Abstract

DNA analysis from skeletal materials is significant supplement of the anthropological methods nowadays, especially in cases, where is not possible to obtain required information pursuant to anthropological characteristics of skeletal remains. Many studies dealing with DNA extraction from ancient and recent bones concurred in fact that the most difficult phase in DNA analysis of skeletal materials is its initial manipulation and selection of suitable procedure for DNA isolation. For this thesis, four different isolating techniques (phenol-chloroform extraction, procedure based on silica adsorption – QIAamp DNA Mini kit a DNA IQ System, extraction with Dextran Blue adsorption) were chosen and their parameters were optimized for maximal DNA yield.

At comparing the quantification of selected isolating methods performed on recent skeletal materials, the phenol-chloroform extraction resulted as acceptable. This protocol enhanced by PTB (*N-phenylacylthiazolum bromide*) reagent was used on the skeletal set of eleven specimens from settlement Kněževes near Prague. Further, sex assessment was carried out by the part of amelogenin gene amplification and genetic profiles determined by STR (Short Tandem Repeat) analysis. Probable relationships were estimated on the basic of comparison of genetic profiles among specimens. Sex in three individuals belonging in age category *infant* could not be assessed by anthropological methods. In this case, DNA analysis proved as effective.

This thesis supported functionality in application of molecular-genetic methods for sex assessment of fragmental and subadult skeletal remains that have undeveloped secondary sex characteristics for anthropological determination. In archaeology, relationships among skeletal remains will be able to contribute to lifeway interpretation of this ancient population.