

(a) Volcanic rocks from Kibblewhite Volcano

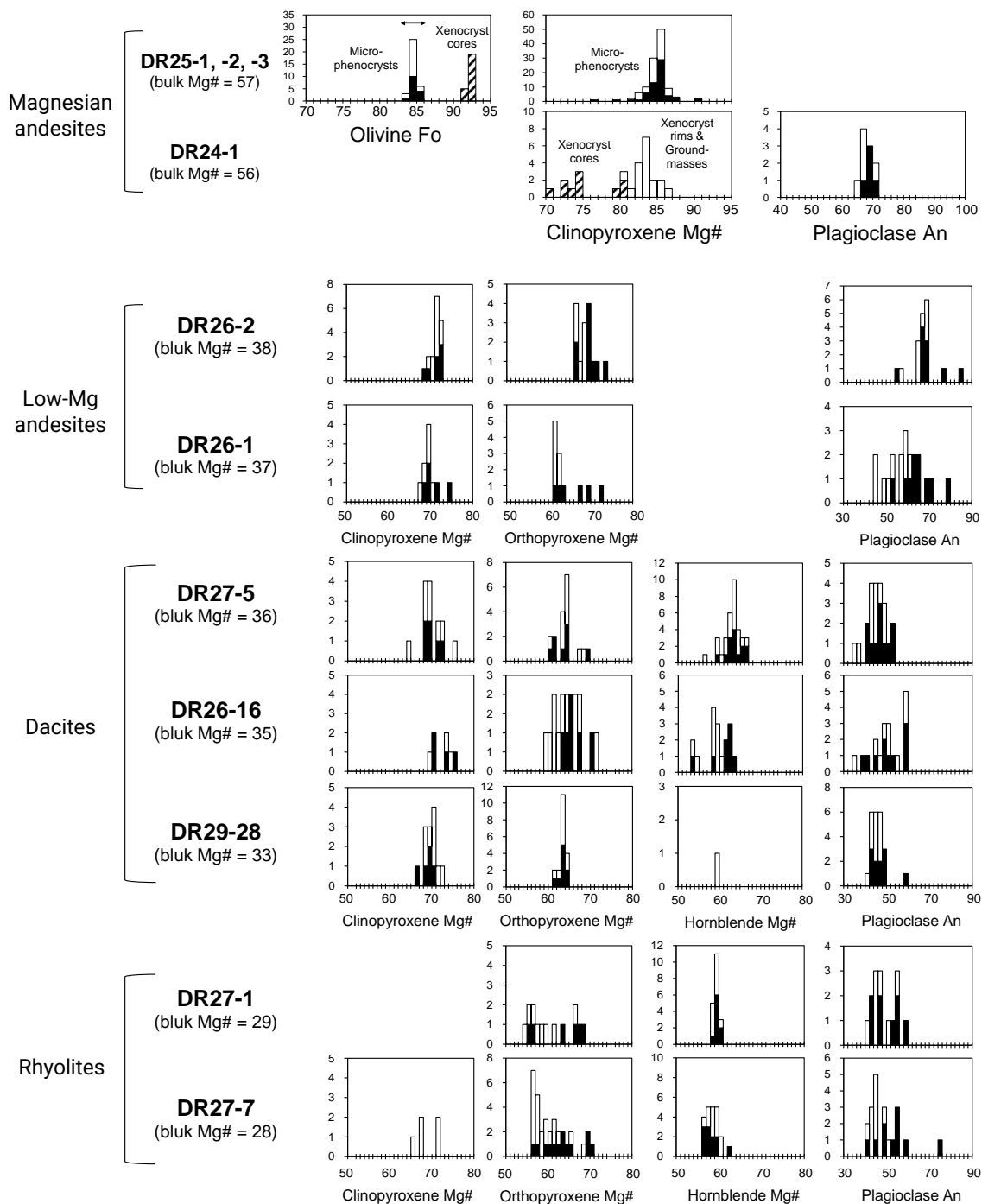


Figure S1. Frequency diagrams for the chemical compositions of minerals in (a) volcanic rocks from Kibblewhite volcano and (b) basalts from the neighbouring cones. Core compositions are shown as dark-coloured bars, and rim and groundmass compositions are shown as light-coloured bars. Arrows in the diagrams for olivine indicate the range of calculated compositions in equilibrium with the whole-rock compositions, assuming mineral-melt Fe/Mg exchange coefficient (K_d) = 0.3, and $\text{Fe}^{3+}/\text{Fe}^{\text{total}}$ in whole-rock compositions = 0.2 to 0.3. Fo, 100Mg/(Mg+Fe); Mg#, 100Mg/(Mg+Fe); An, 100Ca/(Ca+Na+K).

(b) Basalts from the neighbouring cones

