

# 慧德易电子期刊

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第 127 期

灵芝的活性成分及 HPLC 检测



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## 第 127 期灵芝的活性成分及 HPLC 检测

灵芝，为多孔菌科真菌赤芝 *Ganoderma lucidum* (Leyss. ex Fr.) Karst. 或紫芝 *Ganoderma sinense* Zhao, Xu et Zhang 的干燥子实体。主含氨基酸、多肽、蛋白质、真菌溶菌酶 (fungal lysozyme)，以及糖类 (还原糖和多糖)、麦角甾醇、三萜类、香豆精甙、挥发油、硬脂酸、苯甲酸、生物碱、维生素 B2 及 C 等；孢子还含甘露醇、海藻糖 (trehalose) 等。



功能主治：补气安神，止咳平喘。用于眩晕不眠，心悸气短，虚劳咳喘。

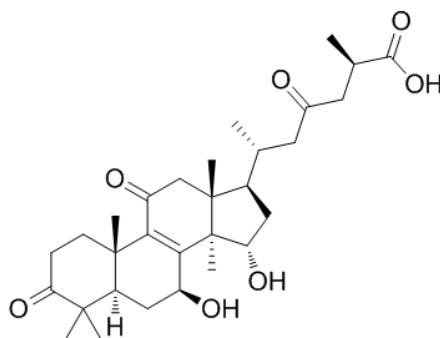
### 活性成分：

#### 1、灵芝酸A (Ganoderic acid A)

CAS: 81907-62-2

分子量: 516.67

分子式:  $C_{30}H_{44}O_7$



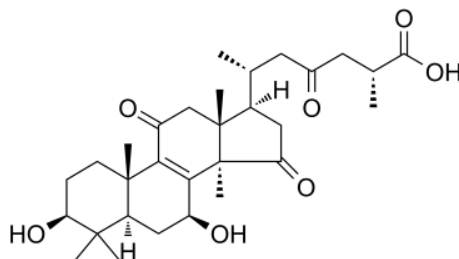
#### 2、灵芝酸B (Ganoderic acid B)

CAS: 81907-61-1

分子量: 516.67

分子式:  $C_{30}H_{44}O_7$

作用靶点: HIV-1 protease

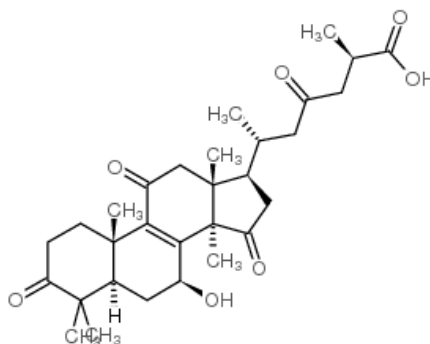


### 3、灵芝酸C1 (Ganoderic acid C1)

CAS: 95311-97-0

分子量: 514.65

分子式:  $C_{30}H_{42}O_7$

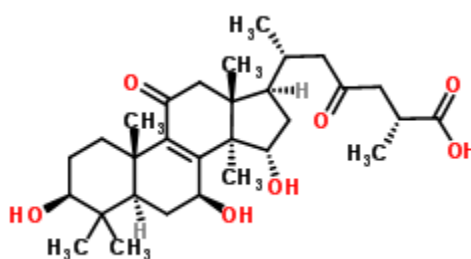


### 4、灵芝酸C2 (Ganoderic acid C2)

CAS: 98296-48-1

分子量: 518.682

分子式:  $C_{30}H_{46}O_7$



### 5、灵芝酸C6 (Ganoderic acid C6)

CAS: 105742-76-5

分子量: 530.650

分子式:  $C_{30}H_{42}O_8$

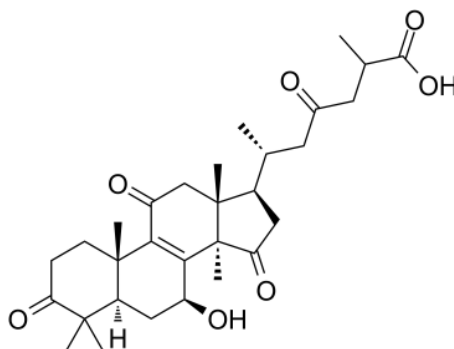


6、灵芝酸D (Ganoderic acid D)

