



Geochronological, Geochemical Characteristics and Geological Significance of Rhyolite in the Manketou'ebo Formation of the Dongwuqi Area, Inner Mongolia

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Abstracts: In order to determine the age attribution and tectonic setting of the volcanic strata of the Manketou'ebo Formation in the Dongwuqi area of Inner Mongolia, the geochronological characteristics and geochemical characteristics of the rhyolite of the Manketou'ebo Formation were studied. The rhyolite of zircon harmony is good, and the age-weighted average of $^{206}\text{Pb}/^{238}\text{U}$ is $150.9 \pm 4.2\text{Ma}$, which is the product of the Late Jurassic magma evolution event. The element geochemical characteristics show that the rhyolite in the Manketou'ebo Formation belongs to the high-potassic calc-alkaline series of rocks and is characterized by high silicon, alkali-rich, high-aluminum, and low-calcium-depleted magnesium. The total amount of rare earth elements changes greatly, the distribution curve is right-turned, and there is negative anomaly of Eu. It enriches Large Ion-Lithophilic Elements of Rb, K, Th, and LREE, Simultaneously depletes elements of Sr, Nb, Ti, P. The basic compatible elements Cr, Co, Ni and $\text{Mg}^\#$ are relatively low, rhyolite has A-type granite characteristics, and the magma is derived from the partial melting of the lower crust rocks. Combined with regional research data, the formation of the Late Jurassic rhyolite in the study area is closely related to the lithospheric extension environment after the land-continent collision in the Mongolia-Okhotsk suture zone. Its chronological and geochemical results provide a powerful basis for exploring the closure time of the Mongolia-Okhotsk Ocean in the southern Daxinganling region.

Key words: Dongwuqi of Inner Mongolia, rhyolite, geochemical characteristics, tectonic setting, geological significance

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