

[PD2-12] [ 04/18/2003 (Fri) 13:30 - 16:30 / Hall P ]

### Hepatoprotective constituents from *Beta vulgaris* var. *cycla*

Kim Inkyum<sup>o</sup>, Chin Young-Won, Song Won Lim, Yang Hye Kyung, Kim Young Choong, Kim Jinwoong

College of Pharmacy, Seoul National University

In the course of hepatoprotective screening for domestic plants, the aerial parts of *B. vulgaris* var. *cycla* exhibited hepatoprotective activity which was determined by using the primary cultures of rat hepatocytes injured by H<sub>2</sub>O<sub>2</sub>. Bioactivity-guided separation for this plant gave a new flavonoid (1) and the known compounds (2-4), which structures were elucidated by <sup>1</sup>H-NMR, HMQC, <sup>1</sup>H-<sup>1</sup>H COSY and HMBC as compound 1, apigenin 8-C-,7-O-di-β-D-glucopyranoside, compound 2, vitexin 2"-O-β-D-glucopyranoside, compound 3, (+)-dehydrovomifoliol, and compound 4, 3-hydroxy-5α,6α-epoxy-β-ionone.

[PD2-13] [ 04/18/2003 (Fri) 13:30 - 16:30 / Hall P ]

### Chemical Components and their Antioxidative Effect of *Distylium racemosum*

Park Youngki<sup>o</sup>, Lee Wi Young, Ahn Jin Kwon, Lee Hak-Ju, Chin Hwi Seung, Kwon Young Jin

1Div. Biotechnology, Korea Forest Research Institute, Suwon;2Div. Wood Chemistry & Microbiology, Korea Forest Research Institute, Seoul

This study was carried out to isolate and to identify the compounds and to find out antioxidants from the leaf of *Distylium racemosum* which belongs to Hamamelidaceae family. To isolate compounds, leaf of this plant were extracted with 50% Acetone and then crude extracts was partitioned with hexane, ether and ethyl acetate (EtOAc) successively. After partitioned, EtOAc fraction was subjected to column chromatography with various solvent systems in silica gel and/or Sephadex LH-20. To identify compounds, instrumental analysis (NMR spectroscopic techniques including by <sup>1</sup>H-<sup>1</sup>H COSY, NOESY, HMQC and HMBC spectroscopy) was performed. The antioxidant activity test was investigated by measuring the DPPH (1,1-diphenyl-2-picrylhydrazyl) free radical scavenging effect.

From the leaf of *D. racemosum*, three phenolic compounds were isolated and identified as followed : methyl gallate (1), kaempferol (2) and quercetin (3). These compounds are the first report from *D. racemosum*. The order of the radical scavenging activity against DPPH radical is EtOAc fraction>Crude extracts>Residue fraction>hexane fraction>ether fraction, under the experimental conditions. Among these compounds, the free radical scavenging activities were 79.9 %, 93.1 % and 93.6 % at 10 μg/ml, respectively. The IC<sub>50</sub> of comp 1, comp 2 and comp3 were 6.1, 4.1 and 3.6 μg/ml, respectively. These three compounds have higher antioxidative activity compared with reference compounds, ascorbic acid (IC<sub>50</sub>=9.6 μg/ml).

[PD2-14] [ 04/18/2003 (Fri) 13:30 - 16:30 / Hall P ]

### Isolation of specific butyrylcholinesterase (BuChE) inhibitors from the rhizome extract of *Curcuma zedoaria*

Kim YoungSup<sup>o</sup>, Park EunKyung, Heor JungHee, Kim SeongKie, Kim JungSook, Choi YeonHee, Seo JeeHee, Lee BongHo, Choi ByoungWook, Ryu Geonseek, Ryu ShiYong

Korea Research Institute of Chemical Technology

Alzheimer's disease(AD) is the most common cause of senile dementia in elderly people and the causes of AD are currently not fully understood. However, AD is generally understood to be associated with reduced levels of acetylcholine in the brain as cholinergic neurons are lost and cholinergic neurotransmission declines. There are growing evidences that two types of cholinesterase(ChE), i.e., acetylcholinesterase (AChE) and butyrylcholinesterase (BuChE) both play important roles in the regulation of acetylcholine level in brain and thus may have a crucial role in the development and progression of AD.

We have recently evaluated the inhibitory effect of plant extracts on the horse serum BuChE over eighty species of medicinal plants, for the purpose of searching for the new classes of BuChE inhibitors of natural origin which could be employed as an alternative therapy for the treatment of senile dementia or other neurodegenerative disease.

Among the tested materials, the MeOH extract of Evodiae Fructus, Coptidis Rhizoma, Phellodendri Cortex and of Zedoariae Rhizoma were found to exhibit a significant inhibition in vitro upon the BuChE in a dose dependent manner, respectively.

An extensive bioassay-guided purification of rhizome extract of Curcuma zedoaria (Zingiberaceae) led to the isolation of some sesquiterpenes as active ingredients of the extract responsible for the selective inhibition upon BuChE, in vitro.

[PD2-15] [ 04/18/2003 (Fri) 13:30 - 16:30 / Hall P ]

#### **Isolation of inhibitory compounds from the Magnoliae Flos on melanin biosynthesis in cultured B-16 mouse melanoma cell lines.**

Xu GuangHua<sup>o</sup>, Kim JeongAh, Park SungHee, Chang HyunWook, Chung SeeRyun, Lee SeungHo

College of Pharmacy, Yeungnam University, Gyongsan 712-749, Korea

Magnoliae Flos('shin-i'), the flower buds of Magnolia kobus, is acrid to taste with a 'warm' property. It is a 'wind-cold' discutient and nasal decongestant and is principally used in the treatment of nasal congestion with headache, sinusitis and allergic rhinitis. By screening inhibitory activities on the melanin polymer biosynthesis in B-16 mouse melanoma cell lines, methylene chloride extract of Magnoliae Flos was found to have inhibitory effect on melanin polymer biosynthesis. Six known compounds were isolated from the extract of Magnoliae Flos and they were identified as fargesin(1), kobusin(2), aschantin(3), magnolin(4), rel-[7s,8s,8's]-3,4,3',4'-tetramethoxy-9,7'-dihydroxy-8.8',7.0.9'-lignan(5) and oplodiol(6) by comparison of physical and spectral data with those of authentic samples. Among the six isolated compounds, fargesin(1) showed most potent inhibitory effect on the melanin polymer biosynthesis in cultured B-16 mouse melanoma cell lines(IC<sub>50</sub>, 46.65μM).

[PD2-16] [ 04/18/2003 (Fri) 13:30 - 16:30 / Hall P ]

#### **Anti-Complement Activity of Constituents from the Stem-Bark of Juglans madshurica**

Min ByungSun<sup>o</sup>, Kim JungHee, An RenBo, Lee JoongKu, Kim TaeJin, Kim YoungHo\*, Joung Hyouk, Lee HyeongKyu Lee

Laboratory of Immunomodulator, Korea Research Institute of Bioscience and Biotechnology,