

# Same old same old... Has the petrogenetic influence of the Altiplano-Puna Magma Body beneath the Andean Central Volcanic Zone, northern Chile, changed much since the Pliocene?

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Araral (21°35'29"S, 68°14'3"W) is a Pliocene (~2.75Ma[1]) extinct stratovolcano located on the border between Chile and Bolivia, which was constructed within the present-day underlying the Altiplano-Puna Volcanic Complex (APVC) in the Andean Central Volcanic Zone (CVZ) [2]. We present new petrography, major and trace element abundances, and O-Sr-Nd isotope data from Araral that will be used to evaluate the magmatic processes active during its formation. Results will be compared to previous work on other extinct, dormant, and or active volcanoes within the western APMB boundary to assess temporal changes in the influence of the APMB on the magmatism in this region.

The Araral samples are characterized by  $\text{SiO}_2 = 59.89 - 67.16$  % m/m;  $\text{MgO} = 1.574 - 3.461$  % m/m;  $^{87}\text{Sr}/^{86}\text{Sr} = 0.7069 - 0.7085$ ;  $^{143}\text{Nd}/^{144}\text{Nd} = 0.5123 - 0.5124$ . Preliminary results indicate high calc-alkaline andesites and dacites rich in plagioclase, pyroxene, biotite, hornblende, and olivine phenocrysts. These data are largely consistent with those of APVC lavas within the western margin of the APMB (Ascotán, Cerro Carcote, Chela, and Palpana [3]), indicating that the petrogenesis of the Araral volcanic rocks is likely controlled by similar magmatic processes, such as magma mixing and coupled fractionation and assimilation (AFC) at shallow crustal levels. Additionally, there is an overlap with data of Quaternary APVC lavas along the western margin of the APMB (Apacheta, Azufre, Cerro La Quebraba, Cordón Inacaliri, Juriques, La Poruña, La Poruña, Licancabur, Paniri, San Pedro [3, 5]).

1. Sellés and Gardeweg, 2017. SERNAGEOMIN, Serie Geología Básica.
2. de Silva, 1989. Geology.
3. González-Maurel et al., 2019. Lithos.
4. Kerr et al., 2016. Geosphere.
5. Lister, 2019. University of Cape Town.