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Rb-Sr AND Pb-Pb GEOCHRONOLOGICAL STUDIES ON THE GRANITE GNEISSES OF KUILAPAL, PURULIA-BANKURA MIDNAPORE DISTRICTS, WEST BENGAL

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Abstract

Several younger granite plutons occur as intrusives in the Singhbhum Mobile Belt (SMB) surrounding the Singhbhum-Orissa Craton. Of these, Kuilapal granite body is the largest. Minor granite bodies occur to the south of Dalma volcanics, which are similar to these granites. Geochemical data on them indicate, they are distintinctly fertile for atomic minerals U, Th, Y, Nb, and other rare earths elements. Therefore more isotopic data can help in better understanding their evolution and genesis.

In the present study, Rb-Sr whole isochron age of 1792±98 Ma, with an initial $^{87}Sr/^{86}Sr$ initial ratio of 0.7064 ±0.0069 (MSWD = 13), and Pb-Pb age of 1863 ±80Ma (MSWD = 11.3) with a model μ_1 value of 8.53±0.27 has been obtained for the granite gneiss of Kuilapal. The $^{87}Sr/^{86}Sr$ initial ratio and model μ_1 value are higher than the cotemporary mantle sources, indicating the involvement of enriched crustal sources. The data suggest that an age of c.1800 Ma is the age of crystallization and emplacement of these granites.

Keywords: *SMB, Kuilapal granite, Valcanics, Geochemical studies, Atomic minerals.*