

New geochemical and Sr-Nd isotopic data for the Caramulo pluton (Central Iberian Zone)

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FIGURE 1

Geological sketch map of the Caramulo pluton, showing sample locations (modified from Godinho, 1980). Inset on the right shows the location of the studied area (modified from Azevedo & Valle Aguado, 2006).

The Caramulo granite pluton is a Variscan syntectonic intrusion, emplaced into metasediments of Ediacaran–Early Cambrian age of the Schist and Greywacke Complex (Central Iberian Zone) at the end of collisional mountain building processes involving the convergence between Laurussia and Gondwana. At map scale, the intrusion shows a zonal pattern defined by the occurrence of four distinct facies of muscovite-biotite leucogranites (Caramulo, Paredes, Almijofa e M. Alcoba) (Fig. 1). The whole-rock Rb-Sr isochron obtained in this study suggests that the pluton emplacement age (311 ± 8 Ma) may be slightly younger than previously proposed (326 ± 17 Ma).

Combined whole-rock major- and trace element data and Sr-Nd isotopic compositions for the different granite units ($A/CNK > 1.1$; high SiO_2 contents, low CaO, MgO, Ba, Sr, $^{87}Sr/^{86}Sr_i > 0.710$, $\epsilon Nd_{310} = -3.4$ to -5.1 ; $T_{DM} = 1.1 - 1.2$ Ga) support a major involvement of old crustal metasedimentary sources in the genesis of these granite magmas (S-type origin). From the significant degree of overlap between the Nd isotopic signatures and T_{DM} ages of the studied granites and those of the adjoining country rocks, it is proposed that these magmas formed by partial melting of metasediments with similar composition.

