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U-Pb isotopic dating of Devonian radiolarian-bearing Yoshiki Formation in Japan

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Post-Carboniferous, global, radiolarian biostratigraphy is based on numerous studies, and radiolaria is currently recognized as an important tool for revealing Earth's history. That said, much work remains to be done on the biostratigraphy of pre-Devonian radiolarians.

In order to test the ages of Devonian radiolarian biostratigraphic zones, we did radiometric dating of magmatic zircons within the Devonian radiolarian-bearing Yoshiki Formation, Takayama city, Japan. The Yoshiki Formation is mainly composed of alternating beds of tuffaceous sandstone, tuffaceous mudstone, and felsic tuff. The tuffaceous mudstone and tuff yield very well-preserved radiolarian fossils.

We collected well-preserved radiolarians and zircon grains from 21 tuffaceous mudstones and 30 tuff horizons of the Yoshiki Formation. The following species were identified: *Zadrappolus* (?) *nudus*, *Zadrappolus* *lunaris*, *Oriundogutta* (?) *varisoina*, *Futobari* *solidus*, *Oriundogutta* (?) *kingi*, *Futobari* *morishitai*, *Zadrappolus* *tenuis* and *Zadrappolus* *yoshikiens*. These radiolarians assigned to the *Zadrappolus tenuis-Futobari solidus* Assemblage (KURIHARA 2007) are considered to be Late Silurian to Early Devonian in age. The 11 zircon and 2 monazite grains obtained from the same stratigraphic levels with the radiolarians yielded U-Pb SHRIMP and CHIME ages ranging from Paleozoic to Mesozoic up to 180 Ma. We will discuss the exact age of the *Zadrappolus tenuis-Futobari solidus* Assemblage from the Yoshiki Formation in Japan using U-Pb isotopic dating in the presentation.

References

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