

Wen, D.J., Hu, X., Yu, J.H., Wang, X.L., Chapman, T., and Wang, R.Q., 2022, Origin of Late Cretaceous, enclave-bearing granitoids in southern Tibet: Implications for magma recharge and crustal thickening: GSA Bulletin, <https://doi.org/10.1130/B36530.1>.

## Supplemental Material

**Table S1.** Synthesized Zircon U–Pb age data of the Late Cretaceous intrusive rocks from the Gangdese batholith.

**Table S2.** LA–ICP–MS zircon U–Pb dating results of representative samples from the NPs, RPs, and XPs in the Gangdese batholith.

**Table S3.** In situ zircon Hf isotopic compositions of the representative samples from the NPs, RPs, and XPs in the Gangdese batholith.

**Table S4.** Whole-rock major element (wt%) and trace element (ppm) compositions of representative samples from the NPs, RPs, and XPs in the Gangdese batholith.

**Table S5.** Whole-rock Sr–Nd isotopic compositions of representative samples from the NPs, RPs, and XPs in the Gangdese batholith.

**Table S6.** Chemical compositions (wt%) and calculated formula of amphibole from the NPs, RPs, and XPs in the Gangdese batholith.

**Table S7.** Non-modal batch melting modeling for the Late Cretaceous intrusive rocks in the Gangdese batholith.