CAS: 108340-60-9

分子量: 514.650

分子式:  $C_{30}H_{42}O_7$

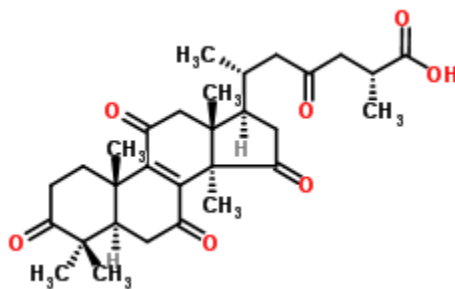


7、灵芝酸F (Ganoderic acid F)

CAS: 98665-14-6

分子量: 512.634

分子式:  $C_{30}H_{40}O_7$

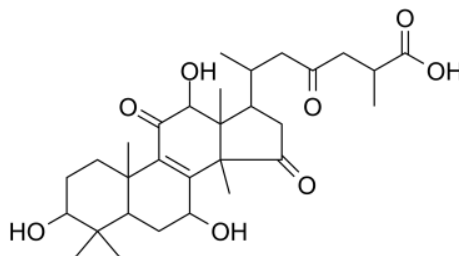


8、灵芝酸G (Ganoderic acid G)

CAS: 98665-22-6

分子量: 532.666

分子式:  $C_{30}H_{44}O_8$

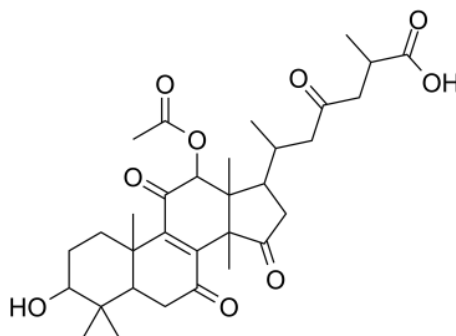


9、灵芝酸H (Ganoderic acid H)

CAS: 98665-19-1

分子量: 558.66

分子式:  $C_{31}H_{42}O_9$

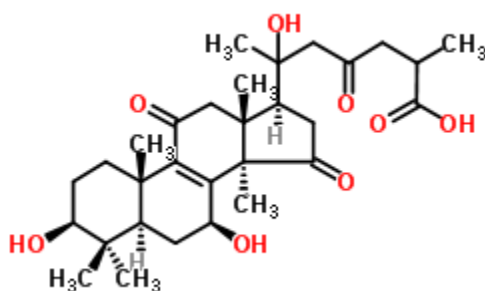


10、灵芝酸I (Ganoderic acid I)

CAS: 98665-20-4

分子量: 532.666

分子式:  $C_{30}H_{44}O_8$

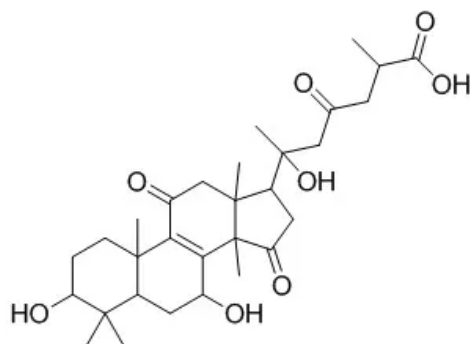


11、灵芝酸I (Ganoderic acid I)

CAS: 98665-20-4

分子量: 532.666

分子式:  $C_{30}H_{44}O_8$

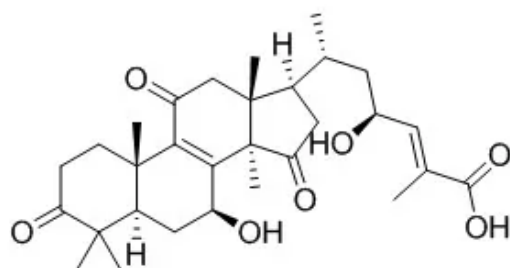


12、灵芝酸 LM2 (Ganoderic acid LM2 )

