

## K-Ar ages of the Miyazu Granite and Miocene volcanic rocks, Kyotango City, northern Kinki district

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### Introduction

In the northern Kinki district, there are some previous studies on the stratigraphy and chronology of the Miocene volcanic rocks formed in the process of the opening of the Japan Sea. But the chronological studies in this area are less than other districts. And studies on granitic rocks are a few in this district. The authors obtained chronological data of granites and volcanic rocks in Kyotango City and neighboring area as one of the compilation program of Kyotango City history.

### Introduction

#### K-Ar ages

The experiment was performed at the Hiruzen Institute for Geology & Chronology.

- 1) Miyazu Granite (hornblende biotite granite); Ooro, Mineyama, Kyotango; 61.1+/-1.4Ma
- 2) Miyazu Granite (biotite granite); Arare, Yasaka, Kyotango; 58.0+/-1.3Ma
- 3) Yoka Formation (two pyroxene andesite); Taikoyama, Yasaka, Kyotango; 17.98+/-0.42Ma
- 4) Amino Formation (pumice in pyroclastic flow deposit); Taiza, Kyotango; 13.50+/-0.54Ma
- 5) Tango formation (two pyroxene andesite); Nombara, Tango, Kyotango; 14.82+/-0.33Ma
- 6) Intrusive rock (augite andesite); quarry in Taiza; 14.47+/-0.33Ma
- 7) Aobasan Andesite (olivine augite andesite); Sugiyama, Maizuru; 16.4+/-1.0Ma

### Discussion

Miyazu Granite: Ages of 58 and 61 Ma are consistent with previous data (55, 45, 68 and 65Ma (Kawano & Ueda 1966)). The Miyazu Granite probably intruded in the early Paleogene.

Yoka Formation: The Miocene in this district is classified into the Takayanagi, Yoka, Toyooka, Amino and Tango formations in ascending order (Wadatsumi et al. 1966). The volcanic rock of the Yoka Formation is classified to the continental island-arc basalt on the basis of the Zr-Zr/Y pattern (Ishiwatari & Imasaka 2002). The age of 18Ma the sample 3 is consistent with the volcanic rock formed in the continental margin, because the rotational motion of the Southwest Japan occurred between 17 and 15 Ma (Nakajima et al. 1990) between 16 and 14 Ma (Otofujii 1996).

Amino Formation: The age sample 4 is consistent with the previous data (between 14 and 15 Ma (Yamamoto & Hosizumi 1988)). The Amino Formation is the first Miocene marine sediment in this area and it was formed in the process of the opening of the Japan Sea in 16 to 14 Ma.

Aobasan Andesite: The Aobasan Andesite overlies the Miocene Shimo Formation (Nakagawa et al. 1988) correlated to the Amino Formation. Mount Aobasan has been estimated that it was formed in the Pliocene or Pleistocene based on its topography (Hirokawa & Kuroda 1958). But the K-Ar age of sample 7 reveals that the Aobasan Andesite was formed in the Miocene.

### References

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