

Integrated high resolution stratigraphy of the Gurpi Formation (Late Cretaceous) in the Zagros Basin (Iran): Calcareous nannofossils, planktonic foraminifers, carbon and oxygen stable isotopes

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The Gurpi Formation (Fm.) consists of fossiliferous, alternating marls and marly limestones, spanning the Late Cretaceous to Paleocene in the NW to central part of the Zagros Basin. This formation was deposited in deep shelf to basin margin settings. A preliminary study of the calcareous nannofossil biostratigraphy and carbon and oxygen stable isotopes was already presented by Razmjooei et al. (2014) on the Shahneshin section (Shahneshin anticline) which corresponds to open marine, upper bathyal depositional environments. However this study was at a relatively low resolution and the section was not presented with a detailed sedimentology. The ca. 350 m long Gurpi Fm. of the Shahneshin section has been re-logged in detail in 2016 and a new high resolution study has been carried out, spanning the middle Coniacian to early Danian. Here, we present the result of this new investigation that integrates the biostratigraphy of calcareous nannofossils (based on 165 samples), that of planktonic foraminifers (62 samples) and carbon and oxygen stable isotopes (353 samples) along with a comprehensive panorama and detailed log of the section. A large number of carbon isotope excursions previously defined by Jarvis et al. (2006) and Thibault et al. (2016) have been identified in the section and can be correlated to the Gubbio record, which is the standard reference for the southwestern Tethys. Our new high resolution study constitutes a new reference for Late Cretaceous sediments of the eastern Tethys.