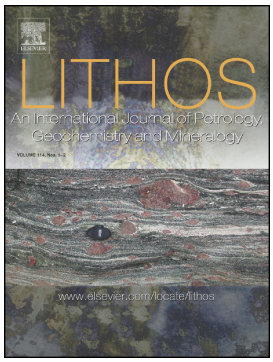

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Magnesium isotopic composition of continental arc andesites and the implications: A case study from the El Laco volcanic complex, Chile

Qiuhong Xie[1], Zhaochong Zhang[1,*] , Eduardo Campos[2], Zhiguo Cheng[1], Xianghui Fei[1], Bingxiang Liu[1], Yiran Qiu[3], M. Santosh[1,4], Shan Ke[1], Lijuan Xu[1]

[1] State Key Laboratory of Geological Processes and Mineral Resources, China University of Geosciences, Beijing 100083, China

[2] Departamento de Ciencias Geológicas, Universidad Católica del Norte, Antofagasta 1240000, Chile

[3] Shandong 5th Geo-Mineral Prospecting Institute, Tai'an 271000, China

[4] Department of Earth Sciences, University of Adelaide, Adelaide, SA 5005, Australia

*Corresponding author: Zhaochong Zhang;

10 E-mail address: zczhang@cugb.edu.cn;

11 Telephone: 86-10-13910168892;

12 Fax: 86-10-82322195

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 fromEl 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 $(^{87}Sr/^{86}Sr)_i$ ratios and negative age-corrected $\varepsilon_{Nd}(t)$ (t = 1.6 Ma) values. The $\delta^{26}Mg$ values of the ELVC andesites range from -0.26 ± 0.05‰ to -