Paleoproterozoic juvenile magmatism within the northeastern sector of the São Francisco Province: Insights from the shoshonitic high Ba-Sr Montezuma monzogranite

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Important Paleoproterozoic tectono-magmatic events are registered in the eastern border of the São Francisco Province (SFP). New, integrated petrographic, mineral chemistry, whole rock geochemical, zircon and titanite U-Pb geochronology, and zircon Hf isotopic data from the Montezuma monzogranite, as well as new geochemical results for its host Corrego Tingui Complex, provides new insights into the post-collisional evolution of the northeastern SFP. U-Pb zircon and titanite dates from the Montezuma monzogranite constraint its crystallization at ca. 2.03 Ga. Zircon $\epsilon$Hf(t) analysis are dominantly positive with TDM2 model ages ranging from 2.7 Ga to 1.95 Ga. Geochemically, the Montezuma monzogranites are weakly peraluminous to metaluminous magnesian granitoids, enriched in LILES and LREE, with high Mg# and depleted in some of the HFSE. Their lithochemical signature, added to the juvenile signature, allowed its classification as a shoshonitic high Ba-Sr granitoid related to post-collisional lithosphere delamination followed by asthenospheric upwelling. In this scenario, the partial melting of the metasomatized lithospheric mantle interacted with the roots of a juvenile intra-oceanic arc, similar to the Juiz de Fora/Pocrane arc, being these hybrid magma interpreted as the source of the Montezuma monzogranite. The Córrego Tingui Complex host rocks are divided into high and low-K groups. The high-K group is also classified as shoshonitic granitoid, however, due to its relatively low Mg#, its source were interpreted as related to partial melting of enriched crustal rocks without mantle input. On the other hand, the low-K Córrego Tingui rocks are more akin to a sin-to-late collisional volcanic arc granitoids originated from the partial melting of ancient crustal rocks. These results show that the Montezuma monzogranite represent an important contribution to the crustal growth registered during the post-collisional stage of the São Francisco Province stabilization.