

Petrogenesis of Mesoarchean Na-rich(TTG) and K-rich granitoids from the Ntem Complex, Congo Craton, Cameroon: geodynamic implication

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The late Archaean period (3.0-2.5 billion years (Ga)) represents a significant transitional geodynamic change in the Earth's history. Congo Craton is one of the oldest terranes (*ca.* 3.4-2.5 Ga) of central Africa with voluminous granitoids, supracrustal rocks, and tectonic belts. Here, we present new geochemical and geochronological data for *ca.* 2870–2865 Ma Tonalites-Trondhjemites-Granodiorites (TTGs) and K-rich granitic gneisses of the Ntem Complex in southern Cameroon[1,2]. We suggest that TTG gneisses were most likely generated by partial melting of a common mafic source with plagioclase, amphibole, pyroxene as main residual phases, and may have experienced magmatic fractional crystallisation. The granitic gneisses are classified into biotite and two-mica granites, and hybrid granites. We propose that the granitic gneisses were derived from the intra-crustal melting of a pre-existing crust, and the granitic gneisses and contemporaneous TTG gneiss were generated through the same magmatic event at ~ 2.87-2.86 Ga. Such granitic magmas may represent intracrustal melts of more potassic members of the Mesoarchean TTGs. Mesoarchean synchronous TTG gneisses and potassic granitoids in Ntem Complex implying an important crustal growth and crustal reworking event in Mesoarchean (~2.87–2.86 Ga)[3].

[1] Akame, J.M.; Oliveira, E.P.; Poujol, M.; Hublet, G.; Debaille, V. *Lithos* **2020**, 372–373, 105702, doi:10.1016/j.lithos.2020.105702.

[2] Akame, J.M.; Schulz, B.; Owona, S.; Debaille, V. *Journal of African Earth Sciences* **2021**, 181, 104268, doi:10.1016/j.jafrearsci.2021.104268.

[3] Akame, J. & Debaille, V. Goldschmidt 2021 Abstract. <https://doi.org/10.7185/gold2021.5300>