



WHOLE-ROCK GEOCHEMISTRY AND ZIRCON U–Pb ISOTOPES OF THE LATE CRETACEOUS GRANITOIDS OF THE EASTERN TAURUS (TURKEY): IMPLICATIONS FOR PETROGENESIS AND GEODYNAMIC SETTING

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The granitoid plutons out crop largely in the Eastern Taurus, in Turkey. New data, including a combination of field relation, U-Pb zircon geochronology and rock geochemistry on the granitoids in the Eastern Taurus of the Tethyan orogen in Turkey, come from four plutons (Pertek, Baskil, Göksun and Şifrin). Pertek, Baskil and Göksun plutons consist mainly of diorite, quartz-diorites, tonalite, granodiorites and granites of I-type, with minor monzonite, the Şifrin pluton consists of syenogranite, syenite, monzogranite, monzonite. U–Pb zircon geochronology of four samples of diorite and granite from Pertek and Baskil plutons indicate ages of $86\pm 2 - 79 \pm 1$ Ma. U-Pb zircon geochronology of four samples from the Şifrin granitoid yield ages $77\pm 1-72\pm 1$ Ma. Considering these ages, emplacement of the plutons took place during Late Cretaceous (Santonian-Campanian), from 86 to 72 Ma. Although the SiO₂ of rocks forming granitoids varies in wide range (46.792- 74.092 wt%), they show arc and syn-collision geochemical affinity, with enrichment of LILE (K, Rb, Sr and Ba) and depletion of HFSE (Nb, Ta and Ti) and P. Geochemical data indice that the diorite, tonalite and granodiorite are low-K tholeiite, monzodiorite, monzogranite, granite and K-granite are calc-alkaline and high-K calc-alkaline and monzonite, syenomonzonite and syenite of Şifrin pluton and some samples of the Pertek pluton are shoshonitic. The Eastern Taurus granitoids would be formed by partial melting of possible juvenile arc-derived rocks during subduction of the South Branch of the Neo-Tethyan oceanic crust and subsequent arc–continent collision.