

Geochemistry of Shanderman eclogite, constrains on protolith nature

H. Omrani^{*1,2}, M. Moayyed¹, R. Obersänsli³, R. Bousquet³, T. Tsujimori⁴

1- University of Tabriz, Faculty of Sciences, Geology Dept. Tabriz.

2- Golestan University, Faculty of Sciences, Geology Dept. Gorgan.

3- Institut für Geowissenschaften, Universität Potsdam, Potsdam, Germany.

4- Research Institute of Natural Sciences, Okayama University of Science, Okayama Japan.

(Received: 12/12/2009, in revised form: 20/4/2010)

Abstract: Shanderman eclogites are exposed at the west of Shanderman town, Talesh Mountains, in north Iran. Protoliths in these rocks has basaltic composition. Geochemical studies indicate that most of the samples have tholeiitic feature. $Mg^{\#}$ versus Cr and Ni show that they experienced olivine and clinopyroxene fractionation. Spider diagram shows more fractionation of olivine compared to clinopyroxene. The trace element versus major oxides diagrams show that major oxides had no significant (except Na and to some extent Fe) variation during alteration and subsequent metamorphism. Based on $\sum REE$, eclogite of the Shanderman can be divided into two groups. First group shows $\sum REE = 31.1$ ppm and $(La/Lu)_N = 0.6$. Second group have $\sum REE = 139.2$ ppm and $(La/Lu)_N = 2.3$. Chondrite REE normalized patterns show that they are comparable with N-MORB and E-MORB. These patterns (N-E MORB) indicate that either Shanderman eclogite protolith magma source was not homogenous or it experienced different melting degrees, changing from LSS (slow spreading ridge) to FSS (fast spreading ridge).

Keywords: shanderman, eclogite, geochemistry, paleotethys

متن فارسی اصل مقاله از صفحه ۴۳۱ تا ۴۴۴ در این شماره به چاپ رسیده است.

*Corresponding author, Tel: 09112723950, E-mail: Omrani.hadi@yahoo.com