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Stereochemistry of Hydrogenation of (−)-Dehydrogriseofulvin to (+)-Griseofulvin with a Cell-Free System of *Streptomyces cinereocrocatus**

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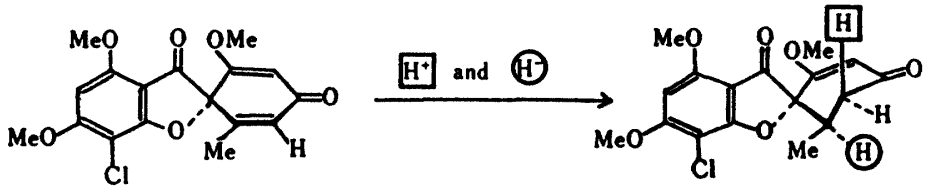
To elucidate the stereochemistry of the hydrogenation of (−)-dehydrogriseofulvin (**1**) to (+)-griseofulvin (**2**) by *streptomyces cinereocrocatus,* we have prepared from the microorganism a cell-free system which can transform **1** to **2**. The hydrogenation activity of the cell-free system increased in the presence of added reduced nicotinamide adenine dinucleotide phosphate (NADPH) (Table I). The stereochemistry of hydrogenation was determined by 400 MHz proton nuclear magnetic resonance (^{1}H-NMR) analysis of the products obtained by the enzymatic conversion of (−)-[5′-^{2}H]-dehydrogriseofulvin and also by the enzymatic conversion of **1** in medium containing deuterium oxide (Chart 1).

Table. I Effect of Cofactors on the Transformation of (−)-Dehydrogriseofulvin to (+)-Griseofulvin by Cell-free Systems of *Streptomyces cinereocrocatus*

cofactor	(+)-Griseofulvin formed (%)	(−)-Dehydrogriseofulvin recovered (%)
none	18	80
NADH (2mg/10ml)	18	78
NADPH (2mg/10ml)	64	36
NADH and NADPH (2mg each /10ml)	62	38



1 **2**

Chart 1.

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