中国産薬用茸*Phellinus ribis* の生理活性成分の探索研究

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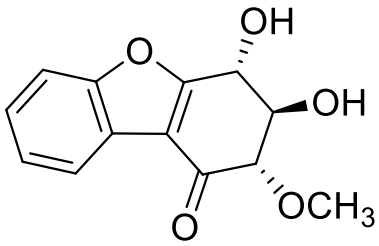
Phellinus ribis

写真：Genere Phellinus より

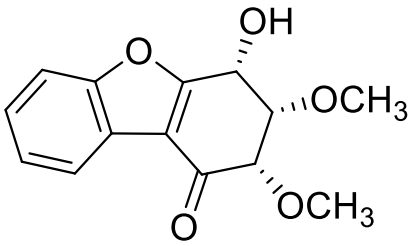
科名　　タバコウロコタケ科
分布　　中国、日本、韓国などの東アジア
用途　　免疫増強、胃腸癌の治療

Compounds from the Fruiting Bodies of *Phellinus ribis*

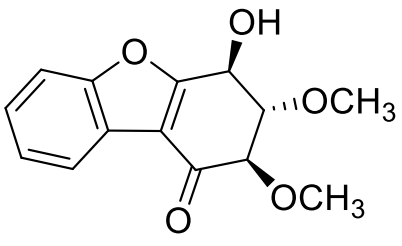
NEW



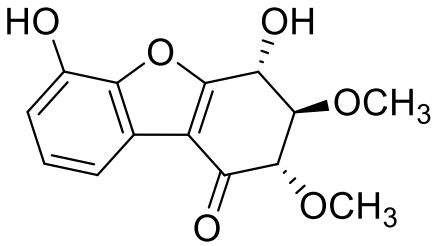
ribisin A (**1**)



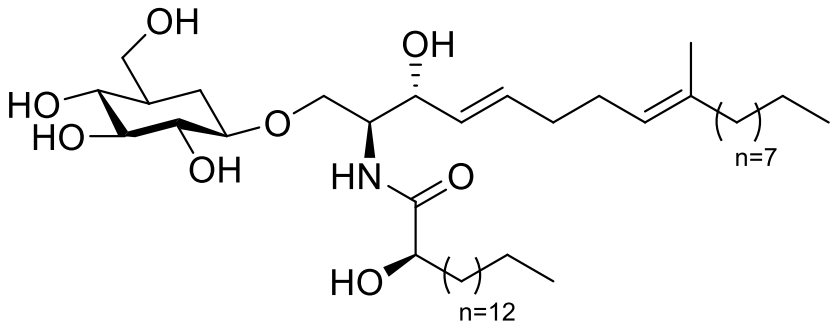
ribisin B (**2**)



ribisin C (**3**)



ribisin D (**4**)



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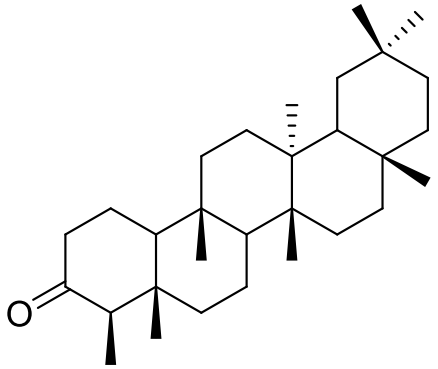

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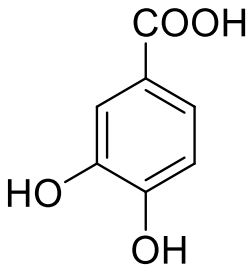

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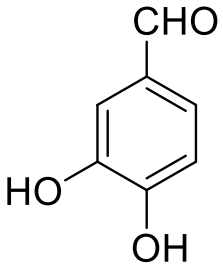

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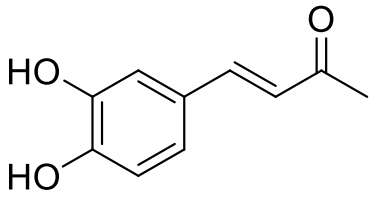
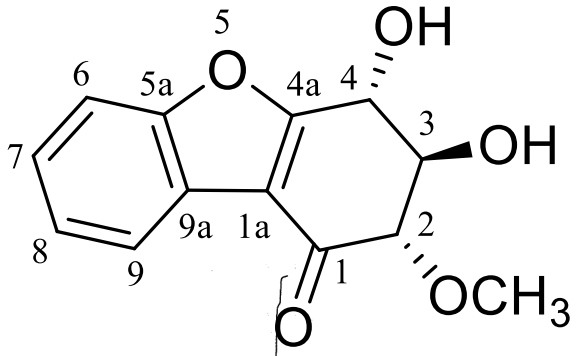
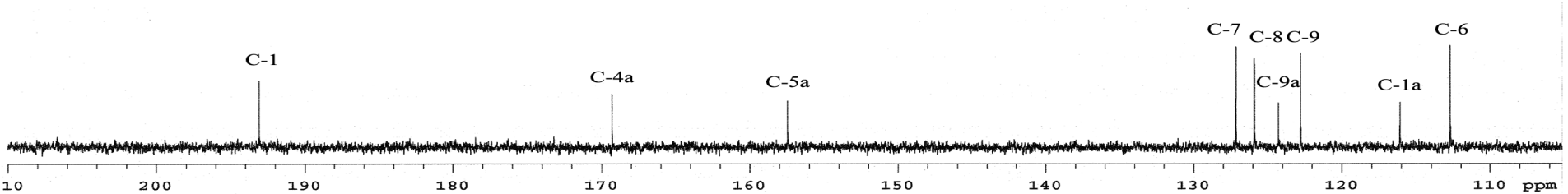


