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Late Triassic crustal growth in southern Tibet: Evidence from the Gangdese magmatic belt

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Abstract: The Gangdese magmatic belt, located in the southern margin of the Lhasa block and carrying significant copper and polymetallic mineralization, preserves important information relating to the tectonics associated with India-Eurasia collision and the crustal growth of Tibet. Here we investigate the Quxu batholith in the central domain of the Gangdese belt and report the occurrence of hornblende gabbros for the first time. We present petrologic, zircon U-Pb-Hf isotopic and bulk-rock chemistry data on these rocks. The hornblende gabbros display sub-alkaline features, and correspond to tholeiite composition. They also show medium K calc-alkaline to low K affinity. The rocks show enrichment in LILEs and LREEs, but are depleted in HFSEs,