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RAPID AND RELIABLE GENERATION OF DNA-PROFILES FROM SKELETAL REMAINS FOR IDENTIFICATION PURPOSES

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The Forensic Molecularbiology Department of the Insitute of Legal Medicine, University of Bern has developed a procedure for the rapid generation of DNA-profiles from bones.

Traditionally the extraction of DNA from bones has involved the maceration of compact bone followed by decalcification steps prior to the purification of DNA utilizing organic solvents. This lengthy procedure required up to two weeks to produce DNA-profiles. Our routine application is primarily for identification purposes and relatives of the deceased have suffered distress due to this delay.

Through the use of dental technician drills and selected bits we have been able to obtain a fine “bone powder” for subsequent DNA-purification. This reduced the time for producing DNA-profiles to 5 days on a routine basis. Additional refinements have been the further homogenization of the bone powder with the tissue homogenizer “PRECELLYS 24” and the automated purification of DNA with the Qiagen EZ one instrument. These additional refinements have led to the generation of DNA-profiles from bone within 48 hours on a routine basis