

Paleoproterozoic and Triassic tectonothermal events in Oki Gneiss, Japan: SHRIMP dating of monazite

D.-L. CHO¹, Y. TAKAHASHI² AND K. YI³

¹Korea Institute of Geoscience and Mineral Resources, Daejeon, 305-350, Korea (*correspondence: dlcho@kigam.re.kr)

²Geological Survey of Japan, AIST, Ibaraki, 305-8567, Japan (takahashi-yutaka@aist.re.jp)

³Korea Basic Science Institute, Daejeon, 305-333, Korea (kyi@kbsi.re.kr)

The Japanese Islands are regarded to have been located on the eastern margin of the Asian Continent before opening of the East Sea (Japn Sea) in Miocene time. The Hida belt in the southwest Japan is a pre-Cretaceous continental terrane among the Japanese island arc system which is predominated with oceanic terranes. Thus understanding tectonic evolution of the Hida belt is critical to correlate it with major East Asian cratons and to reconstruct configuration of the Permo-Triassic continental collisions.

We report here SHRIMP U-Pb monazite age obtained from a paragneiss (biotite+cordierite+sillimanite+garnet) of Oki-Dogo Island in the Hida belt (Oki Gneiss). Monazites from the sample are round and generally 100-300 μ m. BSE images reveal complex internal patchy zoning of the monazite. Analyses on the monazites have U and Th values ranging 3539-11222 ppm and 28877-45387 ppm, respectively, and form an array of dispersive apparent ages which define the upper and lower intercepts at 1858 ± 15 and 220.3 ± 3.4 Ma ($n = 14$, MSWD = 2.9). These ages are well corroborated with our previous SHRIMP U-Pb zircon ages of the Oki Gneiss which have marked Late Paleoproterozoic (1867 ± 16 Ma) and Triassic metamorphism (235.0 ± 6.1 Ma). Slightly younger ages of the monazite than those from the zircon would be ascribed to lower blocking temperature of monazite. Our monazite age data confirm that the Oki Gneiss was formed at *ca* 1.9 Ga, and much older than gneiss in Hida area (Hida Gneiss) which was deposited during Paleozoic. The *ca* 220 Ma age obtained from monazite indicate that the Permo-Triassic tectonothermal events had taken effect until upper Triassic time in the Hida belt. The *ca* 1.9 Ga formation age and the Permo-Triassic tectonothermal events of the Oki Gneiss suggest its possible crustal correlation with the Paleoproterozoic gneiss from the Gyeonggi Metamorphic Complex in Korean peninsula.