

Miniature swine are a viable non-rodent option for preclinical studies, and are an accepted research species by regulatory authorities across the world. With the use of historical data, the miniature swine model can support a variety of research areas, making them advantageous for many of your nonclinical programs.

## 10+ YEARS' EXPERIENCE

We have conducted 537 studies with miniature swine to date, and have extensive knowledge and experience in GLP and non-GLP studies, with both small molecules and biologics. Our experts can begin your studies within six to eight weeks of your contract signing.

Our 325,000-square-foot facility in Columbia, MO, specializes in preclinical research in miniature swine. It offers 80 custom-designed animal rooms, and one of the largest miniature swine populations in the United States (~1,150).

## Available Dosing Routes:

- Aural
- Buccal
- Dermal (topical)
- Intra-articular
- Intra-bladder (females only)
- Intramuscular
- IV bolus
- IV infusion
- Oral (gavage and capsule)
- Subcutaneous-injection or surgical implant
- Sublingual
- Targeted GI sections for infusions/repeat bolus dosing

## THERAPEUTIC AND RESEARCH AREAS



### Dermal Studies

Toxicity testing, GLP-compliant dermal and transdermal toxicology, and safety pharmacology studies.



### Inflammation Studies

Inflammation services with the miniature swine model includes wound healing in normal and diabetic miniature swine.



### Metabolic Diseases

Miniature swine diabetes induction, and evaluation of candidate therapeutics. Glucose tolerance, insulin resistance testing, and insulin potency testing are routinely included in studies.



### Wound Healing

We can provide guidance on your wound healing program in miniature swine, while ensuring the highest level of animal welfare.

# BREED SELECTION

Species selection for your preclinical studies must always be driven by sound, scientific rationale. Our experts will evaluate all available data, and help to guide your species selection to inform a final, rational, and appropriate decision.

## AVAILABLE MINIATURE SWINE BREEDS

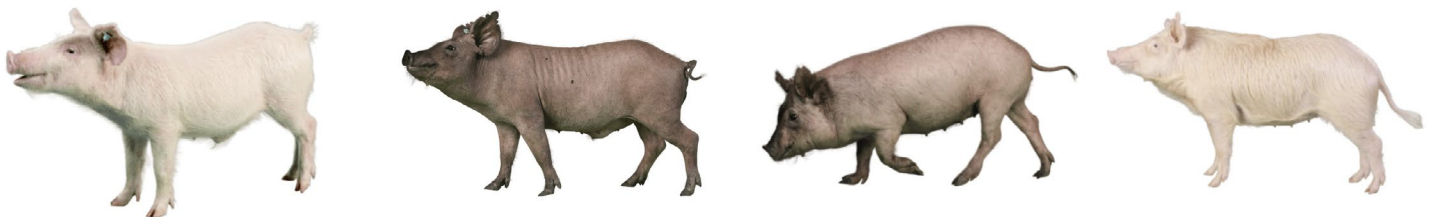
Years of experience has given us in-depth knowledge of how to effectively incorporate a range of miniature swine breeds into our research programs. Each with their own advantages, we are experienced working with the following lineages.

BREED	AVERAGE WEIGHT AT MATURITY
Sinclair Nanopig™	7-9 kg
Hanford miniature swine™	32-33 kg
Yucatan miniature swine™	20-26 kg
Göttingen minipig™	9-11 kg



## MINIATURE SWINE MODEL APPLICATIONS

Our pharmacologists and toxicologists, as well as veterinary surgeons, have successfully incorporated miniature swine in a wide variety of therapeutic studies—including inflammation, oncology, CNS disorders, HIV, and dermal. This combined expertise in a variety of modalities and disease indications support *in vivo* studies to progress the development of your novel drug candidate.



## WHY SHOULD YOU CHOOSE MINIATURE SWINE FOR YOUR STUDIES?

- Versatile for dermal and non-dermal studies
- Physiological similarity to humans
- Larger blood volume than nonhuman primates (NHPs)
- Docile and easy to train
- Less costly than NHPs—equal to the cost of dogs
- Recommended by FDA for dermal and cardiovascular studies
- Carry less zoonoses
- Faster reproductive cycle and rapid sexual maturity
  - female: 16 to 19 weeks
  - male: 22 weeks
- Fewer ethical considerations due to categorization as a food animal
- Readily available stock
- Most options for administration