



DNA extraction from hair shafts of wild Brazilian felids and canids

C.C. Alberts¹, J.T. Ribeiro-Paes¹, G. Aranda-Selverio²,
J.R. Cursino-Santos⁶, V.R. Moreno-Cotulio³, A.L.D. Oliveira⁴,
B.F.M.M. Porchia¹, W.F. Santos⁵ and E.B. Souza¹

¹Departamento de Ciências Biológicas,
Faculdade de Ciências e Letras de Assis, Universidade Estadual Paulista,
Assis, SP, Brasil

²Departamento de Física, Química e Biologia,
Faculdade de Ciências e Tecnologia, Universidade Estadual Paulista,
Presidente Prudente, SP, Brasil

³Instituto de Ciências da Natureza, Universidade Federal de Alfenas,
Alfenas, MG, Brasil

⁴Departamento de Ciências da Saúde, Universidade Paulista,
Campus de Assis, SP, Brasil

⁵Departamento de Biologia, Faculdade de Filosofia,
Ciências e Letras de Ribeirão Preto,
Universidade de São Paulo, Ribeirão Preto, SP, Brasil

⁶Departamento de Genética, Faculdade de Medicina de Ribeirão Preto,
Universidade de São Paulo, Ribeirão Preto, SP, Brasil

Corresponding author: C.C. Alberts

E-mail: calberts@assis.unesp.br/jtrpaes@yahoo.com.br

Genet. Mol. Res. 9 (4): 2429-2435 (2010)

Received August 8, 2010

Accepted November 11, 2010

Published December 21, 2010

DOI 10.4238/vol9-4gmr1027

ABSTRACT. Wild felids and canids are usually the main predators in the food chains where they dwell and are almost invisible to behavior and ecology researchers. Due to their grooming behavior, they tend to swallow shed hair, which shows up in the feces. DNA found in hair shafts can be used in molecular studies that can unravel, for instance, genetic variability, reproductive mode and family structure, and in some

species, it is even possible to estimate migration and dispersion rates in given populations. First, however, DNA must be extracted from hair. We extracted successfully and dependably hair shaft DNA from eight wild Brazilian felids, ocelot, margay, oncilla, Geoffroy's cat, pampas cat, jaguarundi, puma, and jaguar, as well as the domestic cat and from three wild Brazilian canids, maned wolf, crab-eating fox, and hoary fox, as well as the domestic dog. Hair samples came mostly from feces collected at the São Paulo Zoo and were also gathered from non-sedated pet or from recently dead wild animals and were also collected from museum specimens. Fractions of hair samples were stained before DNA extraction, while most samples were not. Our extraction protocol is based on a feather DNA extraction technique, based in the phenol:chloroform:isoamyl alcohol general method, with proteinase K as digestive enzyme.

Key words: Felidae; Canidae; Hair shaft DNA extraction