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Smiles Rearrangement of erythrin gives the corresponding diphenyl ether

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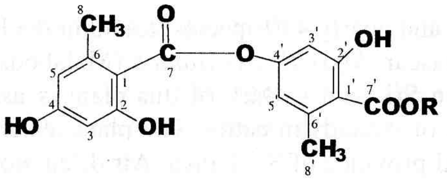
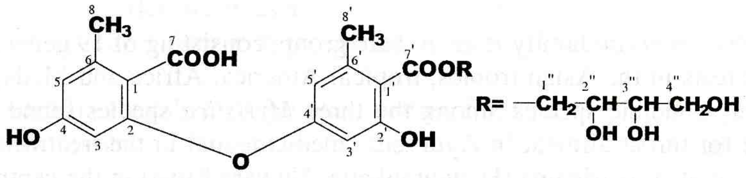
The depside erythrin (**1**) is isolated in 6.3% yield from *Rocella montageni*, a lichen growing on the trunk of coconut trees (in Kurunegela). Following the key discovery that *para* depsides such as methyl prasinate could be readily converted into the isomeric diphenyl ether through the Smiles rearrangement (an intra molecular aromatic substitution reaction) under mild conditions, plausible routes to potential metabolites such as dibenzofurans became evident. Thus, the Smiles rearrangement is a crucial transformation which sheds light on the biosynthetic inter-relationship between the common lichen polyketides, the depsides, the depsidones, the diphenyl ethers and the dibenzofurans.

Herein, we report the synthesis of the diphenyl ether (**2**) *via* the Smiles rearrangement of the isomeric erythrin (**1**) in a single step. The diphenyl ethers such as (**2**) can act as crucial intermediates in the rapid synthesis of dibenzofuran derivatives like schizopeltic and pannaric acid.

Erytrhin (**1**) was treated with K_2CO_3 in DMSO under anhydrous conditions for 3 h, acidified and extracted to ethyl acetate. The sodiumbicorbonate, extract of the reaction mixture when fractionated *via* MPLC (gradient eluent: CH_2Cl_2 to MeOH), the diphenyl ether (**2**) was separated as the major product (40% yield) The compound was fully characterized using ^{1}H, ^{13}C, COSY, HMQC , HMBC data and mass spectral data. This is the first report of Smiles rearrangement on unprotected C-4-OH containing depsides.



Erythrin (1)



Diphenyl ether (2)

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