

## **STABLE ISOTOPES AS INDICATORS OF THE FLUID RELATED TO THE FORMATION OF THE AMPHIBOLITE IN THE OGCHEON SUPERGROUP, SOUTH KOREA**

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Amphibolites from the central part of the Ogcheon Belt were analyzed for oxygen and hydrogen isotopes to evaluate the source of the fluid involved in the process of metamorphism and/or alteration of the amphibolites.  $\delta^{18}\text{O}$  values of the amphibolites from the Chungju-Hwanggangri, Mungyeong-Gaeun, and Ogcheon-Boeun areas range from 3.1 to 6.8, from -2.2 to 8.4, and from 1.3 to 7.4 ‰, respectively.  $\delta\text{D}$  values of the amphibolites from the Chungju-Hwanggangri, Mungyeong-Gaeun, and Ogcheon-Boeun areas range from -118 to -82, from -121 to -95, and from -116 to -97 ‰, respectively. The oxygen isotopic values of the amphibolites in the three areas are less than 10‰. Geochemical study of Ogcheon amphibolite indicate that the parental rocks of amphibolites are mostly transitional basalts, and the crustal contamination has not significantly influenced the chemistry of the amphibolites. It was suggested that parental magmas of the amphibolites were derived from a heterogeneous mantle source based on geochemical and isotopic data. The shifting of the oxygen and hydrogen isotopic values to the lighter range of oxygen and hydrogen probably have been caused by the interaction between the light fluid and the amphibolites in the later stage.