

The Bama Gold Deposit Tectonic Background in Guangxi, South China: Evidence from Geochemical Study of Gold-bearing Mafic Rocks

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The Permian mafic magmatic rocks, such as diabase and basalt, in southwest of Yangtze massif are concentrated in the Bama region of western Guangxi, economically significant gold mineralizations are genetically associated with these mafic rocks. However, the origin of these mafic magmatism and associated gold deposit tectonic background are still unclear. Here, we firstly present the comprehensive major element, trace element and Sr-Nd isotopic data of Ore-bearing and barren mafic rocks, the geochemical characteristics of the bulk of mafic rocks showed a relative high TiO_2 (2.74-4.61%), low SiO_2 (45.2-49.3%), which are similar to ocean island basalt (OIB) signatures. Their trace element concentration patterns enriched in REE and highly incompatible elements, Nb and Ta, which was akin to those of the Emeishan flood basalts (Figure 1), are considered to be the products of magma activity from mantle plume. Owing to the Bama located in the outer zone of Emeishan flood-basalt province, we suggest the Bama gold deposit tectonic background and related magmatism were probably associated with Emeishan mantle plume.

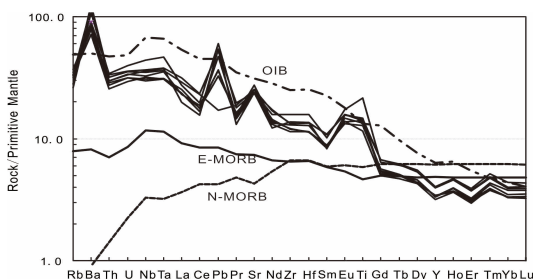


Figure 1. Primitive mantle-normalized incompatible element concentrations of Bama mafic rocks.

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