

# Size and morphological changes in *Coccolithus pelagicus* across the Danian and their link to environmental recovery from the K/Pg mass extinction in the SE Tethys, Israel

## Sara Marconato

Ben-Gurion University of the Negev, Beer-Sheva, 84105, Israel; saramarc@post.bgu.ac.il

## Nicolas Thibault

University of Copenhagen, IGN, Copenhagen, DK-1350, Denmark; nt@ign.ku.dk

## Sigal Abramovich

Ben-Gurion University of the Negev, Beer-Sheva, 84105, Israel; sigalabr@bgu.ac.il

## Sarit Ashckenazi-Polivoda

Dead Sea and Arava Science Center, Masada National Park, Mount Masada, 86910, Israel; sarit@adssc.org

## Yoav Oved Rosenberg

Geological Survey of Israel, Jerusalem, 9692100, Israel; yoavr@gsi.gov.il

<https://doi.org/10.58998/jnr3257>

*Coccolithus pelagicus* has been the object of numerous biometric studies of Recent and Neogene nannoplankton assemblages. However, so far, despite several biometric studies pointing at a significant increase in size of emergent Danian lineages in the early Paleogene, there has not been any studies assessing morphological changes in *C. pelagicus* during its early evolutionary history. To perform this study, 50 specimens per sample of *C. pelagicus* were counted and measured with the image software ImageJ across the first 26 m of the Danian of the Hor Hahar section, Zin Basin, (30°49'46.96"N, 35°3'22.40"E, 160 m above sea level). For the first time, we report a distinction between distinctly circular and broadly elliptical lineages. Moreover, our preliminary results suggest that not less than six morphotypes co-existed in the Danian of Hor Hahar with a dominant elliptical morphotype ranging between 5 and 10  $\mu\text{m}$ . We also observed a constant increase in the length and width of the whole lineage through the Danian, as was previously documented in the tropical Atlantic Ocean and which probably indicates the progressive establishment of more stable paleoenvironmental conditions.