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A New *p*-Terphenyl Derivative from Basidiomycetes *Boletopsis grisea*

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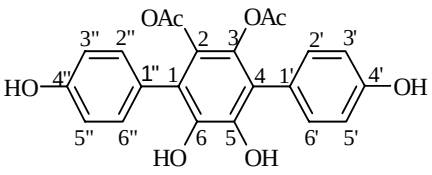
Abstract: A new *p*-terphenyl derivative **1** was isolated from the fruiting bodies of *Boletopsis grisea*. Its structure was established as 2, 3-diacetoxy-4', 4", 5, 6-tetrahydroxy-*p*-terphenyl by spectroscopic and chemical means.

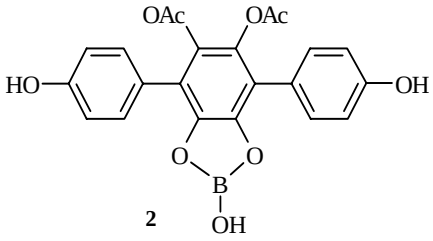
Keywords: *Boletopsis grisea*, *p*-terphenyl derivative, Basidiomycetes.

The fungus *Boletopsis grisea* belongs to Thelephoraceae[1]. It has been reported that a series of cycloleucomelone-leucoacetates obtained from *B. leucomelas* displayed potent inhibitory activity on 5-lipoxygenase[2]. As part of a search for bioactive metablites of the higher fungi in Yunnan Province, the chemical constituents of *B. grisea* collected at Zhongdian of Yunnan were investigated. This report deals with the structure elucidation of a new *p*-terphenyl derivative isolated from the EtOAc extract of the fruiting bodies of *B. grisea*.

Figure 1 The structure of **1**, **2**



1



2

Compound **1,** brown powder, mp 229-230°C. Its IR (KBr) spectrum showed absorptions of benzenoid bands (1612, 1526 cm^{-1}), hydroxy (3403 cm^{-1}) and acetate (1775, 1747 cm^{-1}) groups. The molecular formula was established as $C_{22}H_{18}O_8$ by HREIMS at *m/z* 410.1002 [M^+] (Calcd. 410.1001). Its ^1H NMR gives signals at δ 7.16, 6.83 ppm (4H each, d, J = 8.3Hz) to form an AA'BB' system arising from the protons of a 1,4-disubstituted benzene ring. Nine signals in the ^{13}C NMR (DEPT) spectrum of **1** were recognized as two acetoxy, eight aromatic methines, ten aromatic quaternary carbons including six oxygen-bearing carbons . These data suggested that **1** is a highly

symmetric *p*-terphenyl derivative with two acetoxy groups and four hydroxyls. To determine the location of the acetoxy groups and hydroxyl groups in the central ring, **1** was treated with boric acid and the reaction mixture was examined by negative ion FABMS. An ion was observed at *m/z* 434 ($[M-H]^+$), indicating the formation of **2**, which confirmed the existence of the vicinal hydroxyls in the central ring. Therefore the structure of the compound was determined as **1**. By comparison with those of related compounds, two signals at δ 7.16 and 6.83 ppm in ^1H NMR were assigned to the protons at 2', 2", 6' 6", and 3', 3", 5', 5", δ 158.1 ppm in ^{13}C NMR is due to the hydroxyl-bearing carbons in the outer rings; assignment of δ 142.5 ppm is hydroxyl-bearing carbons and δ 134.9 is acetoxy-bearing ones in the central ring[5,4].

Table 1 ^1H and ^{13}C NMR data for **1** in CD_3OD (δ in ppm, J in Hz)

Proton	δ_H	Carbon	δ_C
$COCH_3$	1.87(6H,s)	$COCH_3 \times 2$	170.7(C)
		1,4	123.9(C)
		2,3	134.9(C)
		5,6	142.5(C)
		1',1"	125.5(C)
2',2", 6',6"	7.16(4H,d,J=8.3)	4',4"	158.1(C)
3',3",5',5"	6.83(4H,d,J=8.3)	2',2",6',6"	132.6(CH)
		3',3",5',5"	116.1(CH)
		$COCH_3 \times 2$	20.1 (CH_3)

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