Supplementary Figure 1；

Supplementary Table 1 The data for setting geochemical criteria；

Supplementary Table 2 The qualified data were chosen for the Sr/Y dataset；

Supplementary Table 3 The data of the fitting curve and the QAPF modal diagram；

Supplementary Table 4 The rmse calculated by Sr/Y formulas；

Supplementary Table 5 The rmse for all regions；

Supplementary Table 6 Application to Bainaimiao arc and northern NCC and data of the QAPF modal diagram.