

Live-recombinant measles virus vaccine to prevent zika virus infection

Sabrina Schrauf, Katrin Ramsauer, Raimund Vielascher, Alexander Kort, Matthias Müllner, and Erich Tauber
Themis Bioscience GmbH, Austria

Zika virus is an emerging mosquito-borne *flavivirus*. The virus emerged in the past 70 years only sporadically with self-limiting small outbreaks. In 2013, a large outbreak in French Polynesia resulted in over 30,000 cases. Since early 2015 Zika virus spread in the Americas and to date caused autochthonous, vector-borne transmission in 48 countries and territories. This rapid emergence of the previously unknown pathogen raised the urgent need for a vaccine that can be rapidly produced in response to a newly emerging pathogen. Themis took the challenge and developed a vaccine candidate from design to Phase I clinical trial within 14 months. The MV-ZIKA vaccine candidate is a live attenuated recombinant viral vectored vaccine for the prophylaxis of Zika virus infection. The measles virus (MV) Schwarz vaccine strain was used as the backbone into which nucleotide sequences encoding Zika virus structural proteins glycoprotein precursor (prM) and

the Envelope (E) were inserted to produce the MV-ZIKA. In measles virus susceptible mice, single or multiple vaccinations with MV-ZIKA induced a robust protective immunity, as shown by the induction of ZIKV E protein specific antibodies. The immunization of *Cynomolgus* macaques resulted in the induction of Zika virus neutralizing antibodies in all vaccinated animals. To evaluate the optimal dose of MV-ZIKA regarding immunogenicity, safety, and tolerability we initiated a double blinded, randomized, placebo-controlled, multi-center, phase I trial in 48 healthy volunteer subjects. The subjects will receive one or two vaccinations. The immunogenicity as confirmed by the presence of functional antibodies will be determined on day 28 after the second immunization. The clinical trial is currently ongoing and preliminary data will be presented here.

Biography

Sabrina Schrauf graduated as PhD from the University of Vienna in the field of Virology where she worked on Flavivirus biology including Tick-borne encephalitis virus and West Nile virus. She joined Themis in 2015 to coordinate preclinical development of vaccines-vaccine design and testing.

sabrina.schrauf@themisbio.com

 Notes: