

Tectonic setting of granitoid rocks from the Kahak area, central Iran.

¹GHALAMGHASH, J., ²VOOSUGHI ABEDINI, M. ¹Geological survey of Iran, Tehran, Iran; ²Shahid Beheshti University, Tehran, Iran.

The Kahak granitoid rocks are located in the central part of Urumih-Dokhtar magmatic belt, in southern margin of central Iran. These intrusive rocks are formed by two plutonic and one subvolcanic episodes, that respectively took place at late Eocene-Oligocene, Miocene and Pliocene. Country rocks are mainly Tertiary volcanic rocks. Lithologically, granitoid masses include granite, granodiorite, tonalite, quartzdiorite and synite, among which volume of granodiorite and tonalite is more than other types.

The Kahak granitoids are low-K calcalkaline and calcalkline, metaluminous and sodic in composition. Characteristics such as dominance of tonalite, existence of hornblende, sphene, primary opaque minerals, metaluminous character, SiO_2 and Na_2O content, microdioritic enclaves and associated rocks, suggest that Kahak masses are "I-type" cordillerian granitoids.

The major element data $[\text{FeO}^*/(\text{FeO}^*+\text{MgO})/\text{SiO}_2, \text{FeO}^*/\text{MgO}, (\text{FeO}^*+\text{MgO})/\text{CaO}]$ clearly indicates Kahak intrusive rocks are orogenic granitoids. Trace element distribution pattern (spider diagram) of Kahak granitoids are the same as volcanic arc granitoids (VAG). Also the trace element diagrams $[\text{Ta}/\text{Yb}, \text{Rb}/(\text{Yb}+\text{Ta}), \text{Hf}-\text{Rb}/10-3\text{Ta}]$ support this idea. The Kahak granitoids were formed in relation with subduction of Neotethyan oceanic crust under Eurasian plate.