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Heme cleavage with remarkable ease: paramagnetic intermediates formed by aerobic oxidation of a meso-amino-substituted iron porphyrin.

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Streszczenie

Hemes must be oxidatively stable to carry out their functions as biological oxidants, but introduction of a single amino group at a meso position of octaethylheme renders it extremely sensitive to ring opening by dioxygen. Exposure of a red pyridine (py) solution of diamagnetic $(py)_2Fe^{II}(H_2N\text{-}OEP)$ (**1**) (H_2N-OEP is the dianion of meso-amino-octaethylporphyrin) to air results in the immediate formation of a green intermediate which is subsequently converted into a second species that has been crystallized and characterized by X-ray diffraction. This process is distinct from coupled oxidation, a model for biological heme cleavage, because it does not require a sacrificial reducing agent to initiate the process.

Słowa kluczowe

Atmospheric chemistry, Bioinorganic chemistry, Carbene compounds, Iron, Pyrroles

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