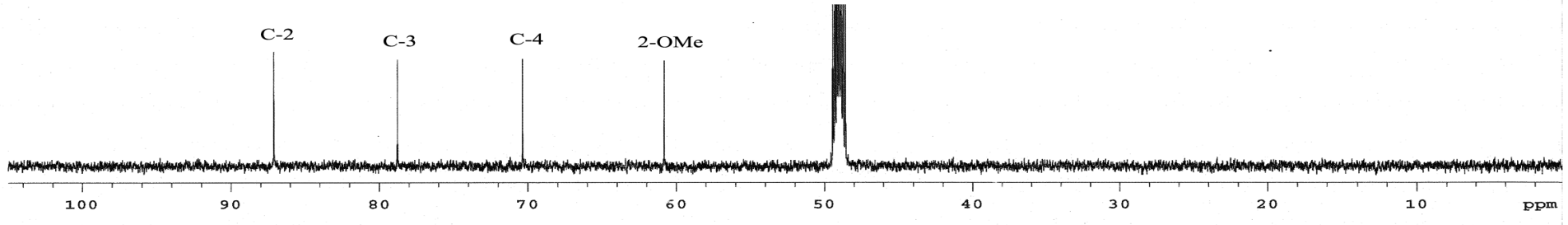
9

^{1}H and ^{13}C NMR spectra of ribisin A (1)

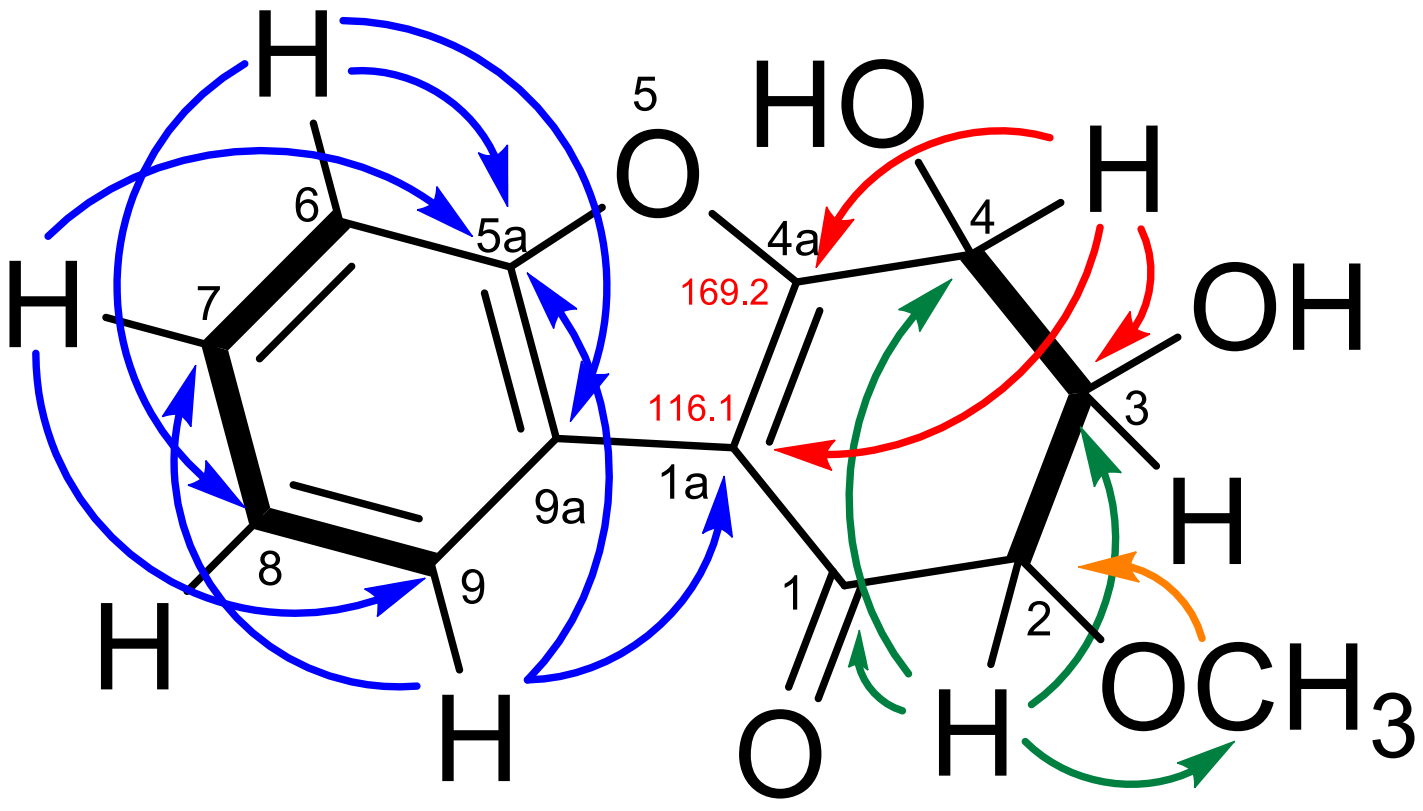


$[\alpha]_D^{20}$:-21.9°(*c* 1.0, MeOH)
IR (cm^{-1}): 3401 (OH), 1684 (C=O)
HR-MS (EI): observed 248.0705,
calcd 248.0675 for $C_{13}H_{12}O_5$





