古人类骨中羟磷灰石的XRD和喇曼光谱分析

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人骨残骸是生物考古的主要对象,而骨骼污染鉴别是样品选择的依据,也是生物考古的前提. 利用X射线衍射(XRD)和喇曼光谱相结合的方法,通过对新疆克雅河圆沙古城遗址出土的人类骨骼中羟磷灰石的分析,来辨析骨骼污染程度.研究结果表明,两种方法的有机结合,准确地反映了骨骼中羟磷灰石结晶度的变化,从而可简单、较为有效地鉴别古代人类骨骼样品的污染.

ANALYSIS OF HYDROXYAPATITE IN ANCIENT HUMAN BONE USING RAMAN SPECTRA AND XRD

The skeleton remains of ancient people are the main materials for bioarchaeological research. The identification of bone contamination is not only the basis to pick out the samples but also one of prerequisites for bioarchaeometry. The identification of the bone contamination degree was investigated through analysis of ancient human bone from the Keyaheyuansha site in Sinkiang Uigur Autonomous Region by use of methods of X-ray diffraction (XRD) and Raman Spectra. The results showed that the incorporation of the two techniques accurately revealed the change of crystallinity of hydroxyapatite and could briefly and effectively distinguish the contamination of the ancient human bone.

关键词

生物考古(Bioarchaeometry)；骨骼污染(Bone contamination)；羟磷灰石(Hydroxyapatite)；XRD；喇曼光谱(Raman spectra)