Japan Geoscience Union Meeting 2015
(May 24th - 28th at Makuhari, Chiba, Japan)

U06-P08 会場:コンベンションホール 時間:5 月 24 日 18:15-19:30

火葬骨の炭酸ヒドロキシアパタイトを用いた 14C 年代測定の試み
An attempt on 14C dating of carbonate hydroxyapatite in a cremated bone

椋本 ひかり [1*] ; 南 雅代 [2] ; 中村 俊夫 [2] ; 鍵 裕之 [3]
MUKUMOTO, Hikari[1*] ; MINAMI, Masayo[2] ; NAKAMURA, Toshio[2] ; KAGI, Hiroyuki[3]

[1] 名古屋大学理学部地球惑星科学科, [2] 名古屋大学年代測定総合研究センター, [3] 東京大学大学院理学系研究科地殻化学実験施設
[1]Department of Earth & Planetary Sciences, Nagoya University, [2]Center for Chronological Research, Nagoya University, [3]Geochemical Research Center, Graduate School of Science, The University of Tokyo

Bones are one of the most important materials for archaeological and paleo-environmental dating because they can directly provide absolute dates themselves. Bone collagen, which contains bone protein that is less susceptible to chemical weathering, is commonly used for ^{14}C dating, but it sometimes has lost organic protein due to post-depositional chemical alternation and diagenesis, resulting in impossibility of ^{14}C dating. For the bones remaining no organic component, carbonate hydroxyapatite, an inorganic component, is useful for ^{14}C-measurement. However, the inorganic component in bones can easily be altered by acidic soil, and it has been considered to be unsuitable for ^{14}C dating. Recently, meanwhile, it is reported that ^{14}C dating using carbonate hydroxyapatite is possible for cremation bones heated at a high temperature (>600 ℃). The objective of this study is to examine the possibility of ^{14}C dating using carbonate hydroxyapatite in cremated bones. The samples used were cremated bones in an um, which are considered to be remains of Jokei, a Buddhist monk (AD 1155-1213). The bones had been possibly heated at high temperature, judged from the IR spectrum and XRD pattern. The carbonate hydroxyapatite in six bone fragments showed ^{14}C dates of 1155-1280 cal AD, which is similar with the supposed age. The result indicates that ^{14}C dating using carbonate hydroxyapatite is effective when the bone sample was enough heated and well-preserved after deposition.

キーワード: 骨, 炭酸ヒドロキシアパタイト, 14C 年代測定
Keywords: bone, carbonate hydroxyapatite, radiocarbon dating