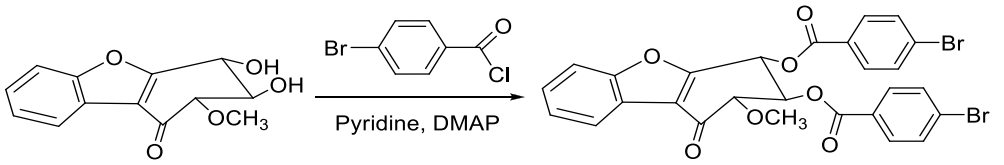
HMBC correlation of 1



^{1}H-^{1}H COSY

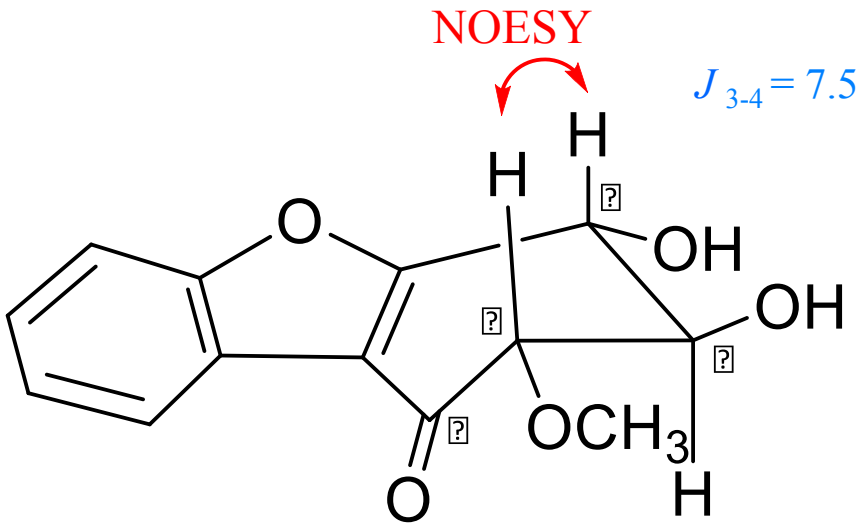
HMBC

Relative and Absolute Configuration of 1



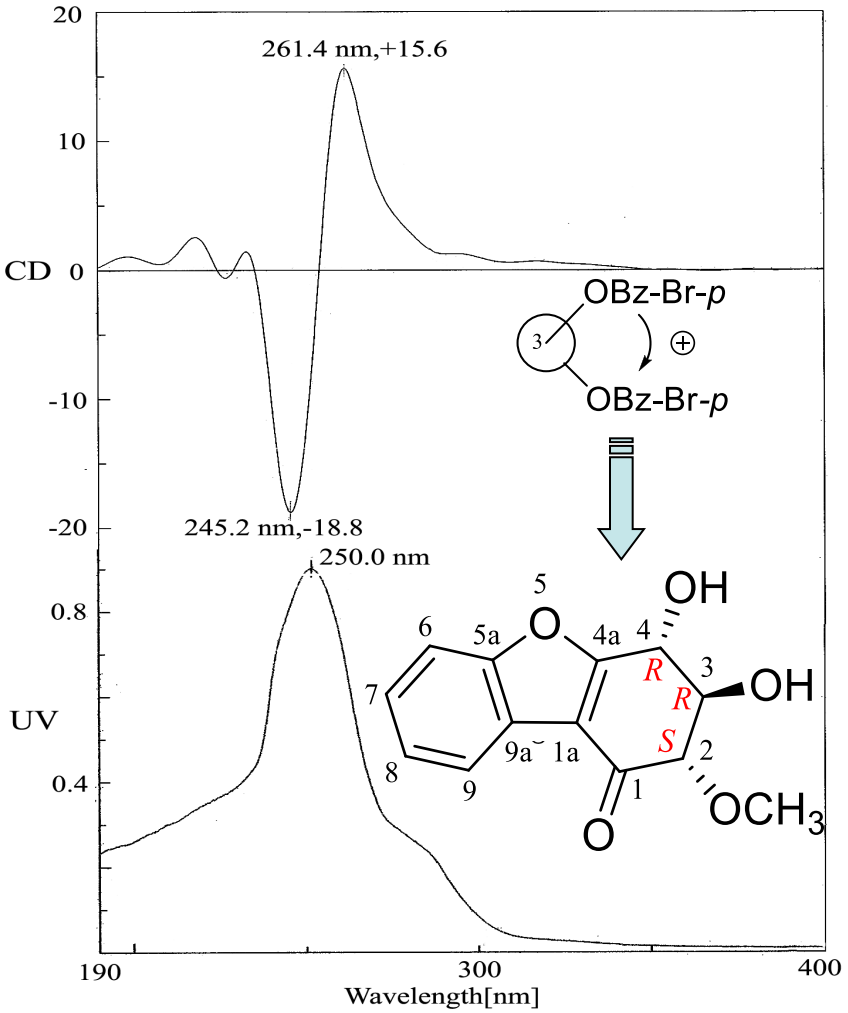
1

p-bromobenzoyl ester

