

## **ORCHID CELLMARK'S OSTEO-PURE™ BONE EXTRACTION PROCEDURE CAPTURES DEGRADED DNA TO IMPROVE STR RESULTS**

Smitherman, C.B., Nasir, H., Hoffman, W.L., and Sinha, S.K.  
Orchid Cellmark Inc., Dallas, TX

Skeletal remains are often the last surviving and most challenging biological material from which to obtain DNA and make a genetic identification. Advances in the ability to break down these remains by pulverizing and solubilizing the material have decreased the need for high quantities of sample and provided higher yields of genetic material. However, these procedures have not been able to limit the potential problem of degraded DNA which may be encountered when working with skeletal remains. The degraded DNA can be difficult to capture and genotype and can sometimes be the only available DNA from which to obtain a Short Tandem Repeat (STR) profile. As a result, mitochondrial DNA sequencing has often been used on these types of samples in order to obtain some genetic information. STR results obtained with commercially available kits, however, can provide a higher degree of discrimination power and allow the obtained profile to be compared or incorporated into DNA databases. To improve the likelihood of obtaining STR results, Orchid Cellmark has optimized its Osteo-Pure™ Bone Extraction Procedure using commercially available columns and reagents. This protocol increases the capture of degraded DNA and, with the combination of AmpF/STR® Identifiler® and AmpF/STR® MiniFiler™ kits, has made it possible to successfully genotype degraded samples. Genotype results using this method will be presented.