

2012 台灣養豬獸醫師專科醫學會
專題演講



Challenges and Progress in Immunological Control of PRRS

Professor Micheal P. Murtaugh

研討日期:2012 年 9 月 20 日(四)上午 10:10~11:30

地 點: 國立中興大學獸醫學院 動物疾病診斷中心 108 視聽教室
台中市南區國光路 250 號

主辦單位: 國立中興大學獸醫學院獸醫病理生物學研究所
台灣養豬獸醫專科醫學會

協辦單位: 台灣百齡佳殷格翰股份有限公司

聯 絡 人:賴亞茜小姐 04-22840368 分機 24 0972-365282

聯絡信箱:g099047009@mail.nchu.edu.tw

Challenges and Progress in Immunological Control of PRRS

Pro. Micheal P. Murtaugh

Vaccination is the principal means used to control and treat porcine reproductive and respiratory syndrome virus (PRRSV) infection. An array of PRRS vaccine products is available to producers throughout Asia. However, despite extensive efforts, little progress has been made to improve efficacy since the first introduction of a live, attenuated vaccine in 1994 in the USA.

Key limitations include

1. Uncertainty about the viral targets of protective immunity that prevents a research focus on individual viral structures and proteins, and frustrates efforts to design novel vaccines;
2. inability to establish clear immunological correlates of protection that requires laborious in vivo challenge models for evaluation of protection against challenge; and
3. the great genetic diversity of PRRSV which requires that challenge experiments be interpreted cautiously since it is not possible to predict how immunological protection against one isolate will translate to broadly cross-protective immunity.

Economically significant levels of cross-protection that are provided to a variety of field isolated still cannot assure that effective protection will be conferred to isolated that might emerge in the future. In addition to these substantial barriers to new PRRSV vaccine development, there are enormous gaps in our understanding of porcine immunological mechanisms and processes that provide immunity to PRRSV infection and memory responses for long-term protection. Despite these impediments, progress is being made. Sequencing of the swine genome is providing a rich source of primary knowledge of gene structure and transcriptional regulation that is starting to reveal important insights about the mechanisms of PRRSV with pigs is being revealed, including discovery of a new PRRSV protein, will lead to insights that overcome the current limitations of immunologic protection in the field.



Education and training

B.S. in Biology, 1973, University of Notre Dame, Notre Dame, Indiana

Ph.D. in Entomology, 1980, Ohio State University, Columbus, Ohio

Postdoctoral Research Associate, 1980~1985, Departments of Internal Medicine and Pharmacology, University of Texas Medical School at Houston Texas

ESCOPE/ACOP Leadership Development Program, class 9, 1999-2000, Indianapolis IN and Washington, DC

Ph.D. Thesis Title: Male-Induced Stimulation of Egg Laying in the House Cricket

Professional positions

1972-1976 Peace Corps Volunteer

Departamento de Ecología, Centro Nacional de Investigaciones, Agropecuarias Maracay, Venezuela

1976-1979 Graduate Teaching and Research Assistant
Department of Entomology, Ohio State University, Columbus

1980-1984 Research Fellow
Department of Internal Medicine and Pharmacology, University of Texas Medical School, Houston

1984-1985 Research Instruct
Department of Pharmacology, University of Texas Medical School, Houston

1985-1991 Assistant Professor
Department of Veterinary & Biomedical Sciences, University of Minnesota. St Paul

1991-1995 Associate Professor
Department of Veterinary & Biomedical Sciences, University of Minnesota. St Paul

1995-present Professor
Department of Veterinary & Biomedical Sciences, University of Minnesota. St Paul

1997-1998 Visiting Professor
Research Institute for Molecular Pathology, Vienna, Austria

2004-2009 Program Director
USDA PRRS Coordinated Agricultural Project, University of Minnesota, St. Paul