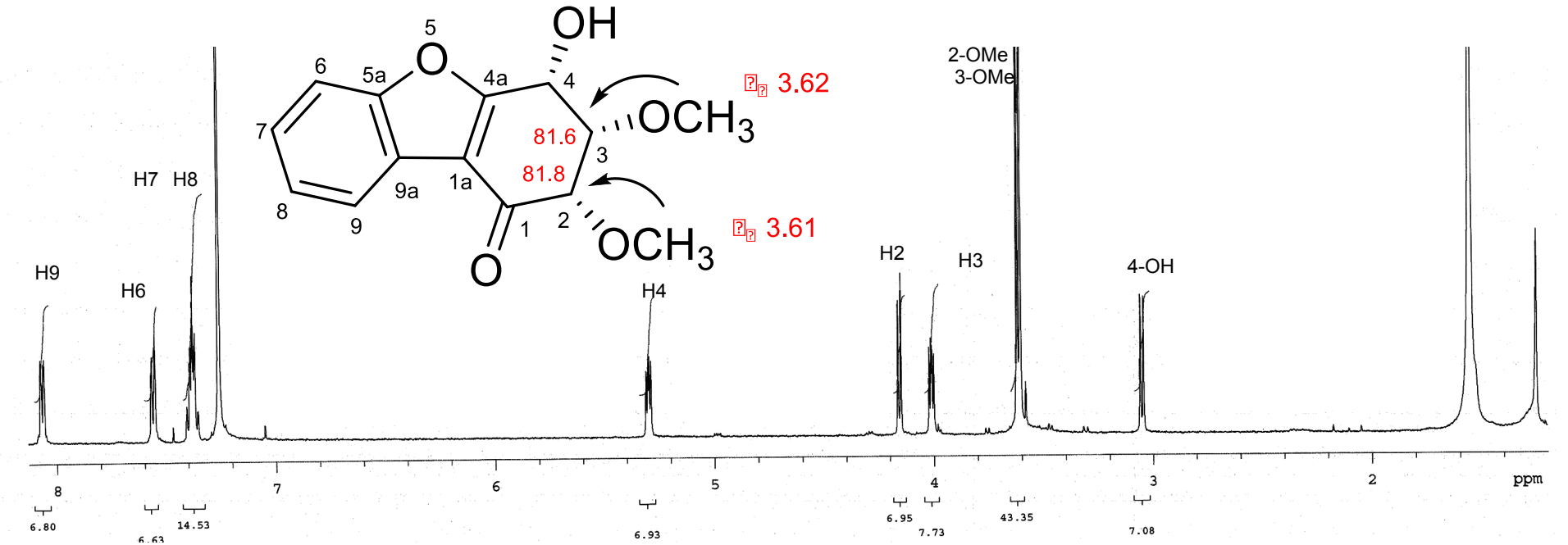


$J_{3\text{-}4} = 7.5$ Hz

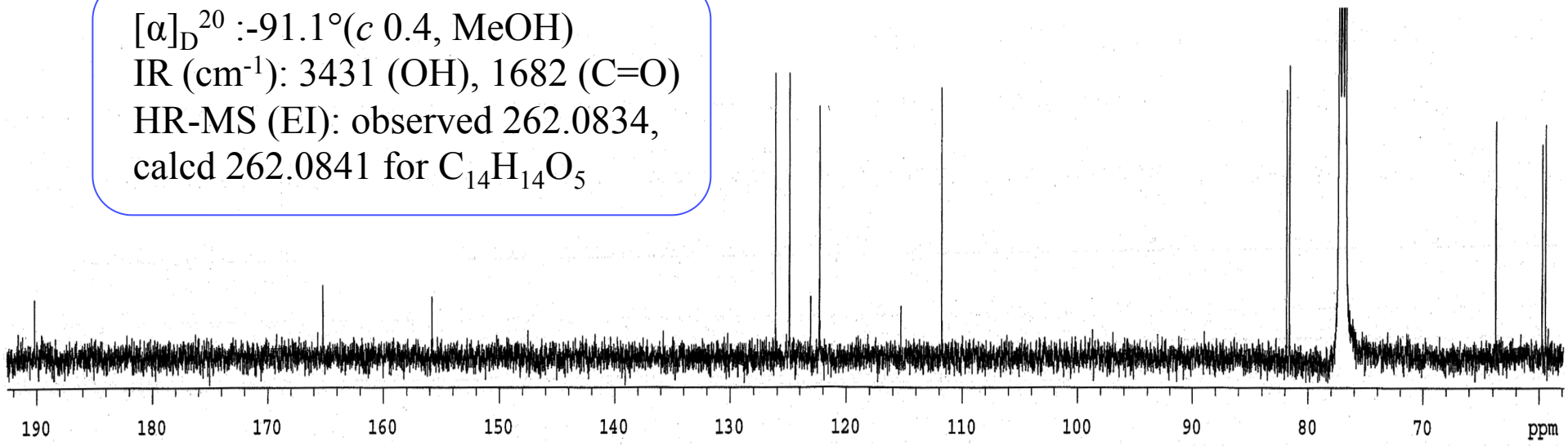
$J_{2\text{-}3} = 9.8$ Hz



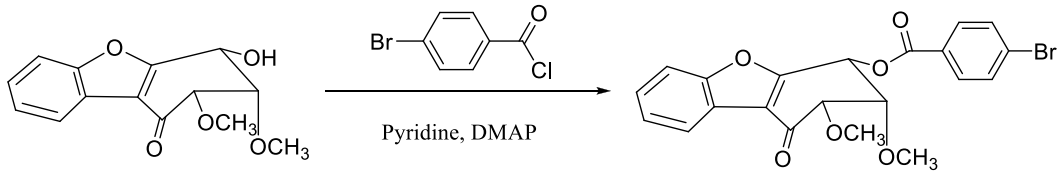
^{1}H and ^{13}C NMR spectra of ribisin B (2)



