

Göttingen Minipigs[®]



Clean pigs for

clear results



Ellegaard
GÖTTINGEN MINIPIGS A/S



By Jens Ellegaard, Chief Executive Officer

Ellegaard Göttingen Minipigs A/S was founded on the idea that scientists in biomedical research were in need of a better non-rodent research model with clearer advantages over the established models of dogs and primates. We envisioned a research model that would have many similarities to humans, be small and easy to handle and have a clean and known health status. In other words, we wanted to give the researchers an optimal research model that could support them in their quest for clear results!



The Göttingen Minipig has fulfilled this vision. We believe in science, in knowledge, in knowhow and in sharing our expertise, all the while that knowledge will always meet knowledge and that our knowhow will help others achieve progress. And we believe in networking among those who know the Göttingen Minipig®!

Even though we have grown considerably since we started in the early 1980's, our core values remain the same: we believe in high standards of animal welfare, in showing respect in everything we do, in closely collaborating with one another and our customers, and in complying with high standards of quality for our Göttingen Minipigs®, our work and our services. We hope that our values permeate everything we do!

Looking forward, we see a world of possibilities and a lot of uncharted territory yet to be explored. We expect to excel in these efforts, but also realise how the stability of our products and core services is essential for those with whom we work. Therefore you can also expect small, clean, microbiologically defined Göttingen Minipigs®, highly reliable deliveries, service and support as well as access to a network of science and knowledge from Ellegaard Göttingen Minipigs in the future. That's a promise I dare to keep!

As Chief Executive Officer of Ellegaard Göttingen Minipigs, it is my personal goal that you will always experience how we, at Ellegaard Göttingen Minipigs, work hard to make a difference for you. I sincerely hope this is obvious!

Sincerely,

A handwritten signature in blue ink that reads "Jens Ellegaard". The signature is written in a cursive, flowing style.

Clean pigs - for clear results

Göttingen Minipigs®



Göttingen Minipigs® are available in large uniform groups.



They are friendly, well socialized and easy to handle.

Barrier-bred Göttingen Minipigs® should be considered along with dogs and primates when choosing the most suitable non-rodent species for drug development and regulatory studies. Available in large, uniform groups with a well-defined genetic background and a unique health status, the Göttingen Minipig® is a reliable model for pharmacodynamics, pharmacokinetics, toxicology, experimental surgery and fundamental science.

Genetic management is performed in collaboration with the University of Göttingen to ensure that the Göttingen Minipig® is as outbred as possible while maintaining important characteristics such as small size, light skin color, and good temperament.

Barrier-bred Göttingen Minipigs® have a unique health status and have been tested for a wide range of pathogens based on FELASA recommendations. The well-defined health status makes interpretation of pathological findings in toxicity studies easier as confounding findings effects caused by past disease are limited.

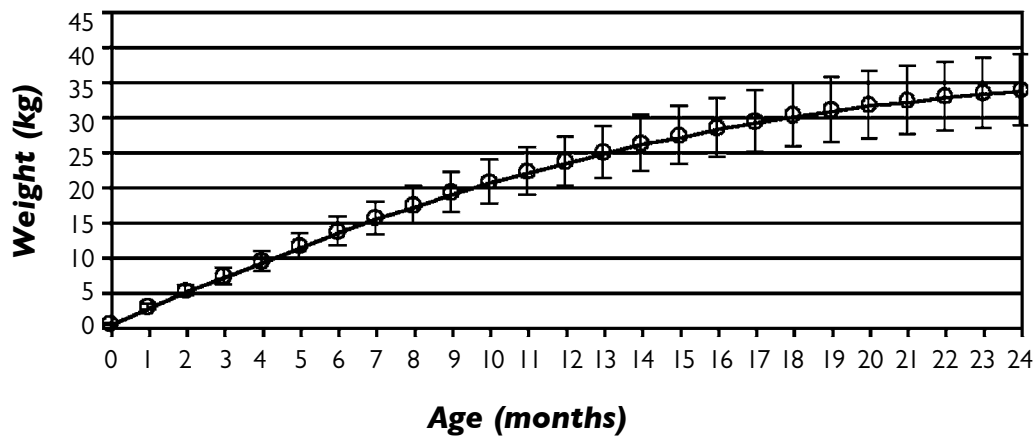
Studies performed on Göttingen Minipigs® are fully recognized by regulatory authorities worldwide and have supported non-clinical development of marketed drug products covering many treatment areas including: psoriasis, diabetes, osteoporosis, ophthalmology, arthritis, hypertension and Parkinson's disease.

