A Magma Mixing Origin for the Syn-Collisional Granitic Magmatism, Sergipano Orogenic System, Northeastern Brazil

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Leucogranites are abundant in various granitoid massifs of the Macururé Domain, Sergipano Orogenic System, which comprises around twenty different intrusions. In the Macururé Domain it has been possible to identify the intrusion of magmas with different affiliations: shoshonitic (monzonites), leucogranites (syenogranites) and high-K calc-alkaline (granodiorites). The largest syenogranitic intrusion is the Glória Sul Stock (41 km^2) dated at 626 ± 7 Ma (U-Pb, SHRIMP) which generates hornfels in its host rocks. In the SGS the muscovite + biotite granites predominate but one can also find muscovite granites, biotite granites and microgranular mafic enclaves (MME). Most granites are peraluminous high-K calc-alkaline except for the biotite granites and MME which are metaluminous and have shoshonitic affinity. The alignment of MME, biotite granite and muscovite granites in geochemical diagrams suggest mixing between shoshonitic mafic magmas and felsic crustal melts. Trace elements contents (Ba= 1,179 – 319 ppm; Rb= 351 – 55.3 ppm; Y= 16.7 – 1.6 ppm) are higher in the enclaves than in the granites. REE contents range from 38.58 – 299.21 ppm; La$_N$/Yb$_N$= 12.57 – 137.22 and Eu/Eu*= 0.72 – 1.94. Geotectonic diagrams indicate a collisional nature and the absence of characteristic syn-collisional structures and fabrics suggest that these rocks have been preserved from deformation. These data indicate the involvement of mafic shoshonitic magmas in the genesis of syn-collisional syenogranites in the Macururé Domain. *Acknowledgment: This work was supported by CNPq, CAPES and FAPITEC.*