21st World Congress and Exhibition on

VACCINES, VACCINATION & IMMUNIZATION

November 09-10, 2017 Vienna, Austria

Keynote Forum

Day 1






Vaccines World 2017

Andreas Meinke, Virol Res J 2017, 1:4

Andreas Meinke

Valneva Austria GmbH, Austria

A novel Lyme borreliosis vaccine protecting against all major borrelia infections

Lyme borreliosis (LB) or Lyme disease is the most common vector-borne disease in the northern hemisphere and at present there is no vaccine available to prevent infections. Recent analyses showed that the number of infections in the US and Europe are largely underreported, emphasizing the need for an effective vaccine. An OspA (Outer surface protein A) based vaccine (LYMErix™) was previously shown to be efficacious against disease caused by the most prevalent *B. burgdorferi* in the US. In Europe, the majority of LB cases are caused by four different Borrelia species expressing six different OspA serotypes. Since Outer surface protein A (OspA) is one of the dominant antigens expressed by the spirochetes when present in the tick vector we have developed a vaccine for global use, consisting only of the C-terminal part of OspA which is sufficient for protection. To target the Borrelia species expressing the six different OspA serotypes prevalent in US and Europe, we have designed a multivalent OspA-based vaccine (VLA15), including three proteins, each containing the C-terminal half of two OspA serotypes linked to form a single fusion protein. The OspA fusion proteins were at least 85% triacylated which ensured high immunogenicity and were highly purified for further preclinical testing. Active immunization with the adjuvanted Lyme borreliosis vaccine VLA15 protected mice from a challenge with spirochetes expressing either OspA serotype 1, 2, 4, 5 or 6, using infected ticks or *in vitro* grown bacteria as a challenge. Further immunological analyses (ELISA, surface binding and growth inhibition) indicated that the vaccine can provide protection against the majority of human pathogenic Borrelia species, including OspA serotype 3. This rational designed VLA15 vaccine was therefore prepared for evaluation in a first-in-man study which currently ongoing.

Recent Publications

- Comstedt P, Schüler W, Meinke A and Lundberg L (2017) The novel Lyme borreliosis vaccine VLA15 shows broad protection against Borrelia species expressing six different OspA serotypes. PLOS ONE. 1:12(9):e0184357.
- Roques P, Ljungberg K, Kümmerer BM, Gosse L,

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Dereuddre Bosquet N et. al. (2017) Attenuated and vectored vaccines protect non-human primates against Chikungunya virus. J. Clin. Invest. Insight 2(6):e83527.

- Olafsdottir TA, Lindqvist M, Nookaew I, Andersen PL, Maertzdorf J, Persson J, (2016) Comparative systems analyses reveal molecular signatures of clinically tested vaccine adjuvants. Nature Scientific Reports. 6:39097.
- Knudsen NPH, Olsen A, Buonsanti C, Follmann F, Zhang Y et. al. (2016) Different human vaccine adjuvants promote distinct antigen-independent immunological signatures tailored to different pathogens. Nature Scientific Reports 6:19570.
- Comstedt P, Hanner M, Schüler W, Meinke A, Schlegl R and Lundberg U (2015) Characterization and Optimization of a Novel Vaccine for Protection against Lyme Borreliosis. Vaccine 44:5982-88.

Biography

Andreas Meinke is an expert in Micro- & molecular biology and infectious disease, with more than 18 years of experience in vaccine R&D. He graduated in Biology, performed his PhD work at the University of British Columbia in Vancouver, Canada and lectured at the University Vienna as an Assistant Professor. At Valneva he was instrumental for the development of the AIP technology and for the development of several vaccine candidates towards clinical testing. During his career, he has authored and co-authored more than 70 publications and filed more than 20 patents in the field of antigen discovery and vaccine research.

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Geert C Mudde, Virol Res J 2017, 1:4

Geert C Mudde

OncoQR ML GmbH, Austria

Targeted vaccination and intrinsic adjuvant function: Next generation checkpoint control

Using the S-TIR™ technology platform for human specific therapeutic vaccines OncoQR ML has developed two prototype vaccines for treatment of pancreatic cancer (TYG100) and breast cancer (OQR200). Vaccines derived from this platform consist of 2 modules, the disease specific module, “immunogen” and the generic module, “warhead”, which directs the vaccines to CD32 on antigen presenting cells, especially pDCs and B cells. The immunogen in oncology is a tumor associate auto-antigen, against which under normal conditions no Clinically relevant immune responses can be induced. However, in combination with the warhead, thanks to intrinsic check point control, the immune system generates very strong and rapid antibody and T cell immune responses. The responses are reversible and boostable, thus allowing fine-tuning of the clinical responses on a patient to patient basis. S-TIR™ vaccines in contrast to the current checkpoint inhibitors do not induce autoimmune disease and are tumor specific while mobilizing both arms of the immune system against the tumor.