CAS: 508182-41-0

分子量: 514.659

分子式:  $C_{30}H_{42}O_7$

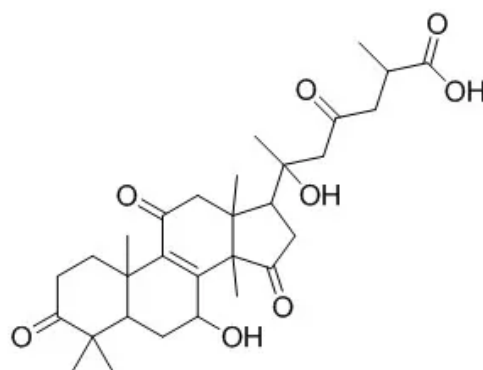


13、灵芝酸 N (Ganoderic acid N )

CAS: 110241-19-5

分子量: 530.658

分子式:  $C_{30}H_{42}O_8$

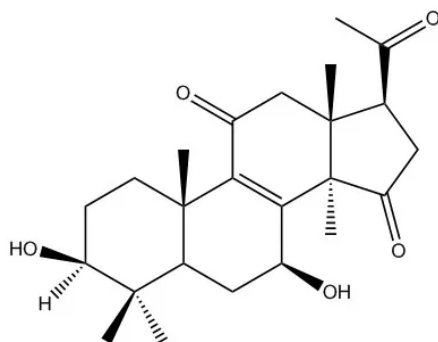


14、赤芝酮 A (Lucidone A )

CAS: 97653-92-4

分子量: 402.531

分子式:  $C_{24}H_{34}O_5$

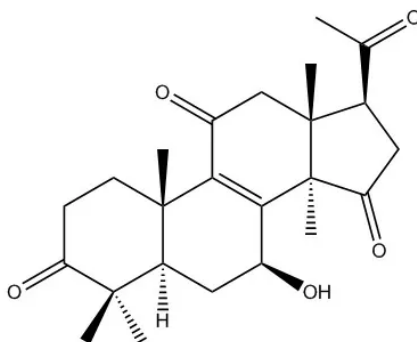


15、赤芝酮 B (Lucidone B )

CAS 97653-93-5

分子量: 400.515

分子式:  $C_{24}H_{32}O_5$

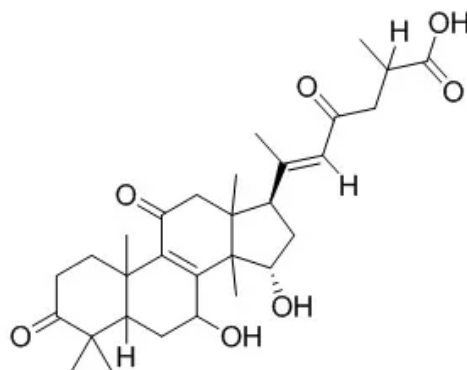


16、灵芝烯酸 A (Ganoderenic Acid A )

CAS: 100665-40-5

分子量: 514.659

分子式:  $C_{30}H_{42}O_7$

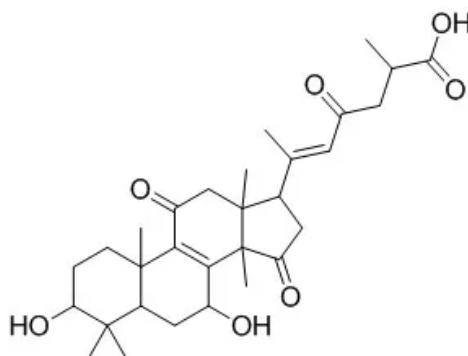


17、灵芝烯酸 B (Ganoderenic Acid B )

CAS: 100665-41-6

分子量: 514.659

分子式:  $C_{30}H_{42}O_7$

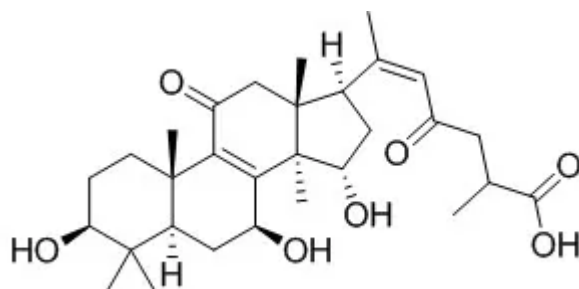


18、灵芝烯酸 C (Ganoderenic Acid C )

