New Göttingen minipig website

Ellegaard Göttingen Minipigs and Ellegaard Minipigs USA, Inc. proudly present their new website at www.minipigs.com.

On this site you will find a large amount of information on the Göttingen minipig, as well as on both companies. Of the Göttingen minipigs, a biological characterization is given, describing the breeding history and the genetic profile. Also background for the health status and environmental conditions is explained in this section of the website. An overview of the current health status is given in the section “health reports”. Presently, the health status of barrier I and II is given, since no independent health monitoring programme is available for the USA site, yet. However, since all minipigs for the quarantine station in the USA origin from barrier II, this particular health report may be viewed as background information. In “background data”, scientific data such as hematology and clinical chemistry, background pathology, ECG and hemodynamics, as well as housing and husbandry information is presented.

Finally, information on both companies is given on their individual sections of the website, inclusive contact information. On the Danish site, possibilities for electronic ordering are present, and it is expected that this utility will also become available for the US company in the near future.

We hope you will use www.minipigs.com as a regular reference source.

Göttingen minipigs now available in the USA

Previously, we have reported that Ellegaard Minipigs USA, Inc. had been established in North East Pennsylvania, and since then, we have been working hard on getting this site up and running. The vice president, David Johnson, and site manager Kelly Wentz have achieved USDA designated private quarantine approval after weeks of intensive preparations. In the mean time, 200 Göttingen minipigs have been shipped over from the Danish multiplier herd, and passed the stringent USDA Importation Quarantine Programme recently. This all means that Göttingen minipigs are now available in the USA! Please read more on page 3 of this Newsletter.

DIA Meeting on species selection

Enclosed in this Newsletter, you will find information on a meeting organized by the Drug Information Association (DIA), on December 4-5, 2000. The reason we bring this to your attention, is that the minipig will be discussed in the section on species selection for preclinical safety testing.

Since the DIA meeting will be held in Denmark, only 90 minutes away from Ellegaard Göttingen Minipigs, we would like to offer the participants of this meeting an excursion to the breeding facilities for the Göttingen minipig. Further information will be forwarded after registering for this meeting.

Latest health reports clear Clostridium infection

The latest health reports, enclosed in this Newsletter, showed that both barriers were negative for Clostridium perfringens. This infection was found during the previous health monitoring, on November 26, 1999, but may have been a false positive result. We are glad that the present health reports gave a negative result, which confirmed our suspicion of a false positive result.
MHC-defined Göttingen minipigs

by Birte Kirstensen & Anette Grønkjær
Dept. of Veterinary Microbiology
Lab. of Virology and Immunology
Royal Vet. & Agricul. University (RVAU)
DK-1870 Frederiksberg C, Denmark

Introduction
Pigs are well suited research models for developing clinical transplantation techniques for humans, because of many anatomical and physiological similarities between humans and pigs. However, for successful transplantation research, tissue types of donor and recipient should match. Tissue types are controlled by the genes from the major histocompatibility complex (MHC) in pigs called swine lymphocyte alloantigens (SLA). A prerequisite for using Göttingen minipigs as transplantation models is therefore the determination of their SLA type.

The classical expressed SLA class I locus products are designated SLA-A,B,C. Panels of alloantisera for SLA-typing have been developed in laboratories worldwide and the reactivity of these alloantisera are certified in international comparison tests. The present panel of SLA class I alloantisera at Laboratory of Virology and Immunology, RVAU, consists of 100 alloantisera defining 29 internationally or locally defined SLA class I antigens. Serological typing of numerous families from many different but mainly commercial swine breeds has resulted in international definition of 69 SLA class I haplotypes (H1-H68). This panel of alloantisera was used to type breeding stock and families of Göttingen minipigs for SLA class I.

Definition of SLA class I haplotypes in Göttingen minipigs
The SLA class I typing of breeding animals demonstrated a high frequency of haplotype DC80 and presence of haplotype H04. Both haplotypes were shown to segregate as independent and co-dominantly inherited haplotypes in several families.

Haplotype H04 or FJ13, W9 is one of the classical haplotypes defined by serology. H04 is equivalent to haplotype d (SLA d) in the SLA-defined NIH minipig, which has been developed for, and used extensively in experimental transplantation research. SLA d has been cloned and only 2 genes are expressed (PD1 and PD14), which corresponds to the serologically defined alleles FJ13 and W9 of H04. In addition serotype H04 has been defined with 1D isoelectrical focussing (IEF) typing and a unique IEF banding pattern (HF04) for this haplotype exists. Furthermore, in addition to serology DC80 is also identified by a particular IEF-banding pattern (HF80). DC80 is relatively frequent in Danish commercial breeds and has recently been identified in commercial Swiss breeds.