Biography

Geert C Mudde received a PhD in Immunology from the University of Utrecht in 1985 and started his international professional career at the Swiss Institute for Asthma and Allergy Research in Davos in 1989. In 1992 he joined the pharmaceutical/biotech industry, where he held several senior management positions at the Novartis Research Institute in Vienna, Austria, the Parke Davis Research Institute in Fresnes, France, Ingenium Pharmaceuticals, Martinsried, Germany, and at Igeneon AG, Vienna, Austria. Finally, in 2006, while joining Baxter BioScience in Vienna as Interim Manager, he co-founded the biotech company F-star Biotechnology, where he served as Chief Scientific Officer from 2007 to 2009. In 2009, together with Christof Langer, he started to develop the S-TIR™ technology platform for human specific therapeutic vaccines which led to the foundation of S-TARget therapeutics GmbH in 2010. Since then he serves as CSO and Managing Director for S-TARget therapeutics as well as for the S-TIR™ technology spin-off companies OncoQR ML GmbH and TYG oncology Ltd., which were both founded in 2013.

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Keynote Forum

Day 2






Vaccines World 2017

Anissa Boumlic-Courtade, Virol Res J 2017, 1:4

Anissa Boumlic-Courtade

Merck Group, France

Accelerating vaccine process development and manufacturing: Innovative approaches and challenges

Preventable diseases vaccines save millions of lives but are not always delivered when needed to a large fraction of the population. In addition, there are several infectious diseases that remain without cure or vaccine. Innovations in process development and manufacturing are unavoidable to enable release of existing and novel vaccines and their delivery where and when they are mostly needed. This presentation will outline where innovative approaches and technologies while developing and/or optimizing the process and at manufacturing scale can accelerate clinical phases and compress the time to market of highly needed vaccines. Furthermore, using case studies like Ebola and influenza outbreaks, challenges will also be highlighted in pandemic situations and approaches will be discussed on how to alleviate roadblocks and be better prepared to manufacture vaccines in urgent situations.

Biography

Anissa Boumlic-Courtade PhD is the Associate Director for the vaccine initiative in EMEA with Merck. She joined Merck in 2009 (formerly Millipore) after research experience in various institute including Pasteur Institute of Athens and the CNRS (National Center for Research, France). She has held various positions focused on downstream processing, virus safety, monoclonal antibody, vaccine process development and manufacturing. She holds a MSc in Biotechnology Engineering from the Ecole Supérieure de Biotechnologie (ESBS) de Strasbourg (France) and a PhD in Molecular Biology & Biochemistry specialized in Virology from the University of Strasbourg co-directed with the University of Thessaly (Greece).

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Geert Vanden Bossche, Virol Res J 2017, 1:4

Geert Vanden Bossche

German Center for Infection Research (DZIF), Germany

Translational Vaccinology: A myth?

Biography

Geert Vanden Bossche obtained his DVM at the Veterinary Faculty of Ghent and his PhD in Virology at the University of Hohenheim, Stuttgart. Following his Postdoctoral training in Virology, Immunology and Molecular Biology at the Free University of Berlin and the University of Hohenheim (Germany), he was given the Venia Legendi and subsequently held adjunct faculty appointments at the University of Hohenheim (Germany), the University of Leuven (Belgium) and the European Faculty for Environmental Sanitation at the University of Ghent (Belgium). He then transitioned to the Vaccine Industry to serve various senior roles in both early and late vaccine development (GSK, Novartis, Solvay). In 2008, he joined the Bill & Melinda Gates Foundation in Seattle to serve as Senior Program Officer in Vaccine Discovery for Global Health. Furthermore, he also founded UNIVAC LLC, a start-up vaccine company, and coordinated the Ebola Vaccine Program on behalf of GAVI. He is now the Head of Vaccine Development Office at the German Center for Infection Research (DZIF) in Germany. He is board certified in Virology and Microbiology, the author of over 30 publications, and inventor on a patent application for universal vaccines. He has presented vaccine- and adjuvant-related topics at multiple international congresses.

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