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Petrography and geochemistry of pillow lavas and related mafic, intermediate and felsic rocks in ophiolitic sequence of Sahneh-Harsin (north east of Kermanshah)

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Abstract: The ophiolitic complex of Sahneh-Harsin is composed of rock units such as gabbro, basalt, diabasic dikes, diorite and plagiogranite. The geochemical studies show that primitive magma has been sub-alkaline tholeiitic Mg-rich and K-poor. These data show enrichment of light rare earth elements (LREE) and depletion of heavy rare earth (HREE). The ratio of NbTa in the basalts is between 16.19 and 18.88; therefore these high amounts indicate the magma derived from the contaminated mantle. Lithological and geochemical studies show that there are genetic connections between the rocks and their origin from the same magma. Magmatic contamination and differentiation had important role in evolving of rocks and they formed during melting of more than 16% of a garnet peridotite. Petrogenesis of pillow lavas shows they are of MORB type; based on spider diagarms this complex is formed from a oceanic tholeiitic magma of EMORB Enriched (MORB).

Keyword: *Sahneh- Harsin ophiolite; pillow lava; lithology; geochemistry.*

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