1 Introduction

The Beiligaimiao magmatic sulfide deposit is hosted in a small ultramafic intrusion which occurs in the southern part of the Central Asian Orogenic Belt (CAOB) in the Inner Mongolia (Fig. 1, 2). Oceanic subduction in this part of CAOB lasted until the early Triassic (e.g., Xiao et al., 2003). In contrast, oceanic subduction in the Tianshan region farther to the west (Fig. 1a) finished before the early Permian (e.g., Song et al., 2013).

2 Results

The Beiligaimiao ultramafic intrusion is predominantly composed of lherzolite. The U-Pb ages of baddeleyite and zircon crystals from the intrusion are 272.2 ± 3.2 Ma and 269.4 ±2.1 Ma, respectively. Olivine in the Beiligaimiao ultramafic rocks is moderately fractionated (Fo contents varying between 72 and 75 mole %) and depleted in Ca (<1000 ppm). Whole rock samples from the Beiligaimiao intrusion are characterized by light REE enrichments
relative to heavy REE and pronounced negative Nb-Ta anomalies. The olivine and whole-rock data for Beiligaimiao intrusion are consistent with cumulate rocks that formed in an arc setting. Mineralization in the Beiligaimiao intrusion occurs as disseminated sulfides (pyrrhotite, pentlandite and chalcopyrite). The $^{34}$S values of the sulfides are 1.7-2.5 per mil, which are within the range of typical mantle values.

As shown in Fig. 1a, the southern part of the Central Asian Orogenic Belt contains magmatic sulfide deposits formed in a subduction setting such as the Beiligaimiao deposit (this study) and the Erbutu deposit (Peng et al., 2013) in the central region, and post-subduction setting such as the Huangshandong deposit in the western region (Mao et al., 2014) and the Hongqiling No.7 deposit in the eastern region (Wei et al., 2013).

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References