Biological products including cell fractions are available from Göttingen Minipigs® for initial in-vitro screening or other research purposes are available upon request.

Moving to an intelligent strategy of non-rodent species selection, one should take into consideration:

- Species-specific inadequacies such as exaggerated sensitivity, emesis, cardiovascular effects, and histamine release
- Pharmacokinetic and drug metabolism such as adequate exposure and presence of human key metabolites, if any
- Precedence – Non-clinical studies in minipigs have supported marketed drug products in various treatment areas, such as: psoriasis, diabetes, osteoporosis, ophthalmology, arthritis, hypertension and Parkinson's disease. (Case studies are available upon request)
- Process-oriented questions of suitability, costs, resource availability, and support such as staff training and knowledge sharing

Sexually mature at only 7-11 kg



Sexual maturity males: 3-4 months of age (7-9 kg)
Sexual maturity females: 4-5 months of age (9-11 kg)
Closure of growth lines: 18+ months of age
Fully grown: 24 months of age (~35 kg)



Göttingen Minipigs® are the smallest purpose-bred pigs among minipigs available for research. They reach sexual maturity at 3 to 4 months of age for males weighing 7 to 9 kg and at 4 to 5 months of age for females weighing 9 to 11 kg. The small size makes them ideal models if only limited test article is available. Full-grown adults weigh only 30-35 kg, making them suitable for long term studies where other swine breeds may become too large. In fact, many of our customers only need to make minor modifications to existing dog pens to house Göttingen Minipigs®. The housing and handling procedures used for minipigs are also more similar to those used for dogs than for larger swine breeds.

Genetic background

The Göttingen Minipig® was bred at the University of Göttingen (Germany) in the 1960s. It originates from crossing the Minnesota mini-pig with the Vietnamese potbelly pig and the German landrace. This cross-breeding combined the Minnesota minipig's genotype with the fertility of the Vietnamese potbelly pig and the white phenotype of the German landrace. The goal was to develop a genetically outbred minipig with a low adult weight and white skin with sparse hair. These goals are still included in our genetic management.

The University of Göttingen is responsible for the overall genetic management of all Göttingen minipig breeding colonies. For many years, genetic management was practiced through a line breeding system. Today, the University of Göttingen has introduced a new population-genetics calculation system based on two components: the estimation of breeding values from selected traits and new breeder selection and mating decisions according to the concept of optimum genetic contributions.

If genetic material is lacking in a breeding colony, full genetic back-up is secured among Ellegaard Göttingen Minipigs A/S (Denmark), the University of Göttingen (Germany), Marshall BioResources (USA) and Oriental Yeast Co. (Japan).

Health and animal welfare at its best

Health status

In early 1990, it was recognized that Göttingen Minipigs® had to be microbiologically defined in order to follow modern developments in laboratory animal science.

Microbiological standardization is necessary because of the possible interference of pathogens with experimental results. The known effects of microorganisms on animal experiments are pathological changes, immunomodulation, physiological changes, interference with reproduction, competition of pathogens with the animal, oncogenesis and contamination of biological products.

Using microbiologically defined animals for experiments reduces the influence of these factors. Barrier-bred Göttingen Minipigs® are produced in independent, full-barrier, SPF facilities to ensure microbiological quality. The colonies are health monitored twice a year, based on FELASA recommendations.

Animal welfare

Animal welfare is a major concern of Ellegaard Göttingen Minipigs A/S. The facility has been fully accredited by the "Association for Assessment and Accreditation of Laboratory Animal Care" (AAALAC) since 1998.

All procedures in the full-barrier breeding facility are described and carried out as standard operating procedures (SOPs). These procedures include a comprehensive socialization programme where the minipigs have daily, positive contact with staff members. Group housing in compatible groups and pen design, including toys that maintain interest in playing, are other major factors that ensure a high level of animal welfare and accommodate the needs of the minipigs.



Göttingen Minipigs® have a friendly, calm temperament because they are accustomed to human contact. One of our staff's daily assignments is to socialize with the minipigs.

Our customer services

Support beyond the standards you expect

We welcome questions of any kind regarding Göttingen Minipigs® and our professional staff are ready to assist you. Our veterinary support is available for assistance before, during and after your studies involving Göttingen Minipigs®.

An extensive amount of background data is available in our literature database, and we provide scientific advice and assistance, if so required. In many cases, we can provide contact to colleagues in your own field for the exchange of non-proprietary scientific and technical knowledge.

