

## Nuclear magnetic resonance studies on the formation of azaferrocene complexes of iron(III) porphyrins.

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The titration of high-spin triflate (OEP)FeIII(OTf), (TPP)FeIII(OTf), and (TMP)FeIII(OTf) complexes with azaferrocene ( $\eta^5$ -C<sub>4</sub>H<sub>4</sub>N)( $\eta^5$ -C<sub>5</sub>H<sub>5</sub>)FeII (AF) in chloroform solutions has been monitored by <sup>1</sup>H NMR spectroscopy. The formation of high-spin mono-ligated PFeIII(AF) complexes has been observed in the early titration stages. The final reaction products are low-spin [PFeIII(AF)<sub>2</sub>]<sup>+</sup> complexes. The <sup>1</sup>H NMR results showed that dynamic equilibria between mono- and bis-ligated species were present. The rotation of AF around the N-FeIII(P) bond is fast on the NMR scale. The electronic structure and the distribution of the spin density of the bis-ligated PFeIII(AF)<sub>2</sub> complexes are discussed on the basis of isotropic shift analysis.

### Strona internetowa wydawcy

<https://www.rsc.org/>