Late Mesozoic felsic magmatism and Mo-Au-Pb-Zn mineralization in the southern margin of the North China Craton:A review

Taiping Zhao, Lei Meng, Xinyu Gao, Chang Jin, Qiang Wu, Zhiwei Bao

PII: S1367-9120(18)30142-1
DOI: https://doi.org/10.1016/j.jseaes.2018.04.020
Reference: JAES 3474

To appear in: *Journal of Asian Earth Sciences*

Received Date: 31 July 2017
Revised Date: 18 April 2018
Accepted Date: 19 April 2018

Please cite this article as: Zhao, T., Meng, L., Gao, X., Jin, C., Wu, Q., Bao, Z., Late Mesozoic felsic magmatism and Mo-Au-Pb-Zn mineralization in the southern margin of the North China Craton:A review, *Journal of Asian Earth Sciences* (2018), doi: https://doi.org/10.1016/j.jseaes.2018.04.020

Late Mesozoic felsic magmatism and Mo-Au-Pb-Zn mineralization in the southern margin of the North China Craton：A review

Taiping Zhao[1]*, Lei Meng[1, 2], Xinyu Gao[1], Chang Jin[1, 2], Qiang Wu[1, 2], Zhiwei Bao[1]

[1] *Key Laboratory of Mineralogy and Metallogeny, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou 510640, China*

[2] *University of Chinese Academy of Sciences, Beijing 100049, China*

* Corresponding author (email: tpzhao@gig.ac.cn)

Abstract

The widespread large-scale Mo-Au-Pb-Zn mineralization in the southern margin of the North China Craton (NCC) is spatially and temporally associated with the voluminous late Mesozoic granitic magmatism. Relationship between the granitic magmatism and ore mineralization has been extensively investigated in the last decade. However, controversy still exists regarding the magma source, metallogeny and geodynamic settings. This paper systematically reviews the major features of the Mesozoic granitic magmatism and associated Mo-Au-Pb-Zn mineralization in the southern margin of the North China Craton, including temporal and spatial variations of magmatic rocks, composition of ore-fluids, sources of ore metals, and metallogeny. The granitic rocks were mainly formed in late Mesozoic and emplaced in two stages. The early-stage (158–128 Ma) granites are of typical I-type derived from remelting of ancient crust of the southern margin of the NCC with input of mantle material under lithospheric thinning tectonic regime. The late-stage (127–112 Ma) granites include