

Enhanced biotic recovery through KPB transition: Evidence from the Mahadeo-Cherrapunji Section, Meghalaya, India

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Previous studies on Mahadeo-Cherrapunji section (MCR) revealed Cretaceous/Palaeogene boundary (KPB) in the shelf sediments. But, major biotic changes at KPB (ca. ~ 66 Ma) remain inconclusive. Moreover, Deccan volcanism induced environmental stress led to mass extinction, played major role in the southern hemisphere. In this context, Organic Matter (OM) trapped within the Maastrichtian and Danian shelf sediments attains significance and necessitated detailed study. Present findings were compared to continuous, shallow-marine Um-Sohryngkew river (USR) KPB section, marked with abundant short chain *n*-alkanes (SCA) and *n*-fatty acids. These biomarkers originated from autochthonous marine algal remains, correlate well with the GSSP. High-resolution *n*-alkane and *n*-fatty acid records across KPB of the MCR section is presented in this paper. Notable ~ 6-fold rise in the SCA is marked within the thin KPB clayey layer that lies between CF1 and P0 biozones. The even carbon numbered SCA (*n*-C₁₆ or *n*-C₁₈) predominance is attributed to thermal degradation and partial combustion of non-woody biomass. Although, the dominance of C₁₇ *n*-alkane and hopanes is suggestive of algae, fungi and bacteria as a biotic source of the organic matter (SOM). A sudden rise in the SCA between CF1 and P0 biozones is coinciding with the major foraminiferal break. But, in USR section, similar anomaly was recorded within the lower CF3 biozone preceded by a major foraminiferal break. Extra-basinal tectono-thermal effects, frequent local sea-level changes and greenhouse effects of volcanism were accountable for sudden rise in the temperature causative for biotic stress, leading to biotic turnover in shelf waters.