

A Quaternary $\delta^{88/86}\text{Sr}$ record from planktonic foraminifera in equatorial Pacific sediment of West Caroline Basin

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The combination of stable ($\delta^{88}\text{Sr}$) and radiogenic ($^{87}\text{Sr}/^{86}\text{Sr}$) strontium isotope ratio is a new tool to identify differences in element sources and chemical reaction histories [1, 2, 3]. We report strontium stable isotopic compositions in subsurface-dwelling planktonic foraminifera *Globorotalia tumida* picked from a Quaternary sediment core recovered from a site in West Caroline Basin (MR1402-PC01; 6.3°N, 138.6°E), western equatorial Pacific, by a piston core sampler. The radiogenic Sr isotope ratios ($^{87}\text{Sr}/^{86}\text{Sr}$) followed a general increasing trend of the Quaternary seawater. Double spike-thermal ionization mass spectrometry (DS-TIMS) measurements of *G. tumida* show no glacial-inter glacial trend. On the time scale less than 10^5 years, $\delta^{88/86}\text{Sr}$ is unlikely influenced by glacially driven increases in chemical weathering and carbonate accumulation rates. The average $\delta^{88/86}\text{Sr}$ values of *G. tumida* for 0-1.0 Ma showed a 0.012‰ lower than for 1.0-2.9 Ma. The difference between pre and post 1 Ma is accounted for by enhanced rates of continental silicate and carbonate inputs indicating the possible influence of the onset of Northern Hemisphere glaciation at around middle Pleistocene transition.

[1] Krabbenhöft et al. (2010) *Geochim. Cosmochim. Acta* **74**, 4097–4109. [2] Vollstaedt et al. (2014) *Geochim. Cosmochim. Acta* **128**, 249–265. [3] Pearce et al. (2003) *Geochim. Cosmochim. Acta* **157**, 125–146.