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## Supplemental Material

**Figure S1** Field outcrops for the Nanba intrusive complex along the western Yangtze Block, South China. (See text for detailed descriptions)

**Figure S2** Cathodoluminescence (CL) images of representative zircons of the different lithologies in the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China.

**Figure S3** Laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) zircon U-Pb concordia diagrams for the different lithologies in the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China.

**Figure S4** Photomicrographs show the polycrystalline aggregate of feldspar phases in the K-feldspar granites in Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China. Pl—plagioclase; Kfs—K-feldspar.

**Supplemental Data S1** A summary of Neoproterozoic igneous rocks of the western Yangtze Block, South China

**Supplemental Data S2** Representative electron probe analyses of feldspar from the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China

**Supplemental Data S3** Representative electron probe analyses of hornblende from the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China

**Supplemental Data S4** LA-ICP-MS zircon U-Pb dating results for the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China

**Supplemental Data S5** Zircon Lu-Hf isotopic data of the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China

**Supplemental Data S6** The whole-rock major (wt.%) and trace (ppm) elements for the Neoproterozoic Nanba intrusive complex of the western Yangtze Block, South China













