

High-K calc-alkaline magmatism in the Pajeú Paraíba Terrane, Borborema Province, NE Brazil: The Campina Grande Granitic Complex

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The Campina Grande Complex comprises porphyritic monzodiorites to quartz-monzonites, coarse grained equigranular granodiorites and K-dioritic enclaves comprises porphyritic monzodiorites to quartz-monzonites, coarse grained equigranular granodiorites and K-dioritic enclaves, intruded in gneiss - migmatite from the Pajeú-Paraíba Terrane - Central Tectonic Domain of the Borborema Province. U/Pb zircon age is 580 ± 1.4 Ma. The studied granitoids are metaluminous, show high LILE/HFSE ratios and spidergrams characterized by deep troughs at Nb, lower troughs at Ti and Hf and peaks at Ba. REE patterns do not differentiated mafic enclaves and host granitoids and are characterized by high LREE/HREE ratios (18 to 45) and lack of significant Eu anomalies, similar to those K-calc-alkaline and also shoshonitic affinities granitoids of volcanic arc.

The diorites of the Campina Grande Complex show higher contents of TiO_2 (> 1.3 wt%) and FeO_t (up to 10 wt%) and lower Sr (≤ 1050 ppm) and (Rb < 100 ppm) contents, compared with similar SiO_2 contents Neoproterozoic granitoids of shoshonitic affinities, from the Borborema Province.

Lower $\text{Fe}/(\text{Fe} + \text{Mg})$ ratios in amphiboles and biotite also distinct the granitoids of the Campina Grande Complex from Neoproterozoic granitoids of shoshonitic affinities. Thus, the granitoids from the Campina Grande Complex can be classified as high-K calc-alkaline.

The shoshonitic granitoids from the Central Tectonic Domain have a U/Pb zircon age of ca. 590 Ma. The geochemical data and the age of the Campina Grande granitoids suggest late Brasiliano high-K calc-alkaline magmatism, in the NE part of the Central Tectonic Domain of the Borborema Province.