CAS: 100665-42-7

分子量: 516.675

分子式:  $C_{30}H_{44}O_7$

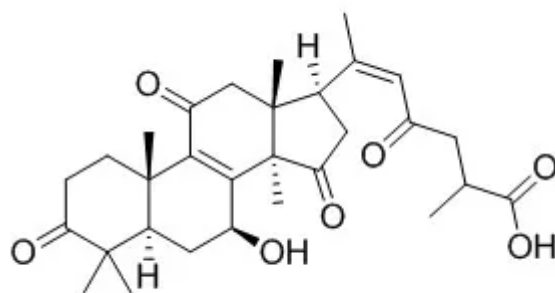


19、灵芝烯酸 D (Ganoderenic Acid D)

CAS: 100665-43-8

分子量: 512.643

分子式:  $C_{30}H_{40}O_7$

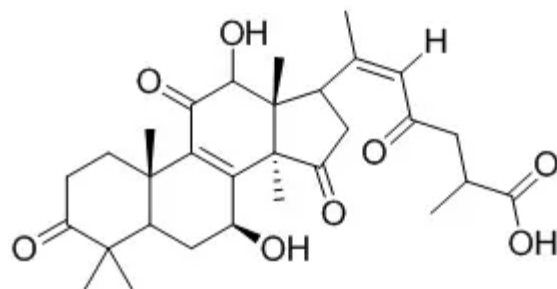


20、灵芝烯酸 E (Ganoderenic Acid E)

CAS: 110241-23-1

分子量: 528.642

分子式:  $C_{30}H_{40}O_8$



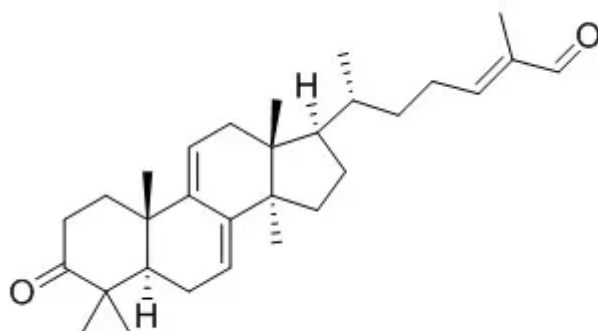


21、灵芝醛 A (Ganoderal A)

CAS: 104700-98-3

分子量: 436.68

分子式:  $C_{30}H_{44}O_2$

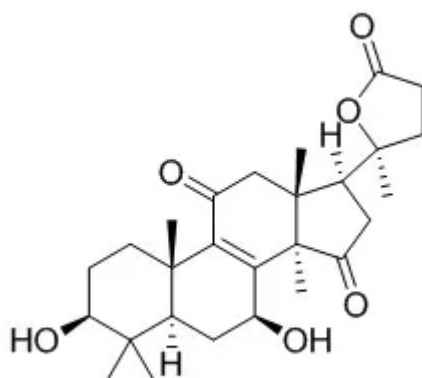


22、灵芝内酯 B (Ganolactone B)

CAS: 1028449-53-7

分子量: 458.6

分子式:  $C_{27}H_{38}O_6$

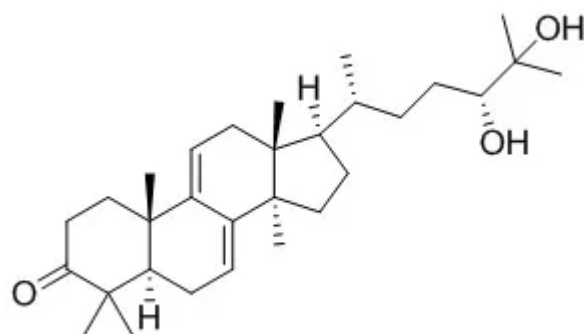


23、灵芝酮二醇 (Ganodermanondiol)

