

# The Nature of Oxygen in Sporopollenin from the Pollen of *Typha angustifolia* L.

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Sporopollenin, *Typha angustifolia* L.

Native and peracetylated sporopollenin from the pollen of *Typha angustifolia* L. was investigated using several spectroscopic methods, inducing Fourier transform infrared spectroscopy (FTIR), solid-state <sup>13</sup>C-nuclear magnetic resonance spectroscopy (<sup>13</sup>C-NMR) and X-ray photoelectron spectrometry (XPS). Interpretation of the experimental data shows that the greater part of oxygen found in sporopollenin originates from hydroxyl groups and must be derived from aliphatics and not from aromatics. This result indicates that not only aromatics and long unbranched aliphatics but also poly-hydroxyl aliphatic components are involved in the complex structure of the polymer. Furthermore, it is most probable that the monomers of the sporopollenin skeleton are linked by ether- and not by ester-linkage.

Two possible approaches are suggested for the characterisation of sporopollenin structure.