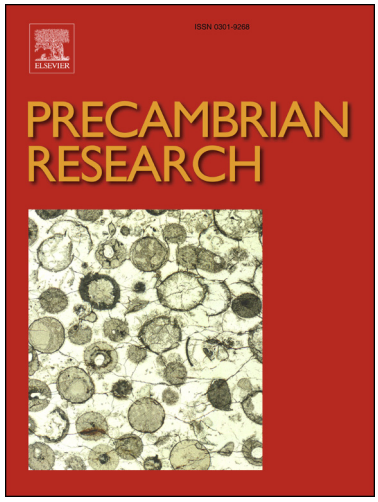

Zircon U–Pb geochronology and Hf isotope of granitoids in East Kunlun: Implications for the Neoproterozoic magmatism of Qaidam Block, Northern Tibetan Plateau

Dengfeng He, Yunpeng Dong, Xiaoming Liu, Xiaohu Zhou, Feifei Zhang, Shengsi Sun

PII: S0301-9268(18)30098-6
DOI: https://doi.org/10.1016/j.precamres.2018.06.017
Reference: PRECAM 5119

To appear in: *Precambrian Research*

Received Date: 14 February 2018
Revised Date: 22 June 2018
Accepted Date: 30 June 2018

Please cite this article as: D. He, Y. Dong, X. Liu, X. Zhou, F. Zhang, S. Sun, Zircon U–Pb geochronology and Hf isotope of granitoids in East Kunlun: Implications for the Neoproterozoic magmatism of Qaidam Block, Northern Tibetan Plateau, *Precambrian Research* (2018), doi: https://doi.org/10.1016/j.precamres.2018.06.017

Zircon U–Pb geochronology and Hf isotope of granitoids in East Kunlun: Implications for the Neoproterozoic magmatism of Qaidam Block, Northern Tibetan Plateau

Dengfeng He[a], Yunpeng Dong[a,b]✉, Xiaoming Liu[a], Xiaohu Zhou[a] Feifei Zhang[a], Shengsi Sun[a]

[a] State Key Laboratory of Continental Dynamics, Department of Geology, Northwest University, Northern Taibai Str. 229, Xi'an 710069, China

[b] Department of Earth Science, Western University, 1151 Richmond Str., London, Ontario N6A 3K7, Canada

Abstract

The Neoproterozoic granitoids in East Kunlun Orogen (EKO) record critical information on the composition and evolution of the early crustal materials, as well as the Precambrian tectonic evolutionary history of the Qaidam Block, northern Tibetan Plateau. Zircon U–Pb geochronology and Hf isotopic compositions of three newly discriminated gneissic granitoids in the Hongshuihe, Dangennaomuru and south Bokalike areas are employed in this study to elucidate the Neoproterozoic tectonics of EKO. Petrological studies reveal that these granitoids are S–type granite with abundant Al–rich minerals like muscovite and garnet in their mineral assemblages. Zircon U–Pb geochronological results show that the Hongshuihe and Dangennaomuru plutons yield weighted mean $^{206}Pb/^{238}U$ ages of 914 ± 5 Ma (MSWD = 0.25) and 935 ± 6 Ma (MSWD = 0.56), respectively, indicating their magmatic crystallization ages. And the south Bokalike pluton yields upper and lower intercept ages of 1002 ± 31 Ma and 388 ± 39 Ma (MSWD = 0.63), disclosing its magmatic crystallization age and

✉ Corresponding author. Tel.: +86 29 88303028; E-mail address: dongyp@nwu.edu.cn