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1.1.1 Title

Protein-based forensic identification using genetically variant peptides in human bone

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Highlights

- Extraction of human bone proteins are applicable to forensic analysis
- Genetically variant peptides constitute human identification markers
- Bone genetically variant peptides confirmed with sequenced DNA
- Random match probabilities obtained as low as 1 in 42 thousand
- Ancestral information gained from genetically variant peptide profiles

Abstract

Bone tissue contains organic material that is useful for forensic investigations and may contain preserved endogenous protein that can persist in the environment for extended periods of time over a range of conditions. Single amino acid polymorphisms in these proteins reflect genetic information since they result from non-synonymous single nucleotide polymorphisms (SNPs) in DNA. Detection of genetically variant peptides (GVPs)—those peptides that contain amino acid

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