Geothermobarometery and mineralogy of Oligo-Miocene felsic Plutons, North-West of Share-Babak, Kerman

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(Received: 19/6/2013, in revised form: 20/9/2013)

Abstract: More than 20 tonalitic to granodioritic plutons with Oligo-Miocene age had intruded the Eocene volcanic rocks, in south-east of Urumieh- Dokhtar magmatic belt, north-west of Shahre-Babak. These rocks show granoporphyrctic texture and consist of phenocrysts of plagioclases (An21-An44), with normal to reverse zoning, magnesio hornblende and tshermakite and biotites. The matrix consists of fine-grained plagioclase and potash-feldspars, amphibole, biotite, quartz and opaque minerals. K-feldspars compositions vary between (Ab26.6-An0.07-Or73.4) to (Ab73.3-An15.8-Or11). Thermometry and barometry, based on Al content in amphibole, suggest that hornblendses are formed in 2-5.5Kb pressure (8.3 to 22 km depths) and 707-793°C temperature. Results also imply that amphiboles formed at different depths and temperatures. Geochemical data suggest that the calc-alkaline plutons formed in an active continental margin.

Keywords: Geothermobarometery; tonalite; granodiorite; Oligo-Miocene; Urumieh-Dokhtar.

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