Title:	Characterization of sedimentary organic matter and depositional processes in the Mandovi estuary, western India: An integrated lipid biomarker, sedimentological and stable isotope approach
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Keywords:	Biomarker Estuary Isotope n-Alkane Organic matter
Issue Date:	2021
Publisher:	Elsevier
Citation:	Applied Geochemistry, 131, 105041.
Abstract:	A multiproxy study involving bulk (TOC, δ13Corg, grain size) and molecular (n-alkane biomarkers) analyses is used to investigate surface sediments from the Mandovi estuary in Goa, west coast of India to determine the origin, distribution and composition of organic matter (OM). The δ13Corg and n-alkane based indices (terrigenous/aquatic ratio (TAR) and Paq) indicate higher terrigenous OM accumulation in the river dominated upper reaches of the estuary. The presence of unresolved complex mixture (UCM), n-alkane indices (carbon preference index (CPI), average chain length (ACL), natural n-alkanes ratio (NAR)) and diagnostic isoprenoid ratios (pristane/phytane (Pr/Ph), Pr/n-C17, Ph/n-C18) helped to characterise intense human activity in the lower estuary. This conclusion is further supported by relatively high concentration of hopanes indicating petroleum contamination in the lower estuary. Furthermore, the study also highlights the important role of grain size on the distribution of OM along coastal margins, and provides detailed understanding of the variations in OM distribution/accumulation forced by natural processes and anthropogenic activities. The results of this study have significant implications for identifying natural and anthropogenic OM sources in estuarine systems especially in the context of increasing anthropogenic activities.
Description:	Only IISER Mohali authors are available in the record.
URI:	https://doi.org/10.1016/j.apgeochem.2021.105041 (https://doi.org/10.1016/j.apgeochem.2021.105041) http://hdl.handle.net/123456789/4361 (http://hdl.handle.net/123456789/4361)
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