

PORK SAFETY

Title: Pharmacokinetics and tissue residues of procaine penicillin G in sows after administration of 33,000 IU/kg intramuscularly and by needle-free injection - Part A - Live Animal Work – NPB #07-235

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Scientific Abstract

Forty sows were utilized in a study to determine the plasma concentration profile and tissue residues of procaine penicillin G after injection by two methods (20 sows each method). A target dose of 33,000 IU/kg (5 ml/100 lbs) of a 300,000 IU/ml commercially available procaine penicillin G suspension was injected by either conventional intramuscular injection with a needle (CI) or injection by needle-free device (NF) in the hip. Live animal work including treatment and tissue collection was conducted at Iowa State University and is reported here. Sample analysis and pharmacokinetic work was conducted at Kansas State University and is reported elsewhere.

For the plasma concentration study, 15 plasma samples were taken over 24 hours from 8 pigs in each of the two treatment groups. Plasma concentrations were determined by Ultrahigh-Pressure Liquid Chromatography coupled with a triple quad mass spectrometer at Kansas State University and reported elsewhere. No further analysis was conducted as part of the live animal work at Iowa State University.

In the tissue residue study, samples of kidney, liver, fat, muscle, and injection site were collected at 2, 4, 6, and 8 days post-injection. There were no statistically significant differences in histological examination of the injection sites.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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