



IMM-031

EFFICACY OF RESPIPORC® FLUPAN H1N1 UNDER FIELD CONDITIONS

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Introduction

Due the lack of an efficacious vaccine against the globally spreading pandemic subtype of Influenza A virus in swine, IDT Biologika developed an inactivated full virus vaccine for use in pigs based on a human pandemic virus isolate from 2009. Proof of efficacy under field conditions is one requirement to achieve market authorisation by EMA.

Material & Methods

Administration of vaccine or placebo (NaCl) was performed at a commercial farm. In total, 39 pigs were injected at 53 to 56 days of life with either Respiorc® FLUpAn H1N1 (n=19) or placebo (n=20) followed by a second vaccination 3 weeks later. Challenge of the pigs (n=39) was performed at infection unit at IDT Biologika headquarter. Inoculation dose was $9.39 \log_{10}$ TCID₅₀ of a heterologous pandemic H1N1 field virus isolate from Spain administered by nebulization. Primary efficacy parameters were reduction of viral lung load, nasal excretion, and clinical signs followed by seroconversion. Clinical investigations, blood and nasal swab sampling and necropsies including lung samplings were conducted in frame of ethical guidelines.

Results

Vaccinated animals showed significant reduction in viral lung load ($p=0.002$ to 0.004) and highly significant reduction in viral shedding ($p < 0.0001$) compared to placebo group. Seroconversion was detected in all vaccinated animals 8 days post 2nd vaccination. Furthermore, clinical score dyspnoea was relatively reduced by 99% compared to placebo group in the mean cumulative score.

Discussion

This study shows that pigs vaccinated with Respiorc® FLUpAn H1N1 under field conditions are protected against heterologous pandemic field challenge strain is the appropriate tool to stimulate an active immunity in the European swine population against the widely present subtype pdmH1N1(2009).