PARTIAL SYNTHESIS OF DIBENZOFURANS

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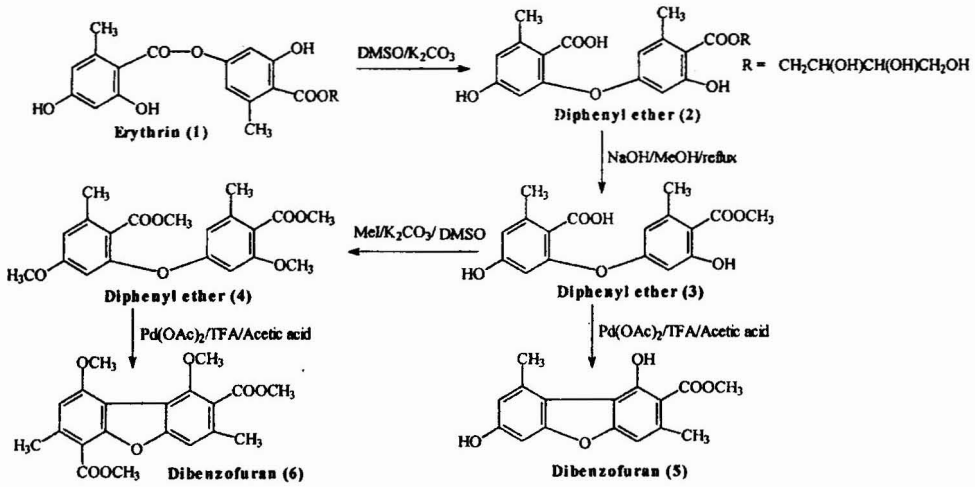
Lichens produce a large variety of metabolites, the most typical being the aromatic polyketides, the depsides, depsidones, diphenyl ethers and dibenzofurans. Although the depsides, and to some extent depsidones, are isolated in high yield, the diphenyl ethers and most dibenzofurans are relatively rare metabolites. However, the ubiquitous dibenzofuran usnic acid occurs in many lichens and has shown various biological activities such as anti-tumour, anti-mutagenic, analgesic, anti-pyretic and plant growth inhibitory activity.

In our study we have successfully converted a major depiside, erythrin (1) isolated in 6.3% yield from *Rocella montagenii* into the synthetic dibenzofurans (5) and (6) through the diphenyl ether intermediate (2). We had previously reported the synthesis of the diphenyl ether (2) *via* a Smiles rearrangement of erythrin (1)[1].

On refluxing with alkali and methanol, the erythrityl ester group of the diphenyl ether (2) was successfully hydrolyzed to yield the compound (3), which was permethylated with methyl iodide in presence of a base in DMSO to yield the compound (4). Compounds (3) and (4) were oxidatively coupled using palladium acetate to yield the corresponding dibenzofurans (5) and (6), respectively. All compounds were fully characterized using 1D and 2D NMR data and mass spectral data.



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