

AGE AND TECTONIC SIGNIFICANCE OF THE RITÁPOLIS BATHOLITH, MINEIRO BELT (SOUTHERN SÃO FRANCISCO CRATON): U-Pb LA-ICP-MS, Nd ISOTOPES AND GEOCHEMICAL EVIDENCE

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The Mineiro belt (2.45 to 2.00 Ga) encompasses a large volume of granitoids produced through accretionary arcs propagating outboard the Minas Basin (2.55 Ga). Combined U-Pb LA-ICP-MS zircon dating, Nd signatures and geochemistry for the Ritápolis batholith (RB) provide fingerprints for Cordilleran-type magmatism in this belt. The RB crosscuts a 2.23 - 2.20 Ga supracrustal sequence and is tectonically bounded by metaplutonic rocks (2.36-2.33 Ga) of the Resende Costa arc (T_{DM} ages of 2.5 Ga). Hence, roof pendants of supracrustal rocks and different xenoliths (e.g., 2128 ± 2 Ma diorites) are observed. The RB rocks preserve igneous fabric overprinted by low grade metamorphism. Two samples yielded roughly comparable crystallization ages: i) 2149 ± 10 Ma (concordant age) for cores whereas the overgrowths yielded a lower intercept Pb episodic loss in Neoproterozoic time; ii) 2123 ± 33 Ma (upper intercept age) with similar Neoproterozoic overprint, whereas the core analyses (2354 ± 9 Ma; concordant age) point to crustal contaminants like the Resende Costa rocks. Data from a third sample do not define a chord due to complex Pb loss, whereas two slightly discordant inherited grains are as old as 2760 Ma. Seven $\epsilon Nd_{(t)}$ values between -2 and -7 ($T_{DM} = 2.5$ Ga) are consistent with crustal contamination in magma genesis. The geochemical data are compatible with calc-alkaline rocks with peraluminous to light metaluminous signatures. The distinguished gaps among the high- and low K_2O phases may be explained either by coeval rocks derived from two coupled but independent magma sources. High- and low K_2O phases display similar chondrite-normalized REE patterns; the high K_2O group showing negative Eu anomalies like for evolved calc-alkaline rocks. This group also has low fractionated patterns in spider diagram with enriched ratios in less incompatible elements. We conclude the RB melts had probably derived in continental margin setting from 2.15- 2.12 Ga, during a late accretionary stage of the Mineiro belt.