Synthesis of Oxa-aza-macrocycle Containing a Naphthalimide Unit: Potential Antioxidant Activity of Products

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Macrocycles with heteroatoms such as nitrogen (1) and oxygen (2) have wide application in many areas of science. For example in medicine, aza-macrocycles [1] are used to sequester particle emitting radioisotopes for use with monoclonal antibody in radioimmunodiagnosis and radioimmunotherapy.[2] Also, aza-macrocycles and their metal complexes have been reported to have good anti-HIV activity.[3] The coordination chemistry of macrocycles with mixed nitrogen-oxygen donors has been thoroughly investigated over recent years. However, the coordination chemistry of macrocycles in which oxygen and nitrogen donors bonded to each other, such as in **3**, is less known.[4]



In this work we intended to prepare the compound **4**, bearing a naphthalimide unit attached through a carbon chain to the oxa-aza-macrocycle. The final product **5** was obtained by cleavage of the mesitylenesulfonyl groups (Mts) followed by incorporation of a metal (Scheme 1). The antioxidant capacity of compound **5** will be evaluated in the future.



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