New evidence of proto-Austronesian from Sangiran

Tanto Budi Susilo 1,2, Adang Suwandi Ahmad 3, Yan Rizal 4, Akhmaloka 1,*

1 Biochemistry Research Group, Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung, Bandung 40132, West Java, Indonesia
2 Biochemistry Division, Faculty of Mathematics and Natural Sciences, Lambung Mangkurat University, Banjarbaru, South Borneo, Indonesia
3 School of Informatics and Electrical Engineering, Institut Teknologi Bandung, Bandung 40132, West Java, Indonesia
4 Quaternary Geology, Faculty Earth Science and Technology, Institut Teknologi Bandung, Bandung 40132, West Java, Indonesia
*Coresponding author: Akhmaloka, Ph.D, Phone: +62-2 2-2504154, email: loka@chem.itb.ac.id

Abstract

The studies of Austronesian migration have been conducted on Early Holocene (10,000 BP), based on the migration theory Out of Sundaland (OOS). Genetics distance D-loop/HVS mtDNA Austronesian populations present day can be used to track the direction of migration. However, studies on the nucleotide sequence have not involved D-loop mtDNA Proto-Austronesian on Early Holocene. Here, we will report the identities of the four human ancient, Sangiran, by 14C dating (for ancient3 was 11,883 BP). Genetics distance ancient were carried out the method of Nei-Miller. The results showed a genetics distance is the smallest (2.36) that were found in the relationship between the population of China to human ancient. Analysis clustering showed that ancient populations was separately with other populations. The empirical evidences of ancient Sangiran were proposed as the Proto-Austronesian Sundaland and who have been migrated to China around 11,883 or 3,000 years earlier than the theory of OOS. The new evidences were for clear-headedly to theory of OOS.

Keywords: Proto-Austronesian, genetics distance and Sangiran

Introduction

Austronesian phenomenon is very interesting to study. They are nation that have the largest dispersal in the world, from Madagascar to Easter Island and from Hawai’i to New Zealand or in the half the circumference of the earth, and capable of living as “seaman” and/or “riverman” since on Early Holocene, as like Bajo (South Celebes) or Orang Laut (Riau) ethnics today. Austronesian terminology refers to the Greek, the word australis and nesos meaning southern and islands, respectively. Austronesian languages were spoken by ethnics who lived in coastal islands of the archipelago and pasific, except the central Papuan. 80% Austronesian ethnics spread in the region of Indonesia. The fact above because that Indonesia have a strategic role for traced a mosaic of pre-history Austronesian. These conditions shown that the study of Austronesian are very promising, challenging and very important to the history of humanity, and world civilization. Comprehensive understanding is useful for to strengthening national identity and advance the progress of civilization of today and tomorrow. However, quite surprising that the study of Austronesian undeveloped (Simanjuntak, 1998). Austronesian genetic studies in Indonesia started to develop since 2000, which led by scientists, Sangkot Marzuki, head of the Eijkman Institute. Since then, a group of researchers Eijkman began presenting research results at various scientific forums (Marzuki, 2002; Wuryantari, 2001, Sudoyo et al., 2004; Setiadi et al., 2002; Tanudirjo, 2005; Tanudirjo, 2006). The human study from bioarhaeology artifacts and genetics diversity were very useful for in the reconstruction of Austronesian migration. The findings of “caveman” in the mountains of limestone Java on Early Holocene have become this region is crucial in determining the direction of pre-history of the Austronesian studies in the future (Simanjuntak & Asikin, 2004). Bengawan Solo, Java, was proposed as “the bridgewater” for the changing of habitual Austronesian from cultures of “seaman” and/or “riverman” to “caveman” in the hinterland of Java. The Austronesian Indonesia, especially in the Java, Sumatra, Sulawesi, Bali, Lombok, Flores, Timor, Halmahera Island, and Papua are mostly located in the area ring of fire with fertile soil, tropical and regular rainfall throughout the year, but unstable soil conditions caused by the tsunami, earthquake, volcanic eruption activity and sank “the bridgeland” Sundaland since the Early Holocene (Katili, 1993). These conditions contributed to the classic dilemma of research is the difficulty of obtaining empirical evidence. Different with occupancy of Austronesian Indonesia, for occupancy...