

A flexible porphyrin-annulene hybrid : a nonporphyrin conformation for *meso*-tetraaryldivacataporphyrin.

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Streszczenie

An annulene–porphyrin hybrid, the diaza-deficient porphyrin 5,10,15,20-tetraaryl-21,23-divacataporphyrin, has been synthesized by an extrusion of tellurium atom(s) from 5,10,15,20-tetraaryl-21,23-ditelluraporphyrin under treatment with HCl. In addition, a monoaza-deficient 5,10,15,20-tetraaryl-21-tellura-23-vacataporphyrin was formed in the same reaction. The two new members of the vacataporphyrin family were characterized by X-ray crystallography, as well as UV/Vis and NMR spectroscopy. These aromatic molecules preserve the fundamental structural and spectroscopic features of the parent tetraarylporphyrin. The X-ray crystal structures of 21,23-divacataporphyrin and 21-tellura-23-vacataporphyrin show typical porphyrin patterns. The molecules are not strictly planar and show distortion of the annulene moieties. The N22...N24 distances (5.23 and 5.09 Å) are considerably longer than in regular porphyrins. For 21,23-divacataporphyrin, variable-temperature ¹H NMR spectroscopy data allowed the identification of divacataporphyrin stereoisomers differentiated by the geometry of the butadiene bridges. The forms remain in thermodynamic equilibrium.

Słowa kluczowe

annulenes, aromaticity, isomerization, porphyrinoids, tellurium

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