

# Turkish Journal of Earth Sciences

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## Post-Collisional A-Type Magmatism in the Central Anatolian Crystalline Complex: Petrology of the İdiş Dağı Intrusives (Avanos, Turkey)

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**Abstract:** The İğdiş Dağı Igneous Complex (IIC) is one of the late-stage plutonic bodies within the Central Anatolian Crystalline Complex (CACC) which intrudes the Paleozoic-Mesozoic metamorphic basement and late Cretaceous granitoids. Uppermost Cretaceous (?)–Lower Paleocene olistostromal volcanoclastic rocks represent the oldest cover on the IIC. Petrographic and geochemical data indicate that the IIC mainly comprises quartz syenite with well-defined alkaline and peralkaline over saturated trends. The analysed samples show humped patterns on chondrite- and ORG-normalized spidergrams with peaks at Rb, Th and Ce, and also negative Nb anomalies. These features are similar to patterns considered typical of post collisional A<sub>2</sub>-type granitoids produced by crustal anatexis. A post-collision setting is also suggested by the distribution of data over different fields in chemically-based tectonic discrimination diagrams employing Nb, Y and Rb. These characteristics are consistent with geochemical data from other CACC granitoids and the regional geology. The late-orogenic plutonic rocks of the CACC (granites and syenites) represent the melt products of continental crust during post-collisional uplift. This event followed crustal thickening that was related to the southward emplacement of ophiolitic nappes during the closure of the İzmir-Ankara-Erzincan Ocean.

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