy and Infectious Disease and is a practicing physician, boarded in Allergy/Immunology and Pediatrics. He has been involved in the design and execution of successful clinical development involving multiple phase I clinical trials including preventative and therapeutic vaccines for influenza, HIV, cancer, as well as trials of anti-viral drugs. He also has been involved in multiple phase 2 clinical trials including preventative and therapeutic vaccines for rheumatoid arthritis, multiple sclerosis, CMV, HIV, and trials for anti-viral drugs. He has been involved in phase 3 studies for HIV, MMRV, and Rotavirus vaccines and was the regulatory lead for two successful BLA's. He is the author of over 70 peer reviewed publications and has given hundreds of presentations at key scientific meetings.