RESEARCH ON THE BIOACTIVE COMPOUNDS OF THE POLYPORE *INONOTUS* SP.

H.V.K. Wangun, A. Haerte and C. Hertweck
Leibnitz - Institute (HKI Jena) - Germany
Trinh Tam Kiet
Insitute of Microbiology and Biotechnology, VNU Vietnam

I- Introduction

Macro Fungi estimated from 20.000 species. Mushroom have played an important nutritional and therapic role in the world since ancient time. In some previous decades a lot of the wood habiting mushrooms are studied more intensively. In compare with the another species of the families Ganodermataceae, Polyporaceae, Coriolaceae. The species of the family Hymenochaetaceae were examinated relative previoustly, but they seem to be a rich source of novel structures. In this paper, we investigated the main bioactive compounds and their biology Potent of the Mushmoom *Inonotus* sp.

II-Materials and Methode

The specimen collection and the identification of this fungus is studying acording Kiet (1981). Ryvarden and Joleansen,1993.The bioactive compounds are extracted and evaluated according U. Graefe et al (2002).

III-Results and discussion

Description of the mushroom

Cap 8-20 cm wide, mostly single, dimidate, rounded tomentous margin to thin when mateur; gray-yellow to red-brown, fat-tomentous. Fresh 0.5-1.5 cm thick, soft and spongy when fresh, yellow to rust-brown. Tube 0.8-3cm long. Pore (2-3 per mm) round to angular; whitish to gray-brown. Spore 9-11x8-9µM, global- large ellip, smooth pale to yellow. On base of living and dead trees.

Extraction and isolation

The fruiting body of Inonotus sp. (25 g dry weight) was cut into small species, dried and crushed. The resulting powder was ectracted three times with ethanol (2L) and chloroform/methanol (1:1) (3x2L, 3 days each). The extracts were subjected to silica gel chromatography (silica gel 60, Merck, 0.063- 0.1mm, colum 4x60cm), using stepwise CHCl3-MeOH (9:1, 8:2, 1:1 v/v) as eluents. Final purification was achieved by preparative HPLC (Spherisord ODC-2 RP_{18}, 5µ (promochem), 250x25mm, acetonitrile/H_2O (83:17v/v), at a flow rate of 10ml/min and UV detection at 372 nm). Yields: 500 mg of **4**, 4 mg of **5**, 6 mg of **7**, 20mg of **9** and 4 mg of **11**. The main product from Inonotus sp was identified as the knowm metabolite hispidin **4** by comparison of MS, IS and NMR data 10. In addition to **4**, another compound **5** with the same molecular formula ($C_{13}H_{10}O_5$) was isolated. Also the ^{1}HNMR spectum of **5** showed signals similar to those of **4** (10). However, the ^{13}C NMR spectrum, which showed a signal for a conjugated carbonyl at δ 179. 1, clearly established **5** as the tautomeric γ-pyrone (*iso*-hispidin). The ^{1}H and ^{13}C NMR for compound 5, 9 and 11 were given in table1.

The molecular formula of the second main product **9** was determinated **3** as $C_{14}H_{14}O_6$ based on HR-EIMS and its ^{13}C NMR spectrum [similar to 4 and 5, the ^{1}H-NMR spectrum showed signals attributable to the ABX spin coupling system of a trisubtituated phenyl and two exchangeable phenolic hydroxyl...]. The compound **9** consequently represent the methyl ester of the open chain derivative of 4 or 5, and was named inonotic acid methyl ester.