A GENETIC STUDY ON THE HISTORY AND KINSHIP OF THE *EINSIEDLER* HORSE

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Since about the year 1000 A.D., the *Benedictine Abbey Einsiedeln* in central Switzerland is known for its horse breeding activities and livestock trading ("*cavalli della madonna*"). Einsiedler horses were also known and dispersed as horses from *Schwyz* and Napoleon recruited them on his way to Russia in the early nineteen hundreds. In the 1970-ties the *Swiss Sporthorse Breeding Association* was founded and Einsiedler horses were registered to this organisation. Swiss sporthorses are a composite breed genetically influenced by all kind of european sporthorse breeds (e.g. from France, Germany, Ireland, Sweden). The goal of the present study was to analyse whether remaining Einsiedler stock, identified from pedigree entries, differs on a genetic level from the average of swiss and european sporthorse populations, respectively.

We first analysed mtDNA sequences from 100 horses of different horse breeds, including Einsiedler horses from the few remaining maternal lineages. Special emphasis was given to two apparently most ancient maternal lines. The earliest still existing and available pedigree annotations for those, going back as far as to the middle of the 19th century. According to the nomenclature proposed by Vilà et al. (2001) and Jansen et al. (2002), these two Einsiedler lineages clustered into the clades A and D, comprising also of an important number of horses from iberian populations. Iberian horses were well known for their riding capability and were traded among royals and the church since the 11th century. Therefore, it seems plausible to find "iberian haplotypes" in a local population of horses, mainly controled by an abbey for several centuries. A second analysis concerned the diversity, demarcation and individual assignments of the selected horses, assessed by 44 microsatellite markers, dispersed over all 31 autosomal horse chromosomes and the X-chromosome.

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