



Lipid Biomarkers: The Recalcitrant Biomolecules in Geosphere

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Message from the Guest Editors

Dear Colleagues,

Lipid biomarkers preserved in sedimentary records are organic fossil molecules derived from once-living organisms. Owing to their chemical stability compared to other biomolecules (e.g., protein and DNA), lipid biomarkers are often utilized to investigate the coevolution of life and Earth in deep time. Since the first identification of porphyrins in petroleum samples over eighty years ago, continuously improved sampling and analytical techniques have facilitated the discovery of numerous lipid biomarker compounds and promoted their application in various disciplines of geosciences. However, emerging and long-lasting issues such as undetermined biological sources and physiology of specific lipids have raised concerns about the fidelity of certain lipid biomarkers. This Special Issue invites research and review papers on the following topics: critical discussion and reappraisal of popularly applied biomarker proxies, the study of novel lipid biomarker compounds, and newly developed or improved analytical protocols.





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Message from the Editor-in-Chief

Understanding the Earth's origin and its bio-geological evolution, the multiple implications of the geosciences (as a coherent set of interconnected disciplines), and the sociocultural and ethical interdisciplinary approaches, will be crucial for a better understanding of Nature, and also for undertaking scientifically based political decisions.

We are committed to drive *Geosciences* to a position in which it is recognized for its high-quality, cutting-edge research and scientific influence, and strongly encourage and invite your participation and manuscripts.

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