

Nd ISOTOPE EVIDENCE OF BASEMENT CONTRIBUTION TO THE GENESIS OF THE AMBROSIO DOME, ITAPICURU RIVER GREENSTONE BELT, BAHIA-BRAZIL

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The Ambrosio dome (40 x 7 km) is one of the most prominent granitoid intrusion in the Palaeoproterozoic Itapicuru River Greenstone Belt. It is composed of foliated phyrlic and aphyric granodiorites, granite sheets and dykes, and minor gneisses, migmatites and pegmatites. Granodiorites are the main rock-type. Migmatitic gneisses occur scattered throughout the dome and have tonalitic composition. Published SHRIMP U-Pb data on xenotime from a granite dyke yielded a crystallization age of 2080 Ma, while zircon ages (2077 Ma, 2937 Ma, 3111 Ma and 3162 Ma) from a granodiorite clearly indicate a strong inheritance. U-Pb ages on zircons from the literature and our unpublished data for the basement vary from 2.6 to 3.1 Ga. Sm/Nd isotope data on five granitoids and one migmatitic gneiss from the dome, and three basement gneisses yielded ϵ_{Nd} values (at 2080 Ma) between -12.24 and -4.35, and Nd model ages (TDM) in the interval 3.11-2.58 Ga. The highest TDM values were observed in the migmatitic gneiss and samples from the basement. Igneous rocks from the dome cluster into two groups, namely. 2.8-2.9 Ga and 2.6 Ga. All these information support a model of dome formation involving the mixture between an old component, possibly the basement, and a younger one. The latter may be magmas equivalent to those that originated the Teofilandia and Barrocas tonalitic domes, farther to the south, where one of us (HRB) reported Nd TDM close to 2.2 Ga.