$[\alpha]_D^{20}$:-91.1°(*c* 0.4, MeOH)
IR (cm^{-1}): 3431 (OH), 1682 (C=O)
HR-MS (EI): observed 262.0834,
calcd 262.0841 for $C_{14}H_{14}O_5$

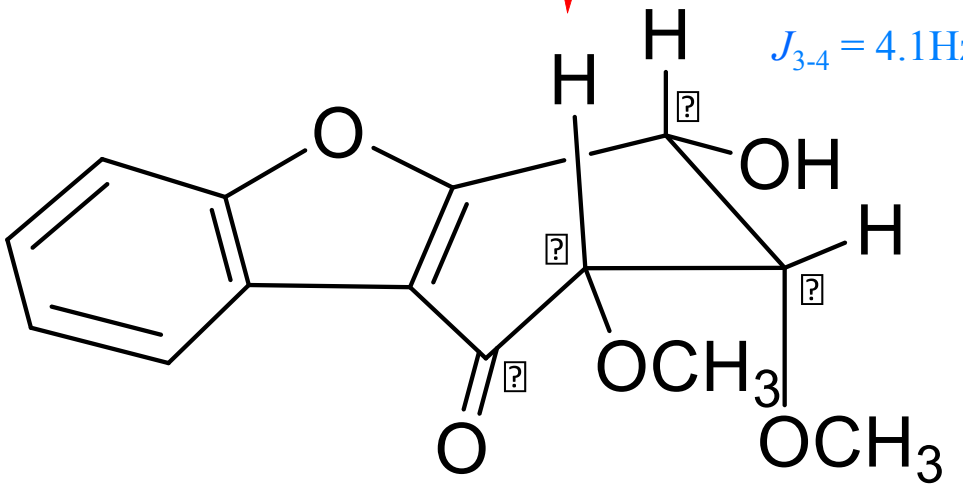


Relative and Absolute Configuration of 2



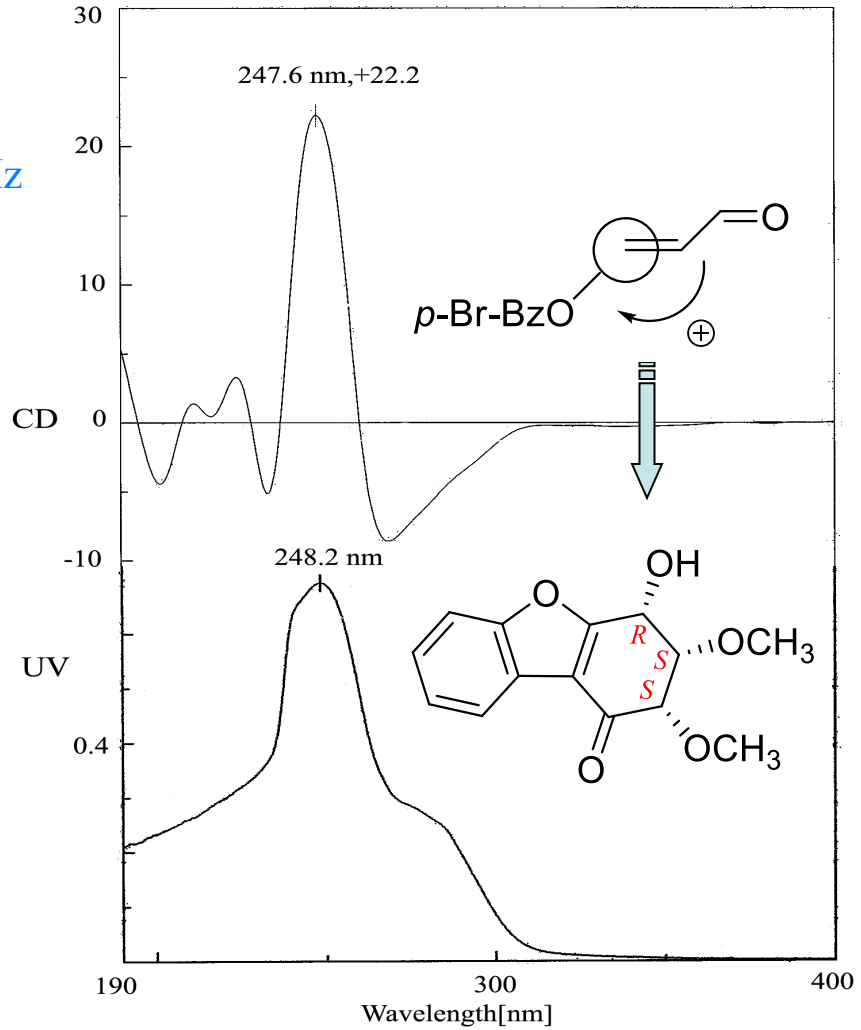
p-bromobenzoyl ester

NOESY

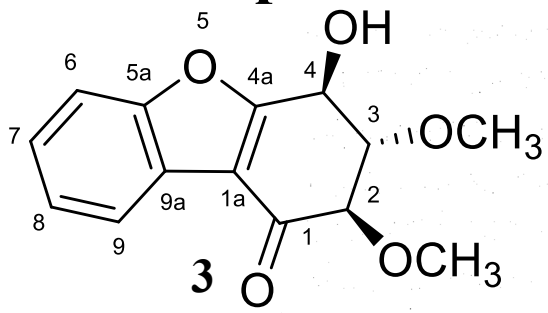


$J_{3\text{-}4} = 4.1\text{Hz}$

$J_{2\text{-}3} = 6.6\text{Hz}$



^{1}H NMR spectra of ribisin C (3) and B (2)



