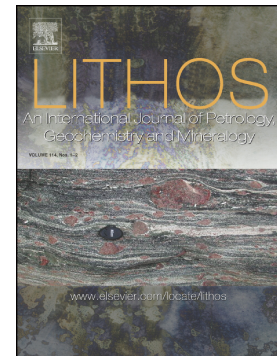


Accepted Manuscript

Petrogenesis and geodynamic implications of Ediacaran highly fractionated A-type granitoids in the north Arabian-Nubian Shield (Egypt): constraints from whole-rock geochemistry and Sr-Nd isotopes

Mabrouk Sami, Theodoros Ntaflos, Esam S. Farahat, Haroun A. Mohamed, Christoph Hauzenberger, Awaad F. Ahmed



PII: S0024-4937(18)30063-X
DOI: doi:[10.1016/j.lithos.2018.02.015](https://doi.org/10.1016/j.lithos.2018.02.015)
Reference: LITHOS 4574

To appear in:

Received date: 20 October 2017
Accepted date: 16 February 2018

Please cite this article as: Mabrouk Sami, Theodoros Ntaflos, Esam S. Farahat, Haroun A. Mohamed, Christoph Hauzenberger, Awaad F. Ahmed , Petrogenesis and geodynamic implications of Ediacaran highly fractionated A-type granitoids in the north Arabian-Nubian Shield (Egypt): constraints from whole-rock geochemistry and Sr-Nd isotopes. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Lithos(2018), doi:[10.1016/j.lithos.2018.02.015](https://doi.org/10.1016/j.lithos.2018.02.015)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Petrogenesis and geodynamic implications of Ediacaran highly fractionated A-type granitoids in the north Arabian-Nubian Shield (Egypt): constraints from whole-rock geochemistry and Sr-Nd isotopes

Mabrouk Sami^{a,b}, Theodoros Ntaflos^a, Esam S. Farahat^b, Haroun A. Mohamed^b, Christoph Hauzenberger^c, Awaad F. Ahmed^b

^aDepartment of Lithospheric Research, University of Vienna, Althanstrasse 14, A-1090 Vienna, Austria

^bDepartment of Geology, Faculty of Science, Minia University, El-Minia 61519, Egypt

^cInstitute of Mineralogy and Petrology, Karl-Franzens University, Graz, Austria

Abstract

Mineral chemistry, whole-rock geochemical and Sr–Nd isotopic data are reported for the Abu-Diab granitoids in the northern Arabian-Nubian Shield (ANS) of Egypt, to investigate their petrogenesis and geodynamic significance. Gabal Abu-Diab constitute a multiphase pluton, consisting largely of two-mica granites (TMGs) enclosing microgranular enclaves and intruded by garnet bearing muscovite granites (GMGs) and muscovite granites (MGs). The granitoids are weakly peraluminous ($A/CNK=1.01–1.12$) and show high SiO_2 (>72.9 wt.%) and alkali ($K_2O+Na_2O = 8.60-9.13$) contents. The geochemical features show that they are post-collisional and highly fractionated A-type granitoids. Compared to their host TMGs, the microgranular enclaves are strongly peraluminous ($A/CNK = 1.18-1.24$) with lower SiO_2 and higher abundances of trace elements. The TMGs are depleted in Ba, Nb, P and Ti and are enriched in LREEs relative to HREEs with weakly negative Eu anomalies ($Eu/Eu^* = 0.45-0.64$). In contrast, the GMGs and MGs are extremely depleted in Ba, Sr and Ti and have tetrad-type REE patterns ($TE_{1-3} = 1.1-1.3$) with strongly pronounced negative Eu anomalies ($Eu/Eu^* = 0.03-0.26$), similar to rare metals bearing granites. The Ediacaran (585 ± 24 Ma) TMGs, are characterized by

Download English Version:

<https://daneshyari.com/en/article/8911703>

Download Persian Version:

<https://daneshyari.com/article/8911703>

[Daneshyari.com](https://daneshyari.com)