Perspectives
Göttingen minipig with haplotype DC80 may be used to produce litters with defined SLA class I genotypes and such animals will be useful for experimental transplantation studies. Furthermore, SLA-defined minipigs would be useful for immunological studies, because there is good evidence that particular SLA haplotypes influences immune responsiveness. Finally, SLA-defined Göttingen minipigs would facilitate basic immunological studies on the role of important effector cells such as cytotoxic T-cells, which are at least in part SLA class I restricted, for protection against infectious diseases.

References

Availability of MHC-defined Göttingen minipigs
Ellegaard Göttingen Minipigs presently offers the scientific community MHC-defined Göttingen minipigs. Currently available are compatible pairs with haplotype DC80, but on request we may breed other haplotypes.

For information, please contact Ellegaard Göttingen Minipigs at: +45 5818 5818
Göttingen minipigs now available in the USA

by David K. Johnson, DVM
Vice President
Ellegaard Minipigs USA, Inc.
2025 Ridge Road, Perkasie, PA 18944
(215) 258-5090, ellegaard@pil.net

Ellegaard Minipigs USA Inc. is pleased to announce that we have Göttingen minipigs available now for the USA. We have passed a stringent USDA Importation Quarantine Programme. Our facility is an approved USDA designated private quarantine station for research miniature swine. Our site is south of Allentown, Pennsylvania nestled in the rolling foothills of the Pocono Mountains.

The US (left) and Danish site managers Kelly Wentz and Charlotte Nicolaisen in front of the quarantine station for Göttingen minipigs.

We have 200 minipigs in pristine health for distribution to biomedical research institutions across the USA. For more than 15 years, the Göttingen minipigs have proven themselves in Europe and Japan as outstanding animal models for GLP studies, drug metabolism & pharmacokinetic studies, reproductive toxicology studies, dermal toxicology studies, cardiovascular studies, and many other development and discovery studies. The FDA and other regulatory agencies have accepted all data from these overseas sites. Now that this animal model is available in the USA, their contribution to the scientific community adds an enriched and expanded resource for USA scientists. Please review our recent updated web page: www.minipigs.com.

We are proud of our site manager, Kelly Wentz, for her excellence in directing this facility. Kelly has a bachelor degree in Agriculture & Biology with extensive experience of swine manage-

ment and welfare. She raised swine on her parents Pennsylvania farm and remains active in 4-H activities.

Our barrier facilities are constructed of exterior metal and interior fiberglass materials. Exterior windows allow visitors a full view of the operations. An air lock allows the safe passage of materials and minipigs that safeguards the pristine health of our animals. For the staff that enters the facilities there are five passageways before entering the animal holding area. Strict procedures are in place including a full shower and donning of special garments.

The health status of these minipigs is exceptional. We conduct an exhaustive list of diagnostic tests testing for viruses, bacteria, and parasites. Please check out our health status reports on our web page. In addition, we have a background of biological data as well as literature searches on these minipigs available. We are also pleased to share published research results and provide professional consultation to our customers.

We would ask that you notify us of interest in our minipigs. This can be for current or future studies. As we meet our customer needs, we can then project the next importation of minipigs from our production stock in Dalmoose, Denmark. We provide direct transportation service of these minipigs to your facility. We will also offer biological services and tips for the successful care and research application of these minipigs tailored to your research programmes.

Please arrange for a visit to our site. We will be pleased to identify the special attributes of our Göttingen minipigs.

Donna Kernechel will answer you phone call at (215) 258-5090
VALIDATION OF THE MINIPIG IN PHARMACOLOGY AND TOXICOLOGY

In October 1999, Ellegaard Göttingen Minipigs invited 20 experts in the field of pharmacology and toxicology, for discussing the minipig as a model in this field of science. The goal was to set new aims for further characterization of the Göttingen minipig as a research model. The two days meeting, which had the character of a workshop, was quite a success, and areas in which the Göttingen minipig needed more definition were identified and prioritised.

The three areas of interest were identified:

Cardiovascular system: With the recent interest in QT-interval prolongation, more background data was wished on the standard ECG of the Göttingen minipig. Also improvements of recording techniques are desirable, since standard limb leads may give variable results.

Metabolism: The liver CYP-450 system should be further characterized. Not only phase I activity should be studied, but most of all, cDNA sequencing of isoenzymes CYP3A, CYP2E1 and CYP1A2 was found desirable. Moreover, activity measurements of phase II reactions in hepatocytes was found relevant.

GI tract: Many questions were placed at the variability of gastric emptying and total passage time of the GI tract of the minipig. A standardized minipig model for oral studies was considered necessary.

At the moment, studies in these three fields are being performed by different groups, and the first results are awaited before the end of this year. Of course, we will keep you informed about the proceedings of the project.

*Peter Bollen M.Sc.*
*Scientific Manager*

Forthcoming exhibitions

Ellegaard Göttingen Minipigs and Ellegaard Minipigs USA, Inc. will participate in the following exhibitions:

- 38th GV-Solas Meeting, Essen, Germany, September 11-14, 2000.

Further exhibitions will be announced later.