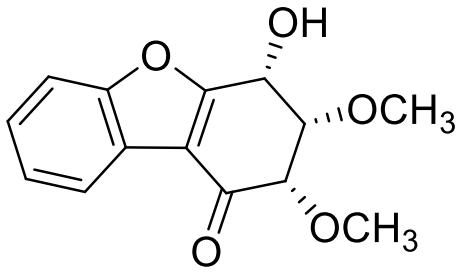
3

$[\alpha]_D^{20}$:-11.4°(*c* 0.5, MeOH)

IR (cm^{-1}): 3431 (OH), 1682 (C=O)

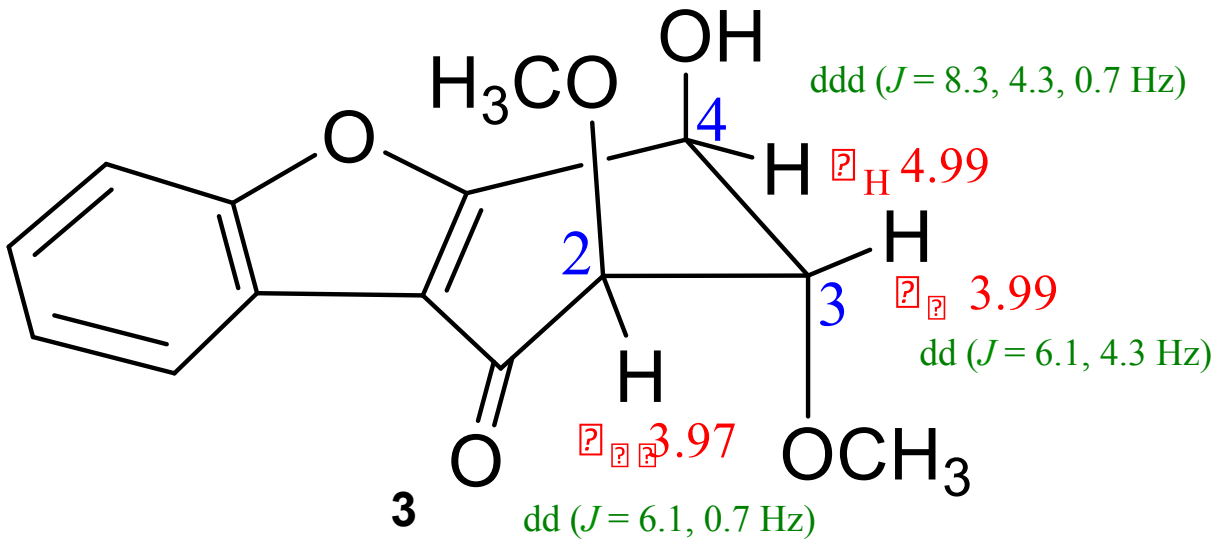
HR-MS (EI): observed 262.0845,

calcd 262.0841 for $C_{14}H_{14}O_5$



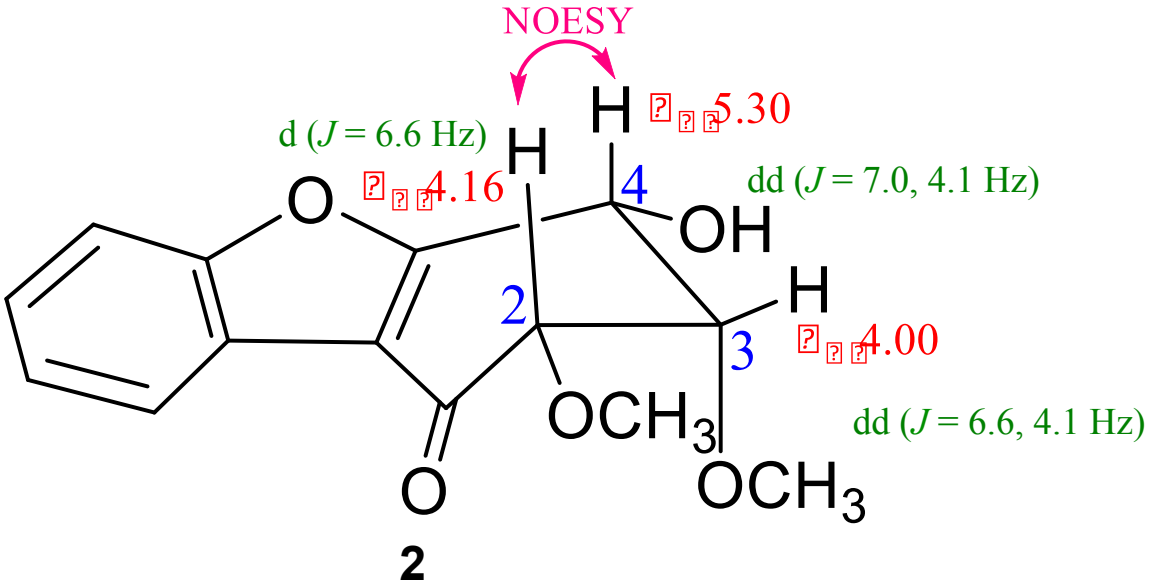
2

Comparison between 3 and 2



3

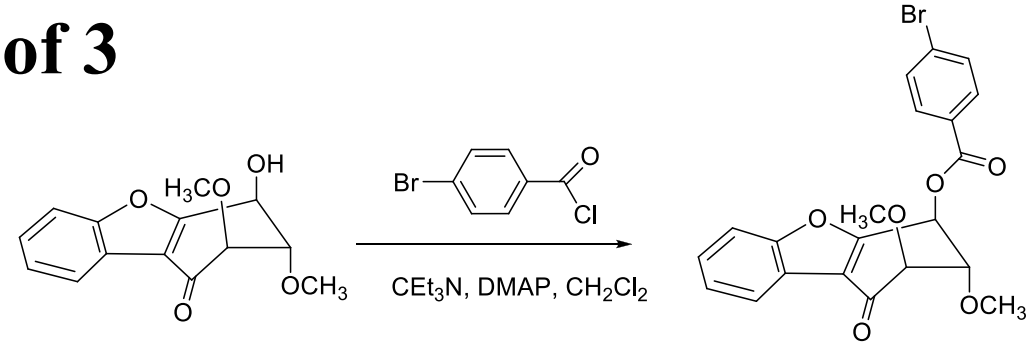
(H-2 and H-4)
equatorial
W-type long distance coupling
(H-3)
equatorial



