# Trial application of oxygen, carbon and strontium isotope analysis in tooth enamel for identification of past-war victims for discriminating between Papuan, Japanese and US soldiers

*Hidetoshi Someda[1], Takashi Gakuhari[2], Akai Junko[1], Araki Yoshiyuki[1], Ki-Cheol Shin[3]

1.National Defense Medical College, 2.Kanazawa University, 3.The Research Institute for Humanity and Nature

Stable isotope analysis has undergone rapid development in recent years and yielded significant results in the field of forensic sciences. In particular, carbon, oxygen and strontium isotopic ratios in tooth enamel obtained from human remains can provide useful information for prescreening for identification of remains. The aim of this study is to evaluate this method for discriminating remains between local people, Japanese and US soldier in the battlefield of New Guinea of World War 2.
In this study, the carbon, oxygen and strontium isotopic ratios in the tooth enamel of the examined Papuan (South highland, East New Britain and Bougainville) and Japanese (Tottori) individuals is compared to previously reported data for US individuals, and statistical analysis is conducted using a discriminant analysis.
US populations can be extracted from these groups accurately. The discrimination between the Papuan and Japanese is found to be partly accurate. Thus, the present method has potential as a discrimination technique for these populations for use in the examination of mixed remains comprising Papuan, Japanese and US fallen soldiers.

Keywords: Stable isotope analysis, War victim, Geographic origin

 