Geochemistry characteristics of Bagham Gabbroic pluton in South of Ardestan

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Abstract: Bagham pluton is located in 23 km of the southeastern of Ardestan and it is near the main road of Esfahan-Ardestan. The study area is a part of central Iranian zone and Urumieh-Dokhtar magmatic belt. Minerologically, the rocks include plagioclase, pyroxene, amphibole and opaque. The rocks have SiO₂ = 44.75-47.08 and occur in gabbro field. The chondrite normalized REE pattern show low enrichment in the LREEs relative to HREEs. The negative Nb and Ti anomalies in primitive mantle and MORB-normalized multi-element diagrams of the rocks are characteristic of island arc magmas. Also, enrichment in LILE and depletion of HFSE may indicate a subduction-related tectonic setting. Moreover, on based of the values of specific ratios (e.g. low Ti/V, Ti/Sc and high CaO/TiO₂ and Al₂O₃/TiO₂) can define a depleted or refractory magma source and on other hand, demonstrate the similarity of the mentioned rocks to tholeiitic rock with low boninitic affinity.

Keywords: Geochemistry; Gabbro; Tholeiti; Boninitic; Ardestan.

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