

ALKALINE MAGMATIC EVENT POSTDATING THE BASALT FLOWS OF THE PARANÁ MAGMATIC PROVINCE IN NW URUGUAY

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The exposed volcanic areas of the Paraná Basin in Uruguay are mainly represented by tholeiitic basalt lava flows and related mafic intrusions, with ages restricted to the lower Cretaceous [1] [2]. Recent studies have shown the occurrence of undersaturated mafic rocks, cross cutting the basaltic pile which represent the first record of subvolcanic rocks of alkaline nature for the southernmost portion of the Paraná Basin and for Uruguay, with K-Ar ages (whole rock) restricted to Cenozoic [3]. These occurrences include several volcanic plugs, represented by Nephrites, according to the geochemical classification and to their mineralogical content [4]. Further works carried out in neighboring areas, following the main structural lineaments and with the help of remote images, allowed the finding of new occurrences. They are represented by porphyritic rocks with augite, plagioclase and olivine phenocrysts in a fine to hypocrySTALLINE groundmass composed of plagioclase, augite, olivine and opaque minerals. All samples show metaluminous nature and alkaline affinity, and allow their classification as tephrites, trachybasalts and alkali basalts. The litho-geochemical results show SiO₂ = 40,86%–47,74%wt. %, Al₂O₃ = 12.97–13.96 wt.%, MgO = 6.57–8.33%wt., Fe₂O₃(total) = 12.62–14.33, (Na₂O + K₂O) = 4.68–7.11 wt.%, A/CNK = 0.39–0.53, and ΣREE = 189.47 – 427.68. Moreover, these rocks are enriched in light rare earth elements (La_N/Lu_N = 14.87 - 30.95) compared to chondrite, and enriched in high field strength elements as Ta and P. In addition, they are depleted in K and Ti. These new records of alkaline plugs allow to confirm the presence of a post-Cretaceous tecto-magmatic event with alkaline affinity and with wide distribution along NW lineaments, in NW Uruguay.

[1] Muzio et al. (2017) *J.S.Am. Earth Sci.* 77, 92-107 [2] Peate (1997) *Geoph.Monograph* 100, 217-245 [3] Muzio et al. (2020) *Goldschmidt Abstracts*. [4] Olivera & Muzio (2019), *Rev.Soc. Urug.Geol.* 22, <https://www.sociedadgeologiauy.org/revista/>

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