Courses in handling, dosing and surgery

In order to maintain the minipigs' willingness to cooperate, it is of great importance that the staff who handle the minipigs in a study are well acquainted with the correct handling of the pigs in different procedures.

We offer handling courses to our customers who work with Göttingen Minipigs®. The participants are trained in the housing, feeding and stress-free handling of minipigs. A handling course usually lasts one day and includes theoretical information and practical exercises in various procedures such as restraint, blood sampling and dosing. Please contact us if you would like us to arrange a handling course for you or your staff. Courses can also be held at a customer's facility.

Surgery courses are arranged from time to time in collaboration with the necessary expertise.

Delivery

Göttingen Minipigs® are transported to your facility in our own vehicles. We deliver all over Europe and combined freight is arranged whenever possible to minimize expenses. The vehicles are HEPA-filtered and air-conditioned and driven by our own well-trained staff.

The minipigs are transported in VariKennel transport boxes with bedding and are watered and fed regularly during transport.

If preferred, we include enough feed with the delivery for the adaptation period, and refer to the feed producer for larger quantities.



We also provide

Biological products

Ellegaard Göttingen Minipigs A/S provides a wide range of biological products and specimens, as well as limited preparation of Göttingen Minipigs®, to support your research. Blood, serum and plasma of Göttingen Minipigs® can be delivered according to your specifications.

Specimens such as organs or samples of organs, teeth, skin, biopsies and other tissues from Göttingen Minipigs® are available on request.

Please inform us of the organs you need, the removal procedure required and your organ-handling preferences during removal, storage and shipping, and we will conform to your wishes.

Auxiliary equipment

A range of auxiliary equipment is offered for the handling of Göttingen Minipigs®, such as different sizes of slings, bite bars, restraint chairs for gavaging, hammocks, restraint benches for blood sampling etc. Please ask for our complete assortment and price list.

Conventional Göttingen Minipigs®

Conventional Göttingen Minipigs® are maintained in a less controlled environment, yet have been tested for and found free from mycoplasma and actino-bacillus pleuropneumoniae. They are genetically defined, available at weights from 20 to 35 kg and cost less than barrier-bred Göttingen Minipigs®.

University Göttingen Minipigs®

University Göttingen Minipigs® are maintained in an open environment at the University of Göttingen in Germany. For sanitary reasons they are sold only in Germany and only when available.



Our history

Ellegaard Göttingen Minipigs A/S was founded on the idea that scientists in biomedical research were in need of a better non-rodent research model. Such a model should have many similarities to humans, be small and easy to handle and have a clean and known health status. The first colony of barrier bred, microbiologically defined Göttingen Minipigs® was derived in Denmark in 1992. The minipigs were obtained through Caesarean section to establish the high quality of the health standard.

Introducing a new animal model to the scientific community was not easy, even though we always met openness, empathy and understanding of the obvious potential of the Göttingen Minipig®. But there were also numerous challenges due to the scientific need for validation of this “new” model. We recognised this and took on the collecting of minipig research data through interesting collaborative efforts across the academic world and the biomedical industry. Since validation and documentation reached a critical mass, the demand for the Göttingen Minipig® has been increasing rapidly all over the world.

Our history has led us to where we are today: an international company which, by virtue of its high standards of health, quality, knowledge and service, is a global leader within the development, production and sale of Göttingen Minipigs® for biomedical research focusing on the advancement of quality of life and health. We wish to be conducive in enabling our customers to achieve the clearest scientific results possible.

This is our mission. And when working towards this goal, we lean on our values: animal welfare, quality, respect and collaboration.

We breed Göttingen Minipigs® in independent and separated barrier units at our facilities in Denmark. They are based on our respect for the animals and their welfare, on our respect for the environment and on our respect for our dedicated employees. We deliver our Göttingen Minipigs® to most of the world and have dedicated partners who supply the markets in North America and Japan. We received our first full AAALAC accreditation in 1998 and have maintained it ever since. We offer free training and advice on handling, research procedures and pen design as our way of supporting our customers in complying with the same high standard of animal welfare. We take pride in our high level of customer service and support. Göttingen Minipigs® are used in GLP and non-GLP studies alike and are recognised as research models by all regulatory authorities worldwide.

As we still believe in the value of scientific validity, research, data and collaboration, we invest an increasing share of our resources in the development and accumulation of new knowledge about the Göttingen Minipig® and in networking amongst those who know!

We believe that all of the above will lead to new achievements by our customers and our company in the future.



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