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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 purifiaction of rhizome extract of Curcuma zedoaria (Zingiberaceae) led to the isolation of some sesquiterpenes as actve 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.

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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.O.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(IC50, 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

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Anti-complement Activity of Constituents from the Stem-Bark of *Juglans mandshurica*

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Four known flavonoids and two galloyl glucoses isolated from the stem-bark of *Juglans mandshurica* (Juglandaceae), namely taxifolin (**1**), afzelin (**2**), quercitrin (**3**), myricitrin (**4**), 1,2,6-trigalloylglucose (**5**), and 1,2,3,6-tetragalloylglucose (**6**), were evaluated for their anti-complement activity against complement system. Afzelin (**2**) and quercitrin (**3**) showed inhibitory activity against complement system with 50% inhibitory concentrations (IC_{50}) values of 258 and 440 μM. 1,2,6-Trigalloylglucose (**5**) and 1,2,3,6-tetragalloylglucose (**6**) exhibited anti-complement activity with IC_{50} values of 136 and 34 μM. In terms of the evaluation of the structure-activity relationship of 3,5,7-trihydroxyflavone, compounds **2**, **3**, and **4** were hydrolyzed with naringinase to give kaempferol (**2a**), quercetin (**3a**), and myricetin (**4a**) as their aglycones, and these were also tested for their anti-complement activity. Of the three aglycones, kaempferol (**2a**) exhibited weak anti-complement activity with an IC_{50} value of 730 μM, while quercetin (**3a**) and myricetin (**4a**) were inactive in this assay system. Among the compounds tested, 1,2,3,6-tetragalloylglucose (**6**) showed the most potent anticomplement activity (IC_{50}, 34 μM).

[PD2-17] [04/18/2003 (Fri) 13:30 - 16:30 / Hall P]

Aldose Reductase Inhibitory Constituents from *Ganoderma applanatum*

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The EtOAc and CH_2Cl_2 soluble fractions from the fruit body of *Ganoderma applanatum* showed strong aldose reductase inhibitory activity. Nine compounds were isolated from both fractions. They were identified by spectral data as D-mannitol (**1**), 2-methoxyfatty acid (**2**), cerebrosides [(2S,3R,4E,8E)-1-O-β-D-glucopyranosyl-3-hydroxy-2-[(R)-2'-hydroxypalmitoyl]amino-9-methyl-4,8-octadecadiene] (**3**), daucosterol (**4**), 2,5-dihydroxybenzoic acid (**5**), protocatechualdehyde (**6**), 5-dihydroergosterol (**7**), ergosterol peroxide (**8**), and cerevisterol (**9**). Among these compounds, **3**, **6**, and **8** exhibited strong aldose reductase inhibitory activities.

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

A New Antioxidant Polyphenolic Compound from Two Korean Brown Algae

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