

ANALYSIS OF MC1R PIGMENTATION GENE IN THE HUNGARIAN POPULATION OF GOLDEN JACKAL (*CANIS AUREUS*)

Péter Fehér^{1,2}, Nóra Ninausz^{1,2}, Adrienn Pásztor¹, László Szabó³, László Szemethy⁴, Miklós Heltai³, Viktor Stéger¹, László Varga¹

¹ Hungarian University of Agriculture and Life Sciences, Institute of Genetics and Biotechnology, Szent-Györgyi Albert Str. 4., H-2100 Gödöllő, Hungary

² Doctoral School of Animal Biotechnology and Animal Science, Hungarian University of Agriculture and Life Sciences, Páter Károly Str. 1., H-2100 Gödöllő, Hungary

³ Hungarian University of Agriculture and Life Sciences, Institute of Wildlife Management and Nature Conservation, Páter Károly Str. 1., H-2100 Gödöllő, Hungary

⁴ University of Pécs, Institute of Regional Development, Rákóczi Str. 1., H-7100 Szekszárd, Hungary

The golden jackal (*Canis aureus*) is a widespread opportunistic mid-sized canid, distributed throughout Southern Asia, Middle East and South-Eastern and Central Europe. European populations have undergone significant population changes in recent decades. The melanocortin-1 receptor (MC1R) is one of the most important genes in melanin synthesis and is the most widely studied pigmentation gene in wild population of mammals. The aim of this study was to detect whether the well-known white (Arg306Stop) and the melanistic mask (Met264Val) non-synonymous coat colour mutations of the dog occur in the Hungarian golden jackal populations, or not. Muscle tissues were obtained from free-ranging animals legally shot between 2004 and 2016 in Hungary. Samples were analyzed by a PCR-RFLP method using *Nla*III and *Eco*47III restriction sites. Two out of thirty-two individuals with phenotypically visible melanistic mask were heterozygous (6.25%) and one was homozygous (3.13%) for Met264Val variant, which resulted 0.06 observed (H_o) and 0.17 expected (H_E) heterozygosity. Furthermore, also two out of twenty-five individuals with white coat were heterozygous (8%) and one was homozygous (4%) for Arg306Stop variant, which means 0.08 observed (H_o) and 0.22 expected (H_E) heterozygosity. This study demonstrated that the white coat colour and the melanistic mask also occur in the Hungarian golden jackal population, which have been presumably transmitted from dogs. „SUPPORTED BY THE ÚNKP-20-3-II-SZIE-7 NEW NATIONAL EXCELLENCE PROGRAM OF THE MINISTRY FOR INNOVATION AND TECHNOLOGY FROM THE SOURCE OF THE NATIONAL RESEARCH, DEVELOPMENT AND INNOVATION FUND.”