

Extraction of Trace Amount of Severely Degraded DNA

Pin Lv^a, Xiangshan Zhou^{a,*}, Jinhua You^b, Bang-Ce Ye^a, and Yuanxing Zhang^a

^a State Key Laboratory of Bioreactor Engineering, East China University of Science and Technology, 130 Meilong Road, Shanghai, 200237, P. R. China. Fax: 00 86-21-64 25 30 25. E-mail: xszhou@ecust.edu.cn

^b Shandong Dongge E-jiao Co., Ltd, No. 78 E-jiao Street, Dongge County, 252201, Shandong Province, P. R. China

* Author for correspondence and reprint requests

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DNA extraction from food is always problematic especially from highly processed samples which contain only trace amounts of severely degraded DNA fragments. In this work, to extract trace amounts of small DNA fragments of the traditional Chinese medicine (TCM) *colla corii asini* derived from highly processed *Equus asinus* skin, three strategies were compared for its authentication. With some optimizations, the modified QIAquick spin column method achieved higher DNA yield and purity in comparison with the “SDS/proteinase K” method and the “Wizard magnetic DNA purification system for food” method. Further studies showed that at least 0.4 g *colla corii asini* was needed to obtain enough DNA extracts for PCR-based detection by the method and only amplicons of less than 100 bp could be generated from the DNA extracts which confirmed the efficiency of the method in small DNA fragment extraction. The DNA obtained by this method was suitable to be used in PCR-based authentications.

Key words: DNA Extraction, Highly Processed Material, Severely Degraded DNA