



Figure S1 (a) A location map of the Nanhua Rift Basin. (b) A detailed geological sketch of the distribution of Mn ore deposits in the basal Datangpo Formation. Abbreviations of the Mn deposits: XS–Xiushan; LZW–Lijiawan; ZLG–Zhailanggou; YLZ–Yanglizhang; GD–Gaodi; DT–Daotuo; DTP–Datangpo; JX–Juxian; XXB–Xixibao; CXP–Changxingpo; GZ–Guzhang. Modified from [23,63].

Legends: (1) synsedimentary fault controlling the graben subbasin in the Nanhua Rift Basin, (2) synsedimentary fault controlling the ore-hosting subbasins, (3) synsedimentary fault number, (4) Mn ore deposit, (5) Mn ore deposits from which we collected samples, (6) graben basin, (7) horst area.