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**Stereochemistry of Hydrogenation of (–)-Dehydrogriseofulvin
to (+)-Griseofulvin with a Cell-Free System of
*Streptomyces cinereocrocatu*s***

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To elucidate the stereochemistry of the hydrogenation of (–)-dehydrogriseofulvin (1) to (+)-griseofulvin (2) by *streptomyces cinereocrocatu*s, 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 (¹H-NMR) analysis of the products obtained by the enzymatic conversion of (–)-[5'-²H]-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 cinereocrocatu*s

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

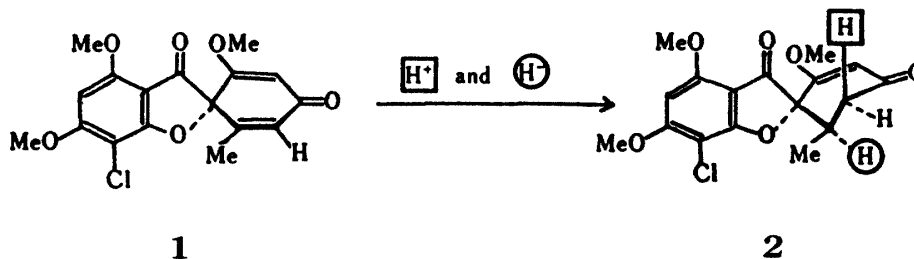


Chart 1.

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