Mineral chemistry, geochemistry and isotope geochronology of kalateh region (NW of Khur): implication for Late Triassic magmatism of central Iran zone

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Abstract: Dioritic plutons and pinkish alkali-feldspar granitic dikes of Kalateh area (northwest of Khur city) intruded in Neoproterozoic basemental of Jandagh-Arousan complex. Field observations, petrography and geochemical studies indicate that these intrusive rocks have I-type nature and belong to medium-high K calc-alkaline granitoids and also have genetically relationship with each other. Their parental magmas produced by partial melting of metasomatized mantle wedge which was located above the subducted Neotethyan oceanic slab. The mentioned magmas generated in an intracontinental back arc extensional setting in relation to the subduction of oceanic Neotethys slab. U-Pb dating results on separated zircon from dioritic and alkali-feldspar granitic rocks indicated 213.9 ± 1.6 to 221.16 ± 1.6 Ma interval age (corresponding to Late Triassic). These igneous rocks are indications of magmatic manifestations of Early Cimmerian Orogeny.

Keywords: Diorite; alkali-feldspar granite; Late Triassic; Neotethys subduction; Kalateh; Khur.

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