Poster Abstract

Austrian Barcode of Life (ABOL): DNA-Barcoding of Austrian mammals – difficulties and challenges

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DNA barcoding is a method for efficiently identifying samples to species level based on short standard DNA sequences. However, reliable species assignment requires the availability of a comprehensive DNA barcode reference library. The ABOL (Austrian Barcode of Life, www.abol.ac.at) initiative aims to do this for Austria's fauna, flora and funga. With more than 100 species in Austria, mammals pose a significant part of its vertebrate fauna, and several taxa are important flagship species for conservation. Yet, generating a comprehensive DNA barcode reference library for Austrian mammals is not straight-forward as collecting fresh (voucher) material is often very difficult to (nearly) impossible because of the special animal welfare and conservation regulations that apply to vertebrates in general, and mammals in particular. Moreover, even great efforts might not guarantee sufficiently complete sampling of fresh material in a short period of time. Thus, historical museum collections represent an invaluable source for the DNA barcoding of many taxa. However, DNA extracted from historical samples is usually degraded, such that only short fragments can be amplified, rendering the recovery of the barcoding region as a single fragment impossible. Consequently, amplification and sequencing of the entire barcoding region needs to be done in several short overlapping fragments, multiplying the effort and costs per sample necessary to generate a DNA barcode. A recently developed PCR primer set that reliably amplifies the barcoding region in most Central European mammals in six overlapping fragments greatly extends the utility of historical mammal specimens from museum collections for large-scale barcoding studies.

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