



Geochemistry of Tertiary volcanic rocks in Taleghan (Alborz, north of Iran)

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The study area is located in the central Alborz mountain system in the north of Iran. Sub-aerial Tertiary volcanism in Taleghan area has occurred at two phases: (1) Basanite lava flow that straightly has covered the Eocene sub-marine pyroclastic sequence, (2) Olivine-basalt flow that has covered the basanite sequence. These two kinds of flows are alkaline to high-K calc-alkaline in character and have similar Rare-earth element (REE) patterns with enrichments in LREE and depletion in HREE. Chemical compositions reveal some differences between two groups in terms of high-field strength elements (HFSES). Rocks from the first group (Basanites) have negative peaks at Zr,Ti and a trough at Nb-Ta (a distinctive feature of subduction-related magmas), but these characters are not visible in olivine-basalt patterns. Trace-element patterns demonstrate that the melts have derived from low degree partial melting of enriched lithospheric mantle in an intercontinental extension regime. This volcanism may have resulted as a post-collision magmatism due to gravitational collapse after Cretaceous-Tertiary convergence of the Neotethys and continental collision event. Some orogenic-like signatures of the Taleghan volcanism might result from contamination of magma with felsic crustal melts.