

Dinoflagellate cysts and Palynofacies across the Cretaceous/Paleogene boundary at the neritic Waidach section (Eastern Alps, Austria)

Omar Mohamed^{1,2}, Werner E. Piller¹, Hans Egger³

¹ University of Graz, Institute of Earth Sciences (Geology and Palaeontology),
Heinrichstrasse 26, 8010 Graz, Austria; e-mail: omaraosman@yahoo.com; werner.piller@uni-graz.at

² El-Minia University, Faculty of Science, Geology Department, El-Minia, Egypt.

³ Geological Survey of Austria, Neulinggasse 38, A-1030 Vienna, Austria; e-mail: hans.egger@geologie.ac.at

In the area north of Salzburg (Austria), the Cretaceous/Paleogene boundary (K/Pg boundary) has been recognized in the neritic Waidach section (Helvetic thrust unit). The outcrop comprises calcareous nannoplankton Zone CC26 (*Nephrolithus frequens* Zone) of latest Cretaceous age (Gerhartsreit Formation) and part of the lowermost Paleocene Zone NP1 (*Markalius inversus* Zone) of the Olching Formation. The stratigraphic record across the K/Pg boundary is incomplete due to a minor fault. Well preserved and high diverse dinoflagellate assemblages of 36 samples are composed of a total of 163 dinocyst species and subspecies belonging to 62 genera. Dinoflagellate cysts do not show accelerated rates of extinction at the K/Pg boundary. The composition of the dinoflagellate assemblages, however, change drastically from *Areoligera* dominated assemblages in the Upper Maastrichtian to *Hystrichosphaeridium* dominated assemblages in the Lower Danian. Two *Manumiella* spikes were recorded in the Upper Maastrichtian (~1 m and 10 m below the K/Pg boundary) and interpreted to reflect slight coolings of oceanic surface waters. In the lower Danian, *Carpatella cornuta*, *Senoniasphaera inornata* and *Damassadinium californicum* have their first occurrences. An acme of *Spongodinium delitiense* (1 m above the K/Pg-boundary) indicates a decrease in paleoproductivity whilst the peridinioid/gonyaulacoid (P/G) ratio of all other samples suggests high paleoproductivity throughout the section. Moreover, this acme is interpreted as a transient cooling event of oceanic surface waters. Two palynofacies assemblages were distinguished indicating shelf to basin transitions and dysoxic to anoxic conditions.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte der Geologischen Bundesanstalt](#)

Jahr/Year: 2011

Band/Volume: [85](#)

Autor(en)/Author(s): Mohammed Omar, Piller Werner E., Egger Hans

Artikel/Article: [Dinoflagellate cysts and Palynofacies across the Cretaceous/Paleogene boundary at the neritic Waidach section \(Eastern Alps, Austria\) 115](#)