IRANIAN SOCIETY of CRYSTALLOGRAPHY and MINERALOGY

Vol. 19, No. 3, Fall 1390/2011

IRANIAN JOURNAL of CRYSTALLOGRAPHY and MINERALOGY

Petrogenesis of Pliocene-Quaternary volcanic rocks in Isfahan Province: Insight on adakite magmatism

M. Noghreyan[1], M. Khodami[*2], A. Davoudian Dehkordi[3], N. Shabanian Brogeni[3]

1- Department of Geology, Faculty of Sciences, University of Isfahan, Isfahan, Iran
2- Department of Geology, Islamic Azad University (Mahalat Unit)
3- Department of Natural Resources, Shahrekord University, Shahrekord, Iran

(Received: 18/6/2010, in revised form: 5/11/2010)

Abstract: The Pliocene calc-alkaline volcanic rocks are exposed in two areas in southeast and northwest of Isfahan and consist of andesites and dacites. Based on geochemical data and multi-elements pattern, these rocks are medium to high calc-alkaline suite and they show LILE and LREE enriched normalized multi-element patterns, and negative Nb and Ti. Condrite-normalized REE patterns display a steep decrease from LREE to HREE without any Eu anomaly. They have higher SiO_2 and Sr content and Sr/Y and La/Yb ratios and low MgO, Mg#, Y and Yb contents than the normal calc-alkaline volcanic rocks. These volcanic rocks show adakite characteristics. These features are consistent with ratios obtained from orogenic related volcanic rocks. These rocks may have been produced by partial melting of thickened lower continental crust or slab probably transformed to eclogite or garnet -amphibolite. HREE and Y depleted pattern suggest the existence of garnet and amphibole as a residue in the source.

Keywords: *Adakite; calc-alkaline; volcanic rocks; Isfahan.*

متن فارسی اصل مقاله از صفحه ۴۵۱ تا ۴۶۲ در این شماره به چاپ رسیده است.

[*]Corresponding author, Tel: 09133274529, Email: mahnaz.khodami@gmail.com

[Downloaded from ijcm.ir on 2024-04-25]