NORMAL PHYSIOLOGICAL & PATHOLOGICAL VALUES FOR THE SINCLAIR MINIATURE SWINE

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ABSTRACT
The Sinclair miniature swine (SMS) is the oldest strain of miniature swine developed for research; it is one of the smallest as well. In an effort to generate a database of baseline information about the normal physiological status of the SMS, information was retrospectively collected from control animals in various toxicology studies, as well as from studies designed solely to collect baseline information. We are reporting physiological data from normal intact and naive juvenile and young adult SMS of both genders, including weight and body measurements, hematology, serum chemistry, coagulation profile, urinalysis, electrocardiograms (ECG), and organ weights.

INTRODUCTION
Miniature swine have become well-established as a non-rodent model in regulatory toxicity, and the Sinclair miniature swine is the oldest strain of miniature swine developed for research. The similarities between the cardiovascular, renal, and digestive systems of swine and humans make them a suitable animal to model the human counterpart; they are also amenable to all routes of compound administration. Additional attractive traits that make them a good substitute to model humans are that they are omnivorous, easy to handle, prone to obesity, and will develop atherosclerosis and dyslipidemia when fed a high fat diet. The resultant data from this retrospective study will benefit the SMS as one of the non-rodent species in research by providing baseline information with which to correctly interpret regulatory toxicity and other testing results.

MATERIALS & METHODS
• Data were retrospectively collected from SMS used as controls in toxicity studies as well as from studies designed solely to collect baseline information.
• Expanded physiological data were compiled, including growth parameters, hematology, serum chemistry, coagulation profile, urinalysis, electrocardiograms (ECG), and organ weights.
• Data were expressed in terms of mean ± standard deviation (SD) and of range.

RESULTS
Juvenile and young adults are the most common age of miniature swine used for toxicity studies, as reflected in Tables 1 – 5 and Figure 1.

CONCLUSION
The collected information is a valuable resource to research investigators, and will continue to aid them in placing study findings in their proper perspective as we maintain a current collection of data.

REFERENCE