

U-Pb (SHRIMP) AND Sm-Nd RESULTS FROM THE PONTA DO MORRO ALKALINE COMPLEX-MT: TECTONICS IMPLICATIONS

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The Ponta do Morro Alkaline Complex (PMAC) is the only known occurrence of felsic rocks of Cretaceous age in the Mato Grosso State, Brazil. It is formed by granitic and supersaturated syenitic rocks, with mafic enclaves and trachytic and rhyolitic dykes. According to the IUGS classification (Le Maitre et al., 2002) these rocks are syenites, quartz syenites, alkali-feldspar syenites, quartz alkali-feldspar syenites and alkali-feldspar granites (Sousa 1997, Sousa et al. 2005), corresponding to peralkaline granites and alkaline series of sodic and aluminum-potassic affinity. Geochemical data suggest that the PMAC could be classified as intra-plate granitoids. After Del'Arco et al. (1982), syenites have Rb-Sr ages of 84 ± 6 Ma (initial ratio $^{87}\text{Sr}/^{86}\text{Sr} = 0.709 \pm 0.002$), while Sousa (1997) obtained Rb-Sr age of 100.1 ± 1.1 Ma (initial ratio $^{87}\text{Sr}/^{86}\text{Sr} = 0.70520 \pm 0.00010$). Sousa et al. (2005) obtained a positive correlation ($r = 0.999$) between $^{87}\text{Rb}/^{86}\text{Sr}$ and $^{87}\text{Sr}/^{86}\text{Sr}$ (errorchron) with an age of 97.3 ± 1.1 Ma (initial ratio $^{87}\text{Sr}/^{86}\text{Sr} = 0.70435$) for the PMAC. Unpublished U-Pb age in zircon (SHRIMP method) of 84.7 ± 0.59 Ma, obtained at the Instituto de Geociências from the Universidade de São Paulo, is interpreted as the crystallization age of the PMAC, and confirms previous data by Del'Arco et al. (1982). Additionally, $\epsilon_{\text{Nd}(0.0847)} = -0.76$ indicates a mantle source for the magmas, as previously suggested by Sousa et al. (2005).