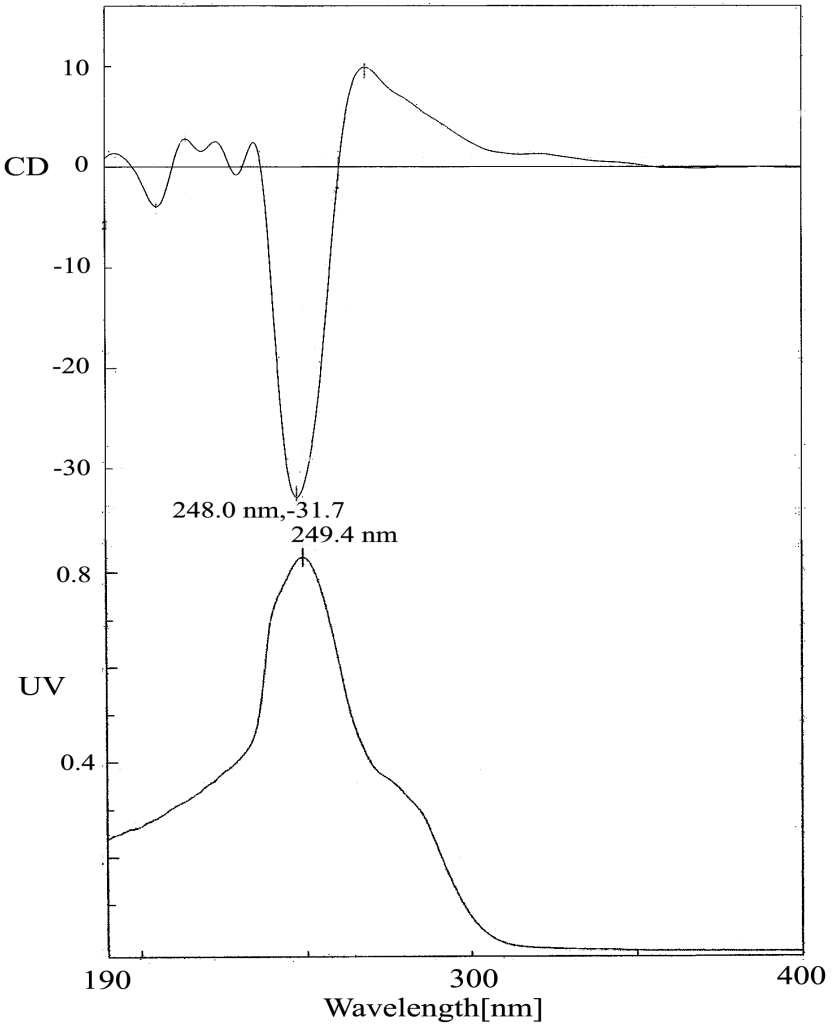
2

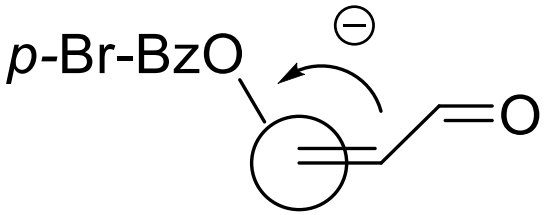
(H2 and H-4)
axial
(H-3)
equatorial

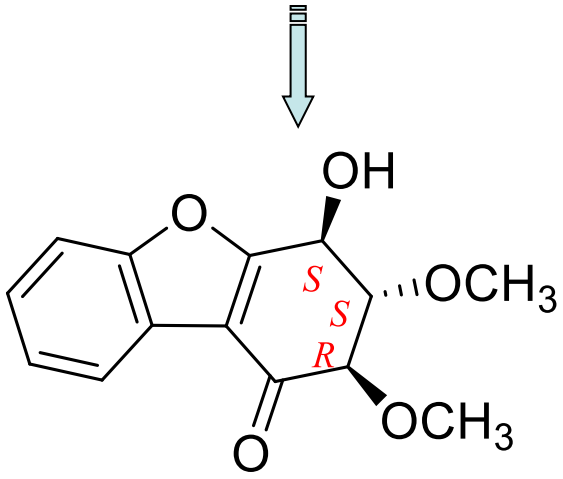
Absolute configuration of 3



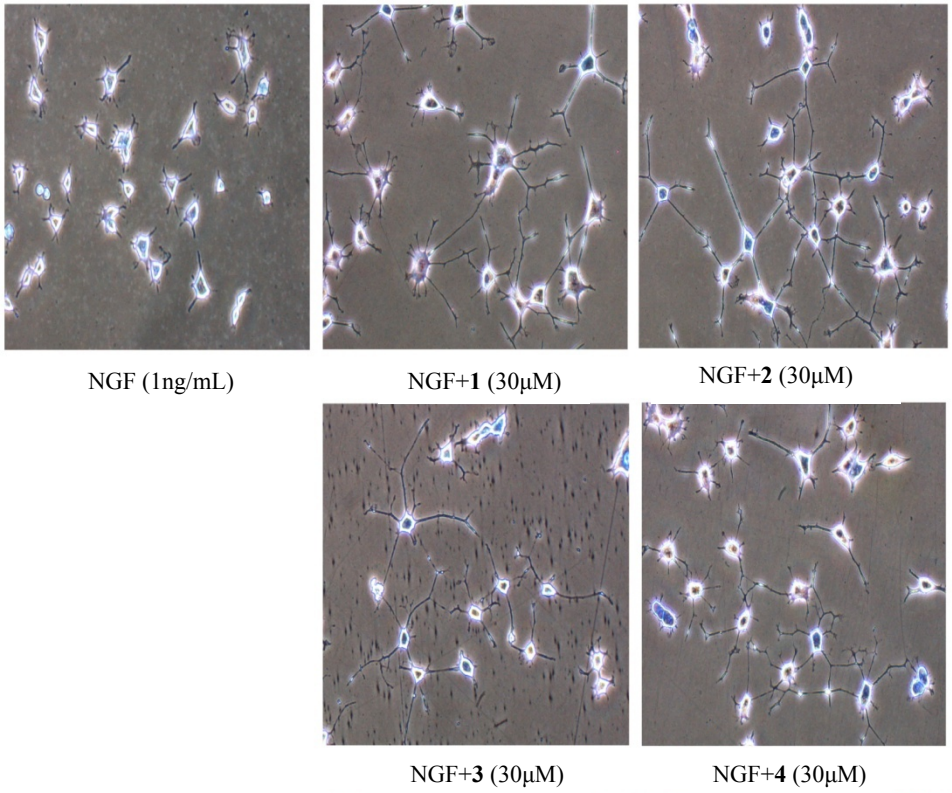
p-bromobenzoyl ester







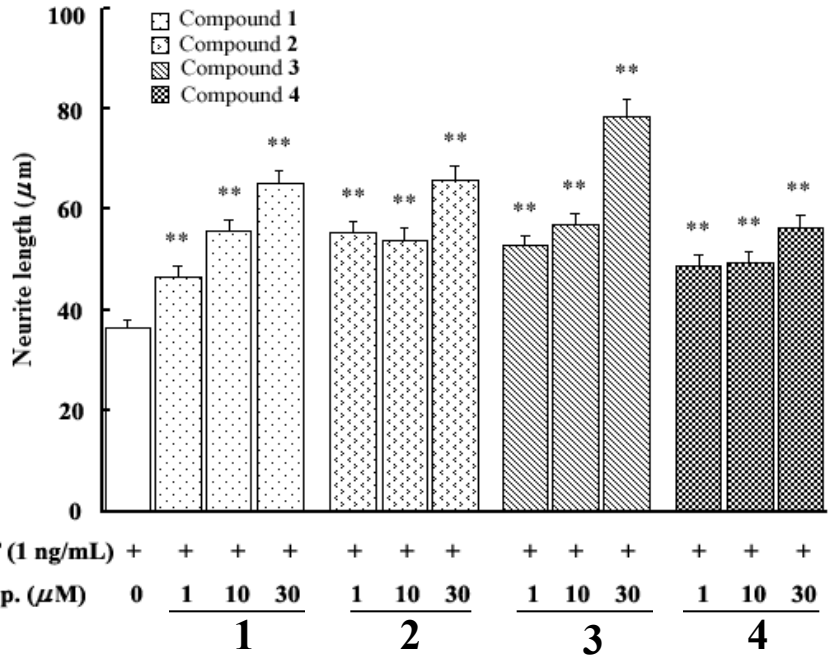
Activity on PC12 Cells

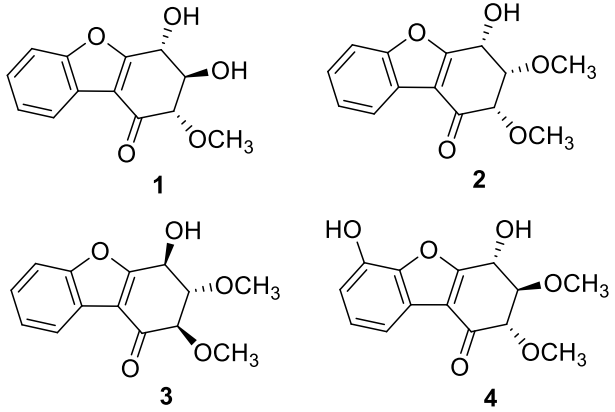


NGF (1ng/mL)　NGF+**1** (30μM)　NGF+**2** (30μM)

NGF+**3** (30μM)　NGF+**4** (30μM)

Quantitative Analysis of Neurite Outgrowth





Quantitative analysis of neurite outgrowth promoted by 1,2,3,and 4.PC12cells were supplemented wirh NGF (1 ng/mL) and 1,2,3,or 4. After 4 days, the neurite lengths of the PC12 cell were puantified. Data are expressed as the mean ±SE(n=100).**p<0.01 vs control;Dunnett's *t* test.