

## **Abstract**

The illegal trade of wildlife animal and plant species is one of the most lucrative crimes in the world. The driving force behind this unfair practice of threatening many species for survival is the largely increasing demand for raw materials used to prepare traditional Chinese medicine (TCM). Its medicinal preparations include, among others, organisms with which trade is prohibited or regulated under the CITES convention (the Convention on International Trade in Endangered Species of Wild Fauna and Flora). This international agreement clearly defines the rules of trade of wild species and products thereof, the violation of which is punishable on the basis of the legislation of a particular country. Easily standardized and accurate species identification techniques are needed to make more effective the prosecution of this type of crime. In my bachelor's thesis I am representing a summary and evaluation of DNA identification methods, which are based on the principle of hybridization, polymerase chain reaction or sequencing, including samples with degraded DNA or complex samples containing a mixture of different species. DNA barcoding is currently proven to be an optimal tool to detect the source organisms of Chinese medicine. The text is supplemented by the list of the most commonly confiscated specimens of animals and plants used for the purpose of TCM with photographs of artifacts seized by the Czech Environmental Inspectorate. This work thus could serve for customs authorities in selecting the appropriate method to prove the presence CITES organisms in raw materials and TCM preparations.

**Keywords:** CITES, traditional Chinese medicine, DNA identification, species identification, complex samples, DNA barcoding