The Early Aptian Oceanic Anoxic Event 1a in western Iran (Garau Formation, Zagros Basin) – evidence from calcareous nannofossils

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The Garau Formation (Zagros Basin, west Iran), which was deposited under pelagic conditions, consists of alternations of black shales, limestones, marlstones and radiolarian rich layers. The lithology is very similar to other hemipelagic – pelagic successions of late Early Aptian age in the Tethys. In order to obtain data suitable for a paleooceanographic interpretation, calcareous nannofossils have been studied with respect to their biostratigraphy and paleoecology from the Early Aptian interval of the Garau Formation.

The studied interval is spanning calcareous nannofossil zones NC6 and NC7 following ROTH (1978). Nannoconid abundance is decreasing from the middle part of NC6, the lowest abundances of nannoconids are recorded from the uppermost part of NC6. The interval between the first occurrence (FO) of *Hayesites irregularis* and the FO of *Eprolithus floralis* is considered to reflect the nannoconid crisis recorded worldwide (ERBA, 2004). An increase in abundance of *Micrantholithus* spp. is recorded from the lower part of the nannoconid crisis. *Micrantholithus* spp. is mainly thought to have been associated with low surface water salinity conditions (TREMOLADA et al., 2009), enhanced nutrient contents (STREET & BOWN, 2000) and warm waters. High abundances of this group can be interpreted as a result of higher biogeochemical weathering and increased runoff under warm, humid conditions. Simultaneously with the nannoconid crisis, a decrease in calcium carbonate content is recorded. Following the nannoconid crisis, an increase in the abundance of nannoconids (especially of wide and intermediate canal forms) has been observed, though nannoconids do not reach pre-crisis values. According to these data, the OAE 1a can be very well constrained in the Early Aptian of the Garau Formation in the Zagros Basin (west of Iran).

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