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FTIR-derived ratios on sporopollenin

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To reconstruct past vegetation, different biogeochemical proxies may be used. Measurements, especially stable isotopic ones, are performed on molecules chemically extracted from fossil sediments. But important delta13C shifts had been observed on organic carbon following these different chemical treatments. To compare the results obtained on organic material with different diagenetic histories, it is necessary to know the respective effects on the macromolecular structure of: (1) chemical treatments used to extract sporopollenin off the sediment (2) diagenetic processes. We show results obtained by FTIR on a plant fossil remain: sporopollenin (exine part of pollen grains). Changes in abundances of aliphatic and carbonyl/ carboxyl groups are quantified to define ratios which reflected the changes of the macromolecular structure of the sporopollenin.