

The Origin of Triassic granitoids in the western segment of West Qinling, Central China

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The West Qinling Orogenic Belt (WQOB) is the westward extension of East Qinling and is linked by Qilian terrane in the north, East Kunlun in the west, and the Songpan–Garzê terrane in the south [1]. The WQOB, an important part of the Qinling-Dabie-Sulu Orogen (Central Orogen), is essential to understand the prolonged evolution of the northeastern branch of the Paleo-Tethys in East Asia. Zircon LA-ICP-MS U–Pb age and Lu–Hf isotopes, bulk-rock major and trace element, and Sr–Nd isotope data for several intrusions from the Tongren area, Guide area, Zeku area, West Qinling are presented. LA-ICP-MS zircon U–Pb dating analyses constrain the time of crystallization of these granitoids to ca. 220–245 Ma. Granitoids have I-type, high-K to shoshonitic, and metaluminous to weakly peraluminous character, showing bulk-rock geochemical features of arc-related granitoids. The data suggest that magmas were generated by dehydration melting of a mafic lower crustal component with additional input of a mafic component derived from the subcontinental lithospheric mantle. We conclude that the Tongren granodiorite formed in a subduction-related regime in response to slab roll-back of the northward-subducting A'nyemaqen–Mianlue oceanic lithosphere.

[1] Li et al. (2013) *Lithos.* **172-173**, 158-174.

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