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Petrography and geochemistry of Ilıca-Şamlı Pluton, NW Turkey

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The major and trace elements of the plutonic rocks from the Ilıca-Şamlı Pluton, Northwest of Turkey, were studied to understand petrogenesis. The plutonic rocks consist of a variety of rock types ranging from diorite to granodiorite. Diorites and granodiorite contain large, massive alkali feldspar crystals which are porphyritic textures.

These plutonic rocks have SiO_2=62-65, $Al2O_3$=14,55-15,74, $Fe2O_3$=4,03-5,85, MgO=1,85-2,80, CaO=4,83-5,96, Na2O=3,14-3.58, K2O=3,04-4,16 major oxide percentages. All of the rocks show a calc-alkaline afinity. Chondrite-normalized REE patterns are moderately fractionated and relatively flat. They display small negative Eu anomalies with enrichment of LILE and less amount of depletion of HFSE. The 40Ar/39Ar ages ∼21-22 Ma. These ages are interpreted as crystalliczation ages of the plutonic rocks and also these ages imply collision of the Intra-Pontide Suture and Anatolide–Tauride platform.