

New age constraints and tectonic significance of the early Miocene sediments in the Hidaka Belt around Tomuraushi area, central Hokkaido, Japan

*Futoshi Nanayama^{1,2}, Mahito Watanabe¹, Toru Yamasaki¹, Hideki Iwano³, Tohru Danhara³, Takafumi Hirata⁴

1. Geological Survey of Japan, AIST, 2. CWMD, Kumamoto University, 3. Kyoto Fission-Track Co. Ltd, 4. The University of Tokyo

In the Hidaka Supergroup of the Tomuraushi region, there was known alternated beds of sandstone and mudstone named the Chikapupetsu Formation, which has a slightly unconsolidation from the surrounding strata. In this study, the depositional age of the Chikapupetsu Formation was constrained by two methods. Two zircon U-Pb ages of 22.5 ± 0.7 Ma and 19.5 ± 0.1 Ma were obtained for the maximum depositional age of the formation based on the minimum age of detrital zircon grains from turbiditic sandstone and acidic tuff by the LA-ICP-MS method. In addition, presence of diatom fossils in the formation indicates an early Miocene age for the depositional age of the formation. Because the depositional age of the Hidaka Supergroup has been considered as the Paleocene to early Eocene, the Chikapupetsu Formation should be excluded from the Hidaka Supergroup. Instead it can be correlated with the upper members of the Tsubetsu and Kawakami groups on the basis of their depositional age. We already reported late Oligocene Tatsuushi and Erimo formations in the Hidaka Belt, which has been active as a right-lateral strike-slip fault since the late Oligocene. The Chikapupetsu Formation is considered to be a marine deposit formed between the Kamishiyubetsu Formation on middle Miocene and the Tatsuushi and Erimo formations on late Oligocene along with the activity of the Kamishiyubetsu tectonic zone.

This work was supported by JSPS KAKENHI Grant Number JP19K04025.

Keywords: Depositional age, Zircon U-Pb age, LA-ICP-MS, Chikapupetsu Formation, Hidaka Belt, Early Miocene