



Geology and U-Pb Zircon ages of the Kavacik Leucogranite in the Bornova Flysch Zone (Western Anatolia, Turkey)

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The Bornova Flysch Zone comprises an olistostrome-mélange situated NE-SW direction between the Izmir Ankara Suture Zone and the Menderes Massif. The Bornova Flysch Zone is mainly composed of slightly deformed Late Cretaceous to Paleocene sandstone and shale with Mesozoic limestone and oceanic crustal associations. These large-scale blocks in the matrix of the Bornova Flysch Zone are mostly defined as limestone, basalt, serpentinite and radiolarian cherts. In this study, granitic bodies, situated in the Bornova Flysch Zone, named as Kavacik leucogranite is examined for the first time, in terms its geological features and its U-Pb zircon crystallization ages. Kavacik leucogranite displays a typical granitic texture and its composition indicates ranging between granitic to granodioritic in composition with lack of mafic minerals. The geochemical features of the granite indicate the I-type and subalkaline nature of the granitic body. The geochemical signatures of the Kavacik granite points out Volcanic Arc Granitoids as similarly seen in Karaburun granite. U-Pb zircon LA ages were also obtained from the Kavacik granite ranging between 224.5 ± 2.0 Ma and 230.0 ± 2.8 Ma. Early Triassic zircon ages are also previously observed in the Karaburun Peninsula (Karaburun Granite) and the Menderes Massif (Odemis-Kiraz Submassif). The initial geological boundary relation of the Kavacik Leucogranite is not clear in the field and likely displays tectonic boundary features in the matrix of the Bornova Flysch Zone. Overall, the geochemical features of the Kavacik leucogranite and similar leucomagmatic bodies in the Western Anatolia points out the subduction-related tectonic setting is favorable during the Triassic time.