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Functionalization of 10-azacorroles: nitration, bromination and acylation

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Streszczenie

The peripheral functionalization of 10-azacorroles has been almost unexplored compared to the flourishing development of the functionalization of corroles. Here we explored the functionalization of 10-azacorroles through the study of nitration, bromination and acylation reactions affording novel 10-azacorroles derivatives with functional groups at peripheral positions. A one-pot reaction of 10-azacorroles with isoamyl nitrite under mild reaction conditions resulted in the consecutive formation of 3-nitro-, 3,17-dinitro-azacorrole in 70-85% yield. Treatment of 10-azacorroles with 6.1 equivalents of N-bromosuccinimide (NBS) in 1,2-dichloroethane at 80 oC resulted in hexabrominated azacorroles regioselectively. Acyl chlorides react with 10-azacorroles in dichloromethane in the presence of AlCl3 at room temperature affording acylated products in moderate yields. The structures of all the products were characterized thoroughly by high-resolution mass spectrometry, NMR and UV/Vis spectroscopy together with X-ray diffraction analysis.

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