An Alternative Synthesis of (±)-Dehydrogriseofulvin by Enzymic Phenolic Oxidation by Homogenised Potato Peelings

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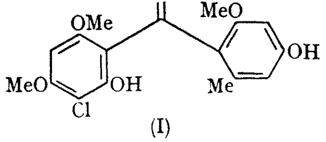
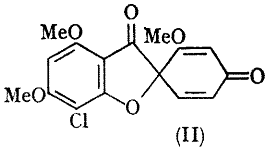
WE have reported[1] that head-to-tail coupling of 1,2,3,4-tetrahydro-7-hydroxy-1-(4-hydroxyphenethyl)-6-methoxy-2-methylisoquinoline by enzymic phenolic oxidation gives the expected promelanthioidine. Similarly, *N*-methylcoclaurine undergoes enzymic phenolic oxidation with homogenised potato peelings–hydrogen peroxide.[2] Since the formation of dehydrogriseofulvin (II), a precursor of griseofulvin, has been assumed to be by phenol oxidation of griseophenone A (I),[3] many attempts to obtain (II) *in vitro* by phenol oxidation of (I) with potassium ferricyanide[4] and horseradish–hydrogen peroxide[5] have been carried out. Here, we report an alternative conversion of (I) into (II) with homogenised potato peelings–hydrogen peroxide.

A phosphate-buffered solution (pH 7·6—7·7) of griseophenone A (I), derived from natural griseofulvin, was mixed with homogenised potato peelings in the presence of hydrogen peroxide and ethanol and set aside for 2 days at 4—8°. A further and similar quantity of homogenised potato peelings was then added. The mixture was worked up after 4 days and gave starting material (I) and (±)-dehydrogriseofulvin (II), m.p. (benzene) 288—209° [lit.,[7] m.p. 288—290°], $[\alpha]_D = 0°$, (12% yield) whose i.r. (in $CHCl_3$) and n.m.r. (in $CDCl_3$) spectra were superimposable on those of an authentic sample. The compound was optically inactive.



(I)



(II)

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