

85 randomly selected Holstein cattle in Japan by polymerase chain reaction-sequence based typing (PCR-SBT). The mastitis cattle were divided into four groups according to the bacterial species causing the mastitis (Staphylococcus aureus, Streptococcus, Escherichia and coagulase-negative staphylococci). The BoLA-DRB3 and BoLA-DQA1 heterozygosity of each group was compared to that of the control cattle. The expected heterozygosities based on Hardy-Weinberg proportions and the observed heterozygosities for each locus were compared for each group. The Escherichia and Streptococcus mastitis groups showed significant differences between their expected and observed heterozygosities with regard to their BoLA-DQA1 genes. No differences were observed for any group with regard to the BoLA-DRB3 genes. We then found that two BoLA-DQA1 alleles promoted susceptibility to mastitis caused by Streptococcus, namely BoLA-DQA1\*0101 and BoLA-DQA1\*10012, and that the homozygous BoLA-DQA1\*0101/0101 and BoLA-DQA1\*10011/10011 genotypes promoted susceptibility to mastitis caused by Streptococcus and Escherichia, respectively. This is the first report in Japan showing that heterozygosity of the BoLA-DQA1 gene is associated with resistance to mastitis progression.

#### Poster 5035

##### **Title: The “Osservatorio Italiano HCM Felina”: a Feline Inherited Diseases Network in Italy**

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##### **Abstract :**

In Italy cat breeders are scattered in many associations and breed fan clubs. The availability of new genetic tools for inherited disease identification and the possibility of shipping buccal swabs directly from the cattery to diagnostic Labs, prevent a real control of veterinarians, geneticists and breed associations on diagnosis and selection of the diseases.

In 2008 to overcome the absence of a network the Italian Observatory on Feline Hypertrophic Cardiomyopathy (HCM) has been constituted. So far it associates the Italian Main Coon and other breed clubs, the Milan University (Spin-off Vetogene) and selected clinicians.

Main targets: 1) scientific monitoring on the cat inherited disease in Italy, mainly HCM, so far; 2) supporting to breeder in the selective choices; 3) constitution of a biological and data bank for further scientific studies; 4) improving link among cat breeders, selected veterinarians and scientific community, for the first time in Italy. A cat joining the Observatory is submitted to microchip implant, periodical clinical controls, DNA tests and blood storage. Data are anonymously available to Observatory associated.

Breed statistics, correlation between clinic and genetic results and some discussion on possible spin-off on feline genetic research are also proposed.

#### Poster 5036

##### **Title: The trend of the inbreeding in the course of time in “Bracco Italiano” dog breed.**

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##### **Abstract :**

We refer on a genealogical study on the “Bracco Italiano” dog breed, with the aim to study the investigate the trend of the inbreeding during a period of 38 years. The complete electronic record of the breed, including 20,499 animals born between 1970 and 2007, was downloaded from the ENCI database. Animals were divided in eight periods according to their year of birth. The following genetic parameters were calculated, using the program CFC: a) the level of inbreeding (F) of the total population; b) the individual inbreeding; c) the number and the percentage of inbreds and the average inbreeding coefficient in the inbreds animals for five-year periods.

The inbreeding coefficient was <0.05 in 8,103 dogs (39.53%) whereas it was >0.20 in 487 dogs (2.51%). The average inbreeding coefficient over all animals resulted 3.6% (from 0.4% in 1970-1975 to 5.5% in the last two years). The percentage of inbreds per year increased from 2.44% in 1976-1980 to 100% in the past two years. It is concluded that a regular monitoring of genetic variability of the population must be adopted, in order to avoid the danger of an

excessive increase of inbreeding in the future, which would result in significant inbreeding depression.

#### Poster 5037

##### **Title: The prion protein gene (*Prnp*) polymorphisms in Slovenian sheep breeds**

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##### **Abstract :**

Scrapie is the transmissible spongiform encephalopathy (TSE) that occurs naturally in sheep. Three scrapie-linked polymorphisms in the prion protein gene (*Prnp*) located at the codons 136, 154 and 171 modulate the susceptibility to classical type of scrapie. In order to evaluate the *Prnp* polymorphisms in Slovenian sheep breeds and to evaluate the genetic susceptibility through the years sheep of four breeds (Bela Krajina Pramenka, Bovska sheep, Istrian Pramenka, Jezersko-Solcava) *Prnp* polymorphisms were analyzed from the year 2005. Polymorphisms at codons 136, 154 and 171 were determined by nucleotide sequencing of the *Prnp* and by allelic discrimination assay. Each year different sheep were randomly sampled for *Prnp* genotyping. The most frequent genotype in all Slovenian sheep breeds is ARQ/ARQ. Animals carrying this genotype are moderately susceptible to scrapie. The allelic variant VRQ, known to carry very high risk of scrapie is only poorly represented in the population of the examined Slovenian sheep breeds and is decreasing through the years. Slightly more abundant is the allelic variant ARR that is typical for sheep resistant to scrapie. This allelic variant is increasing through the years.

#### Poster 5038

##### **Title: Viral-vector Mediated Transgenesis in the Göttingen Minipig Brain**

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##### **Abstract :**

Transgenic large mammals for modelling human diseases are receiving increasing interest as potential elaboration of rodent models. Pigs offer splendid anatomic, physiologic, and genetic recapitulation of humans, avoiding ethical concerns with primates used for experiments. Particularly the architecture of the pig CNS provides an attractive basis for modelling neurological diseases. The considerable longevity expected for transgenic pigs to develop age-related neurodegenerative disorders has made us attempt to establish a proof of concept with surgery based, virus mediated gene transfer in Göttingen minipigs. Three anaesthetised minipigs were MRI-scanned for determination of coordinates for *substantia nigra* (SN). The animals then received six stereotaxic, unilateral deep brain injections with recombinant lentivirus harbouring the *EGFP* gene. After four weeks, the animals were euthanised, brains dissected, and relevant tissues recovered. Histology showed injection points targeting SN as visualised by Nissl staining while subsequent immunohistochemical staining with anti-*EGFP* demonstrated transgene expression and transport to striatum. PCR analysis confirmed presence of the *EGFP* gene in SN but not in striatum, reflecting the presence of the neuronal cell nuclei in SN, and axons extending to striatum. The obtained results indicate the present technique to be an efficient means of transducing discrete, selective tissues of the Göttingen minipig brain.

#### Poster 5039

##### **Title: Profile of the Circulating DNA in Healthy Cattle**

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##### **Abstract :**

Circulating nucleic acids (CNAs) have been shown to have diagnostic utility in human diseases. The aim of this study was to sequence and organize DNA obtained from serum of apparently healthy cattle providing an extensive catalog of the circulating DNA profile.