A Big Earth Data Platform for Three Poles

**Geochemistry and zircon trace elements composition of the Miocene ore‐bearing biotite monzogranite porphyry in the Demingding porphyry Cu‐Mo deposit, Tibet: Petrogenesis and implication for magma fertility**

1、Description

Demingding is a less studied post collisional porphyry copper molybdenum deposit, which is located in the east of Gangdise porphyry copper belt. This paper provides LA-ICP-MS zircon U-Pb dating, whole rock geochemistry and zircon trace element data of biotite porphyry in Deming top. Zircon U-Pb dating shows that the weighted average 206 Pb / 238 u age of Miocene biotite porphyry is 20.36 ± 0.46ma (mswd = 2.6, n = 21). Miocene biotite porphyry has high SiO\_ 2、K\_ 2O and Al\_ 2O\_ 3, and shows characteristics similar to adakite. These rocks have high Sr / y ratio and fractionated REE mode with low hree abundance. Compared with HFSE, they are enriched in lile with (87 Sr / 86 SR) I value of 0.7059 ~ 0.7062, ε Nd (T) value is − 2.35 ~ − 1.67, and (- 206 Pb / 204 Pb) I value is 18.50 ~ 18.55. These characteristics are similar to other Miocene adakitic intrusive rocks in the Gangdise belt. We believe that biotite porphyry has the same petrogenesis as other Miocene ore bearing intrusive rocks in the eastern Gangdise belt. Its genesis comes from the mixing of subduction transformation, remelting of metamorphic lower crust of Tibet and hydrated mafic magma metasomatizing the mantle of Tibet. Zircon in biotite porphyry has only very small negative Eu anomaly (Eun / Eun \* > 0.3), with large Ce ~ (4 +) / Ce ~ (3 +) ratio (average 113), 10000 ~ \* (Eun / Eun \*) / Y (3.94 ~ 8.14 > 1), CE / Nd (9-58, average 30), (CE / nd) / Y (0.008 ~ 0.127 > 0.003), dy / Yb (0.15-0.24, < 1); 0.3), indicating that biotite porphyry has relative hydration and oxidation. Therefore, biotite porphyry is considered to be a relatively enriched intrusion with certain exploration potential. Data source: entrusted the Institute of mineral resources, Chinese Academy of Geological Sciences and the State Key Laboratory of geological process and mineral resources, China University of Geosciences (Beijing). The data results are good.

2、Keywords

Theme：porphyry Cu‐Mo deposit,Others,petrogenesis,magma fertility  
Discipline：Solid earth  
Places：Demingding, Gangdese  
Time：None

3、Data details

1.Scale：None

2.Projection：

3.Filesize：0.2MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：29.65 | - |
| west：92.58 | - | east：92.65 |
| - | south：29.58 | - |

5、Time frame:2018-06-30 16:00:00+00:00--2021-08-14 16:00:00+00:00

6、Reference method

References to data:

ZHANG Zebin , WANG Liqiang . Geochemistry and zircon trace elements composition of the Miocene ore‐bearing biotite monzogranite porphyry in the Demingding porphyry Cu‐Mo deposit, Tibet: Petrogenesis and implication for magma fertility. A Big Earth Data Platform for Three Poles, doi:10.11888/SolidEar.tpdc.2720542022

References to articles:

Zhang, Z.B., Wang, L.Q., Tang, P., Lin, B., Sun, M., Qi, J., Li, Y.X., Yang, Z.K., & Tang, L. (2020). Geochemistry and zircon trace elements composition of the Miocene ore‐bearing biotite monzogranite porphyry in the Demingding porphyry Cu‐Mo deposit, Tibet: Petrogenesis and implication for magma fertility. Geological Journal, 55(6), 4525-4542. https://doi.org/10.1002/gj.3693.

7、Supporting project information

Mineralization systems of important ore deposits and integrated demonstration of prospecting and exploration technology

8、Data resource provider

name: WANG Liqiang   
unit: Institute of Mineral Ｒesources，Chinese Academy of Geological Sciences  
email: wlq060301@163.com  
  
name: ZHANG Zebin   
unit: China University of Geosciences, Beijing  
email: wlq060301@163.com