

The Neoproterozoic Shoshonitic Serra do Catú Intrusive Complex; an evidence of a enriched lithospheric mantle in the Borborema Province, NE Brazil

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The Serra do Catú Complex is located at the northern border of the Sergipano Fold Belt, Borborema Province, representing one of the major shoshonitic intrusions of this province. It comprises amphibole bearing quartz syenites, quartz monzonites and syenites.

They have SiO_2 ranging from 52 wt% to 66 wt%; K_2O from 4.80 wt% to 8.40 wt%; MgO from 1.40 wt% to 4.60 wt%. The Ba and Sr contents are high, ranging from 2487 to 6653 ppm and from 1011 to 2023 ppm respectively; Cr from 25 to 166 ppm and Ni from 19 to 101 ppm. They are LILE and transition elements enriched, related to the HFSE, with Ba ranging from 2487 to 6653 ppm; Sr from 1011 to 2023 ppm; Cr from 25 to 166 ppm and Ni from 19 to 101 ppm. Zr and Nb show incompatible behaviour in all study facies. The spidergrams show deep troughs at Nb, Sr, Zr and Ti, which are typical of subduction related rocks. Cr and Ni contents favor an origin from a mafic magma, which then evolved through fractional crystallization plus some crustal contamination. This magma was originated from partial melt of a source rock depleted in Nb and Zr and enriched in K_2O , which is a pattern shared with others ultrapotassic rocks from the Borborema Province.