

New trends and upcoming challenges in the development of novel vaccines

Highlights from 3rd Vienna Vaccines Conference

Vienna (Austria), April 16, 2007 – The third vaccine conference, **Semmering 2007**, took place in Baden near Vienna, April 12 - 15, 2007. The symposium confirmed that vaccines and novel vaccine strategies are having a great come back. They are playing an increasingly important role in the global attempt to improve human health care. Cutting-edge presentations were held by scientists in the field of microbiology and immunology as well as by vaccine developers. They gave impressive examples of how the improved understanding of diseases and the host immune response enable vaccine developers to design vaccines against novel target pathogens as well as to move vaccine treatments into new disease areas.

SELECTED HIGHLIGHTS

Rich World – Poor World

Regina Rabinovich (Melinda and Bill Gates Foundation) reported how successful efforts to deliver existing vaccines to less developed countries are able to save the lives of millions of children every year. Gordon Freeman (Harvard Medical School) provided data that the introduction of the existing pneumococcus vaccine in the developed world has not only reduced pneumococcal diseases among children, but also saved the lives of the elderly by decreasing the rate of transmission within the community. However, his epidemiological studies revealed that pneumococcal strains not covered by the vaccine are spreading, since the present vaccines are only protecting against a very limited number of strains.

The Importance of Adjuvants

Increasing knowledge of the human immune system allows gearing up the efficacy of existing and novel vaccines with newly designed adjuvants and cytokines. In this context, data showed that vaccines have to be improved in order to meet the needs of the immune system especially of the elderly and newborn children. In their presentations, Beatrix Grubeck-Loebenstein (Institute for Biomedical Aging Research) and Paul Henri Lambert (University of Geneva) also pointed out that the newly designed vaccines may help to overcome the exhaustion of the immune system of neonates and the elderly, as also seen in chronic viral or bacterial diseases.

Old Disease – New Threat: Tuberculosis

Tom Ottenhoff (Leiden University Center) presented preliminary clinical results of a novel Tuberculosis (TB) subunit vaccine designed by Statens Serum Institut (SSI) and adjuvanted with Intercell's IC31™. The vaccine obtained a critical level of T-cell response in humans. Furthermore, no vaccine-related systemic adverse effects and no vaccine-related laboratory abnormalities were observed. Already one month after the first injection, a significant increase

in the number of antigen-specific T-cells was observed. This vaccine is expected to move into further clinical trials soon.

Hospital-acquired Infections

The development of a novel vaccine against *Staphylococcus aureus* (*S.aureus*) was another subject of the conference program. *S. aureus* is a leading cause of nosocomial- and community-acquired infections and has developed resistance to most currently available antibiotics. As yet no effective vaccine has been identified to protect against these infections. John Shiver (Merck) discussed the use of *in vitro* and *in vivo* assays to study *S. aureus* vaccine antigens. He presented convincing immune correlates to show vaccines have an extreme potential to effectively prevent *S.aureus* diseases not only in animals but also in humans. The vaccine developed in collaboration with Intercell is in Phase I and is expected to move into further clinical trials soon.

Flu: A global Harassment

Three current academic and industrial developments highlighted the needs to improve the existing flu vaccines and to protect humans against a pandemic threat. Otfried Kistner (Baxter) suggested moving production from chicken eggs into cell culture. Walter Fiers (University of Ghent) recommended basing the vaccine on conserved antigens. Improving the immunogenicity of existing vaccines by combining it with an oral application of interferon's, is the approach of Michel Tovey (Institute Andre Lwoff).

New Products on the Way to the Market

Béatrice De Vos (GSK) presented a case study about GSK's Rotavirus (RV) vaccine "*Rotarix™, a human attenuated oral rotavirus vaccine for global use*". She showed the specific development, registration and distribution strategy of *Rotarix™*. It interestingly has been moved to registration through studies in less developed countries, before its launch in the USA and in Europe.

Mark Feinberg (Merck) told the revolutionary story of the development and the launch of their novel vaccine against Human Papilloma Virus to protect young women from infection. For the first time in medical history a vaccine will protect people against the later onset of virus induced cancer, i.e. against cervical cancer.

Under the title, "*A global vaccine approach for a global immunization need*", Erich Tauber (Intercell) discussed Phase III clinical trial results of a novel Japanese Encephalitis vaccine. The vaccine is expected to enter the market in early 2008. Japanese Encephalitis Virus (JEV) is a mosquito-borne flavivirus that causes severe encephalitis in humans, predominantly in children.

Revitalization of Technologies

Antonio Lanzavecchia (Institute for Research in Biomedicine) and Eszter Nagy (Intercell) reported novel approaches to revitalize the concept of passive vaccination, which already had

been successfully used in i.e. the old antiserum treatment against diphtheria, more than 100 years ago. Novel technologies permit the development of highly specific monoclonal antibody treatments, which eliminate infections which cannot be treated by other means.

About Vienna Vaccines Conference

The conference is an international bi-annual vaccine conference organized by Alexander von Gabain (Intercell's Chief Scientific Officer) and Vienna Vaccines, a non-profit organization devoted to interlink the scientific, commercial, but also non-governmental players in the field of vaccines. Renowned speakers from around the world present recent developments and new ideas regarding the development of novel vaccines.

This year, more than 170 participants from leading academic laboratories, major vaccine industries, financial institutions, but also from non-profit organizations came together to discuss the latest achievements and trends in the vaccine arena. The conference was followed by journalists from general and specialized media, including Nature Biotech, BioCentury and Vaccines.

The Vienna Vaccines conferences have become an international top forum that attracts the best people in its class and is also set up to inform journalists, students and health care specialists about this fascinating area.

For the abstract book and further information please visit: www.viennavaccines.com

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