

Calcareous nannofossils from the Poggio le Guaine core (Umbria-Marche Basin, central Italy): Biostratigraphy and discussion of Aptian–Albian bioevents

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<https://doi.org/10.58998/jnr3245>

Calcareous nannofossil biostratigraphy of the Aptian–Albian interval has been developed and applied in recent decades. However, the shortage of complete and continuous outcropping marine sections, or even marine subsurface sections, has presented a significant challenge for stratigraphic studies of this interval. Taxonomic ambiguities, diachroneity, and reworking are additional challenges for calcareous nannofossil biostratigraphic studies of this interval. In contrast, the Poggio le Guaine (PLG) section of the Umbria-Marche Basin (central Italy) stands out by presenting a complete pelagic to hemipelagic marine sedimentary succession of the Aptian–Albian interval.

In this study, we (1) provide a detailed calcareous nannofossil biostratigraphy, (2) calibrate the results with previously published work, and (3) discuss some important bioevents of the Aptian–Albian interval that we identified in the PLG core. The following biozones of the calcareous nannofossil reference zonation for the Aptian–Albian interval were recognized: *Chiastozygus litterarius* Zone (NC6), *Rhagodiscus angustus* Zone (NC7), *Prediscosphaera columnata* Zone (NC8* and NC8), *Axopodorhabdus albianus* Zone (NC9), and *Eiffellithus turriseiffelii* Zone (NC10). The PLG core encompasses the chronostratigraphic interval from the Barremian/Aptian through the Albian/Cenomanian boundaries. Finally, we also recognized some important calcareous nannofossil bioevents within this interval: the first occurrence (FO) of *Hayesites irregularis*, FO of *Hayesites albiensis*, last occurrence (LO) of *Conusphaera rothii*, LO of *Micrantholithus hoschulzi*/*Micrantholithus obtusus*, FO of *Rhagodiscus achlyostaurion*, FO of *Prediscosphaera columnata*, FO of *Tranolithus orionatus*, and LO of *Assipetra* spp.