

Iron(III) mesoporphyrin IX and iron(III) deuteroporphyrin IX bind to the *Porphyromonas gingivalis* HmuY hemophore.

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Streszczenie

Porphyromonas gingivalis acquires heme through an outer-membrane heme transporter HmuR and heme-binding hemophore-like lipoprotein HmuY. Here, we compare binding of iron(III) mesoporphyrin IX (mesoheme) and iron(III) deuteroporphyrin IX (deuterochrome) to HmuY with that of iron(III) protoporphyrin IX (protochrome) and protoporphyrin IX (PPIX) using spectroscopic methods. In contrast to PPIX, mesoheme and deuterochrome enter the HmuY heme cavity and are coordinated by His134 and His166 residues in a fully analogous way to protochrome binding. However, in the case of deuterochrome two forms of HmuY–iron porphyrin complex were observed differing by a 180° rotation of porphyrin about the α - γ -meso-carbon axis. Since the use of porphyrins either as active photosensitizers or in combination with antibiotics may have therapeutic value for controlling bacterial growth *in vivo*, it is important to compare the binding of heme derivatives to HmuY.

Słowa kluczowe

Porphyromonas gingivalis, HmuY, Heme-binding protein, Iron, metalloporphyrin

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