

RESEARCH PROJECTS COMPLETED 2009	Date Completed
<p>Dr. Y. Zhou Veterinary Infectious Disease Organization University of Saskatchewan</p> <p>Generation of an efficacious H7N3 avian influenza vaccine by reverse genetics</p> <p>Avian influenza is a viral infection that can spread easily and quickly among birds. Because Saskatchewan is on major migratory bird flyways, it is at risk of an avian influenza outbreak. In 2007, a farm near Regina had an outbreak of the H7N3 virus resulting in the destruction of approximately 50,000 birds. Traditional egg-grown methods of developing influenza vaccines are time consuming and often unsuccessful. Reverse genetics, the generation of influenza virus from DNA, is a promising technique for the generation of vaccines because of its low cost, efficacy and speed at which the vaccine can be developed.</p> <p>The major objective for this project was to develop an efficacious vaccine against avian influenza by reverse genetics. The project was approved in July 2006 at a total cost of \$50,000. The project was also funded by the Alberta Funding Consortium. A genetically stable H7N3 vaccine was developed that when injected intramuscularly with a CPG adjuvant induced a strong immune response. Future research may involve testing the intranasal delivery of the vaccine developed in this study. More importantly, the study produced a technology to rapidly produce vaccines for any new influenza strains that may emerge in the future.</p>	2009

<p>Dr. J. Prescott University of Guelph</p> <p>Oral immunization of broiler chickens against necrotic enteritis and other enteric infections using an attenuated Salmonella vaccine</p> <p>Building on research that was previously funded by SCIDF, 'Vaccine Based Control of Necrotic Enteritis', Dr. Prescott was attempting to develop a vaccine for necrotic enteritis using two immunogenic clostridial proteins expressed in a <i>Salmonella</i> vaccine vector. This project, which was approved in February 2008 for \$25,000 over two years, was also supported by the Ontario Ministry of Agriculture and Food, the Poultry Industry Council and NSERC. The oral vaccines that were developed provided significant protection against necrotic enteritis but none were superior to vaccines injected intramuscularly. One important conclusion from this study is that there are elements of empiricism in the choice of vectors which will need to be addressed in future studies. The degree of protection against necrotic enteritis provided by the vaccines developed in this and the previous study, support the value of continuing with this work.</p> <p><i>Journal Articles:</i></p> <p>Jiang, Y.-F., Kulkarni, R. R., Parreira, V. R., Poppe, C. Roland, K. L., Prescott, J. F. 2010. Assessment of two <i>Salmonella enterica</i> serovar Typhimurium-based necrotic enteritis vaccines in reducing colonization of chickens by <i>Salmonella</i> serovars of different serogroups. Can, J. Vet. Res. (in press). http://dx.doi.org/10.1016/j.jviromet.2005.10.018</p>	2009
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