

RHYODACITES FROM THE PORONGOS COMPLEX, SOUTHERMOST BRAZILIAN SHIELD, EVALUATED BY INTEGRATION OF FIELD GEOLOGY, GEOCHEMISTRY AND U-Pb DATING WITH THE USP-SHRIMP IIe

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The study of metavolcanic rocks in Precambrian terranes can provide important information about wider portions of the shield. The geochemistry and geochronology of the Porongos Complex magmatism still remain poorly characterized in published literature. The present study has the objective to characterize and date the metavolcanic rocks of the complex by the integration of geological mapping, petrography, geochemistry and U-Pb zircon geochronology with the USP-SHRIMP IIe. The Porongos Complex is an elongated, continuous, Neoproterozoic belt located in the central portion of the Sul-riograndense shield and comprises metapelites, quartzites and metavolcanic rocks, intercalated with septs of Paleoproterozoic gneissic basement. Eight samples were collected in different sections of the complex; two of them (PC1 and P15) were dated. The samples have similar petrographic characteristics, mostly porphyroclastic texture with prismatic plagioclase. Quartz grains show undulatory extinction, with local formation of sub-grains, forming an inequigranular arrangement of interlobated millimetric to fine polygonal of bimodal grains, indicating temperature conditions at the beginning of the amphibolite facies. Geochemically, the samples are rhyodacites with calc-alkaline affinity and medium contents of K_2O . The pattern of distribution of trace elements is characterized by a strong enrichment in LREE and LILE, such as Cs, Rb, Ba and K, compared HREE. The USP-SHRIMP IIe (sensitive high resolution ion microprobe) age obtained in zircons of sample PC1 is 807.7 ± 6.8 Ma and for sample P15 the age is 801 ± 4.7 Ma. The two samples have the same magmatic age within error. We conclude that the metavolcanic rocks have a similar geochemical signature suggesting that they are comagmatic in the same belt. The age of the dated samples shows that they are chronocorrelated in the Neoproterozoic.