

ORIGIN OF THE SURDULICA GRANITOID(CENTRAL BALKAN PENINSULA - EAST SERBIA)

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In the Ripheo-Cambrian Upper part of Serbo-macedonian Massif (SMM) a compositionally zoned (granodiorite-monzogranite-granite as well as relics of gabbro diorite and diorite and their enclaves), post-tectonic I-type, calc-alkaline metaaluminous Surdulica granitoid (225 km², 35.5-29.2 Ma, Sr^{87/86}=0.7080) is intruded into low to medium grade metavolcanogenic-sedimentary rocks producing wide contact aureole. Field evidence indicates that mafic rocks have been intruded firstly. Mineral composition, major and trace element as well as REE support distinction among mafic and intermediate-acidic types: both show negative Eu-anomalies and similar LREE but different HREE content. These features indicate the granitoid evolution through the combination of the following processes: partial melting of metasomatized upper mantle and crustal rocks, AFC, mixing (contamination of crustal melts by fluid released by crystallization of mafic magma; homogenization of influxed fresh granodioritic magmas in magma chamber) and chemical reaction among partly consolidated magma and residual fluids - blastesis of K-feldspar. The generation of parent magma initiated by ending of subduction and closing of Vardar Ocean during the Cretaceous and collision and compression of Drina-Ivanjica and SMM continental mass. These events caused at first underplating and thickening of SMM and after that fast rising and faulting along with opening of deep high-crystalline rocks. The latest phase of subduction processes produces calc-alkaline mafic melts which ascended to the lower crust where they stalled and evolved. Heat released by its crystallization and by friction caused extensive melting of the lower crustal rocks and generation of dioritic to granodioritic magma.