allylic oxidation afforded D-cyclopentenone. Since many L-nucleosides have shown interesting biological activity, we also synthesized L-cyclopentenone using similar RCM strategy. Our syntheses were found to be superior to those of the previously published syntheses.

[OD-4] [04/20/2001 (Fri) 14:15 - 14:30 / Room 3]

Docking Study of Topoisomerase I - DNA Complex with 3-Arylisoquinolines

Cho WJ°, Kim EK, Kim TS

College of Pharmacy, Chonnam National University

DNA topoisomerase 1 is an essential enzyme for relaxation of DNA during a number of critical cellular processes, including replication, transcription, and repair. Topo I catalyzes change in the linking number of DNA by breaking and resealing phosphodiester bonds. Therefore, the enzyme is a cellular target for anticancer drug development, and the characterized topo I inhibitors are camptothecin and its derivatives. During our study for the finding of new anticancer agents, several isoquinoline derivatives were found to show very potent topo I poison. Docking experiments using Sybyl 6.6 were undertaken with topo I ?DNA complex structure and several isoquinoline compounds. This study provides a three-dimension model for the postulated ternary cleavable complex of topo I, DNA, and the ligand molecules. In this proposed ?drug-stacking model, the compounds are intercalated in the topo I 뿢inked DNA cleavage site and interacts with the thymine 11 and Lys 532.

[OD-5] [04/20/2001 (Fri) 14:30 - 14:45 / Room 3]

Biosynthesis of Ginseng Saponin(1): Determination of Protopanaxadiol and Protopanaxatriol in Panax ginseng hairy roots by ELISA methods

Jung DW, Lim YH, Li HG, Sung CK°

Lab. of Pharmacognosy, College of Pharmacy, Chonnam National University, Kwangju 500-757, Korea

Protopanaxadiol (PPD) and protopanaxatriol (PPT) were known as aglycones of dammarane type saponin, ginsenosides from *Panax ginseng* C. A. Meyer. As a course of investigating biosynthetic enzymes of dammarane ginsenosides, production of the aglycones was examined in *Panax ginseng* hairy roots by ELISA methods.
For this study we developed ELISA methods for measuring PPT and PPT using polyclonal antibody. In present study, we report: 1) A specific and sensitive ELISA was developed for the determination of PPD, and 2) PPD and PPT contents in *Panax ginseng* hairy roots were measured successfully. The Abs were obtained from rabbits by immunization with IH-901-bovine serum albumin conjugate was used as immunogen. While the Abs were found to be specific to both IH-901 and PPD, they showed minor or even no corss-reactivity to PPT (1.79%) and other ginsenoside tested (G-Rg_1:0.08%; G-Rb_1:0.13%; G-F_1:1.48%). The working range of the assay was from 0.025ng/well to 1.25ng/well. The comparison of ELISA and HPLC showed a good correlation (r=0.986) between the two methods.
In *Panax ginseng* hairy roots cultures (1/2 MS liquid medium; ca. 10 mg inoculum; 50ml/100ml flask; rotated at 100 rpm), both PPD and PPT contents were increased from the day 25. In conclusion, the ELISA methods could be very useful tools for the studies on the biosynthesis of dammarane glycoside.

[OD-6] [04/20/2001 (Fri) 14:45 - 15:00 / Room 3]

Isolation of HIV gp-41 Binding Components from the Stem of Fraxinus sieboldiana

var. angustata

Hyoung Ja Kim[O]*, Ji Sun Lee, Yeon Gyu Yu, Hokoon Park and Yong Sup Lee

Division of Life Sciences, Korea Institute of Science and Technology

Fraxinus sieboldiana var. angustata Nakai (Oleaceae) is one of the native plants of Fraxinus sp. in Korea. The bark of this plant called as "Gin Pi" has diverse pharmacological activities such as soothing, expectorant and anti-inflammatory activity. The isolations of hydroxycoumarins (e.g. esculin, fraxin, fraxetin, fraxinol, isofraxetin and esculetin) have been reported from several research groups over the past two decades.
By means of HIV gp-41 binding affinity directed chromatographic fractionation, three phenylpropanoid glycosides, calceolarinoside A (1), calceolarinoside B (2) and acteoside (3), along with four hydroxycoumarins (esculin, fraxin, fraxetin and esculetin) were isolated from Fraxinus sieboldiana var. angustata. The structures of these compounds were elucidated on the basis of spectroscopic methods. Three phenylpropanoid glycosides were isolated for the first time from this plant.

[OD-7] [04/20/2001 (Fri) 15:00 - 15:15 / Room 3]

Cytotoxic Acetylenes and a Pyridinium Alkaloid from the Stony Coral Montipora sp.

Alam N, Bae BH, Hong JK, Lee C-O, Kim ND, Song J I, Im K S and Jung JH*

Pusan National University, Korea Basic Science Institute, Korea Research Institute of Chemical Technology, Ewha Womans University

Stony corals have been found to contain interesting secondary metabolites, and the genus Montipora is especially rich in acetylenic compounds. Our continuing search for the cytototoxic constituents of the marine organisms has resulted in the isolation of a series of diacetylene derivatives from Montipora sp. All these acetylenes are either 2,4- or 5,7-diacetylenes and most of them have shown a significant cytotoxicity against a small panel of human solid tumor cell lines (A549, SK-OV-3, SK-MEL-2, XF-498, and HCT15). Montiporyne A has been found to induce apoptosis in human colon cells (HCT116). A new pyridinium alkaloid has also been isolated. The structures were elucidated based on combined spectroscopic data.

Reference:
1.Bae, B. H.; Im, K. S.; Choi, W. C.; Hong, J.-K.; Lee, C.-O.; Choi, J. S.; Son, B. W.; Song, J.-I.; Jung, J. H., J. Nat. Prod. 2000, 63, 1511-1514.

[OD-8] [04/20/2001 (Fri) 15:15 - 15:30 / Room 3]

A RAPID, ACCURATE, AND NONDESTRUCTIVE METHOD FOR THE DETERMINATION OF FAT, LACTOSE, PROTEIN, AND TOTAL SOLIDS IN RAW MILK USING NEAR-INFRARED TRANSMITTANCE SPECTROSCOPY

Woo YA, Sumio Kawano, Fuminori Terada*

National Food Research Institute, Tsukuba 305-8642, Japan, National Institute of Animal Industry, Inashiki 305-0910, Japan*

Near-infrared (NIR) transmittance spectroscopy has been applied to determine rapidly and nondestructively the content of fat, lactose, protein and total solids in raw milk. The spectral range