

Title: Immunity against PRRS virus – what is the role of ‘auto-anti-idiotypic’ antibody? - **NBP #02-015**

Investigator: En-Min Zhou, PhD

Institution: Iowa State University

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Abstract: The antibodies against the envelope (Gp5) and matrix (M) proteins of porcine reproductive and respiratory syndrome virus (PRRS) neutralize the virus in vitro. Auto-anti-idiotypic against the monoclonal anti-Gp5 and anti-M antibodies (Mab1s) was identified and purified from pigs experimentally infected with PRRSV. Auto-anti-idiotypic was detected from serum samples collected at relatively early days post infection (DPI). Serological characterization indicates that auto-anti-idiotypic recognized the idiotypes on Mab1s against the Gp5 and M proteins of PRRSV, but not on Mab1s against N protein, and blocked the Mab1s from binding to PRRSV-infected cells. We also found that if the auto-anti-idiotypic developed at earlier DPI, the animals would clear the virus. In contrast, if it developed at later DPI, the animals would likely become persistently infected. These findings indicate that auto-anti-idiotypic may recognize the idiotypic located within or near the antigen-binding sites of Mab1s and should possess the virus neutralizing activity through binding potential viral receptor(s) on the cell. These results support further studies of developing anti-idiotypic vaccine candidates against PRRSV.

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For more information contact:

National Pork Board, P.O. Box 9114, Des Moines, Iowa USA

800-456-7675, Fax: 515-223-2646, E-Mail: porkboard@porkboard.org, Web: <http://www.porkboard.org/>