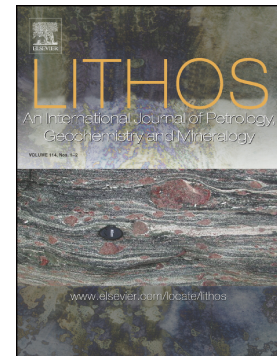


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# Magnesium isotopic composition of continental arc andesites and the implications: A case study from the El Laco volcanic complex, Chile

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**Abstract:** Continental crust can dramatically modify the geochemical and isotopic compositions (e.g., Sr-Nd, Pb) of mantle-derived lavas, and has important implications in understanding magmatic processes in continental arcs which involve subducted materials. In this paper, we report the Mg isotopic compositions of continental arc andesites from El Laco in northern Chile, and evaluate the contribution of the subducted slab to the formation of continental arc lavas. The andesites in the El Laco volcanic complex (ELVC) display relatively high ( $^{87}\text{Sr}/^{86}\text{Sr}$ )<sub>i</sub> ratios and negative age-corrected  $\epsilon_{\text{Nd}}(t)$  ( $t = 1.6 \text{ Ma}$ ) values. The  $\delta^{26}\text{Mg}$  values of the ELVC andesites range from  $-0.26 \pm 0.05\text{‰}$  to -

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