CAS: 107900-76-5

分子量: 456.711

分子式:  $C_{30}H_{48}O_3$

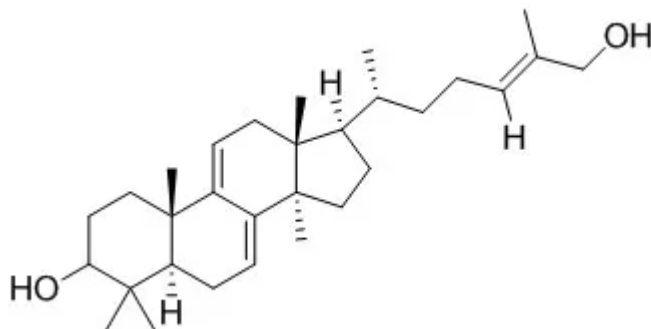


24、灵芝醇 B, 灵芝萜烯二醇 (Ganoderol B)

CAS: 104700-96-1

分子量: 440.712

分子式:  $C_{30}H_{48}O_2$

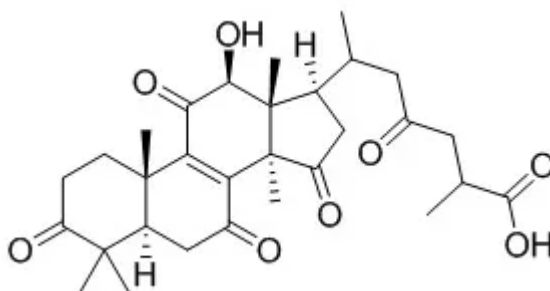


25、去乙酰基灵芝酸 F (Deacetyl-Ganoderic acid F,)

CAS: 100665-44-9

分子量: 528.642

分子式:  $C_{30}H_{40}O_8$

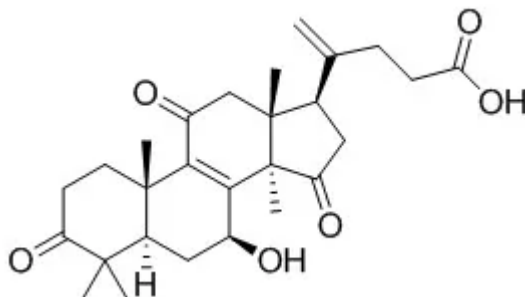


26、20(21)-脱氢赤芝酸 A (20(21)-Dehydrolucidenic acid A,)

CAS: 852936-69-7

分子量: 456.579

分子式:  $C_{27}H_{36}O_6$



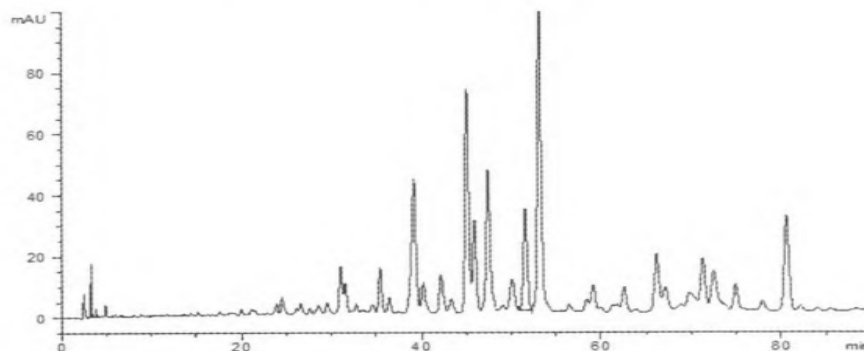
## HPLC 检测方法:

色谱柱: Agilent Zorbax SB-C18(250 mm×4.6 mm, 5 $\mu$ m);

流动相: 乙腈(A)-0.05mol/L 磷酸二氢铵水溶液(B);

梯度洗脱: 0~8 min, 18.5%-22.5% A; 8 min~90 min, 25.5%-38% A;

检测波长: 254 nm; 柱温: 250 $^{\circ}$ C; 流速: 1.0 mL/min; 进样量: 10 $\mu$ L



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