[OD-4] [10/18/2002 (Fri) 12:00 - 12:10 / Hall B]

Total synthesis of deoxy-azasugars

Pyun SungJae°, Oh ChangYoung, Lee Keeyoung, Kim YongHyun, Lee Yiusuk, Pharm VanThoai, Ham WonHun

College of Pharmacy, Sungkyunkwan University

Azasugars, which have been called the "sugar-shaped" alkaloids from plants, are reversible, competitive inhibitors of glycosidases. The purpose of these natural products is possibly to inhibit the carbohydrate metabolism and consequently the growth of plant consuming pests. Since selective glycosidase inhibitors have a large number of interesting potential applications including treatment of AIDS, diabetes, and tumor metastasis, they have received a considerable attentions.
On the basis of our previous research, we anticipated that the palladium(0)- catalyzed oxazoline formation of homoallyl benzamide formed from protected D-serinol might proceed with high stereoselectivity. As part of program directed at expanding the synthetic utility of oxazoline as chiral building block for the synthesis of natural products, we report herein our synthetic efforts, which led to a concise and highly stereocontrolled total synthesis of deoxy-azasugars(deoxy-galactonojirimycin and deoxygulonojirimycin) using trans-oxazoline.

[OD-5] [10/18/2002 (Fri) 12:10 - 12:20 / Hall B]

DESIGN, SYNTHESIS AND IN VITRO EVALUATION OF APIO ANALOGUE OF NEPLANOCIN A

Moon Hyung Ryong°, Lee Jeong Ah, Yoo Byul Nae, Shin Dae Hong, Jeong Lak Shin

College of Pharmacy, Ewha Womans University, Seoul 120-750, Korea

Apio nucleosides whose 4'-hydroxymethyl group moves to 3'-position exhibit interesting biological activity such as antitumor or antiviral activity. On the other hand, neplanocin A is the representative of the carbocyclic nucleosides and has been recognized as a potent antitumor and antiviral agent. Based on these findings, it was of great interest to design apio neplanocin A which combined the properties of apio nucleosides and neplanocin A. For the synthesis of the apio neplanocin A, D-ribose was converted to the key intermediate, D-apio cyclopentenol via Grignard reaction, oxidative cleavage, and hydroxymethylation as key steps. The glycosyl donor, D-apio cyclopentenol was condensed with adenine anion to give the final nucleoside after the removal of the protecting group. The final apio neplanocin A was assayed against several viruses such as HSV-1, HSV-2, and HBV and found to be neither active nor cytotoxic. Interesting chemistry encountered during the synthesis and biological activity will be presented in the meeting.

[OD-6] [10/18/2002 (Fri) 12:20 - 12:30 / Hall B]

Potent Antitumor Activity of SB31 and Identification of Active Compound

Kim Yong°, Kim SongBae, Bang SeongCheol, Ahn ByungZun

SB Pharmaceutical Co. LTD, 533-2 Banpo-myeon, Gongju-shi 314-923 Korea

SB31, an extract of *Pulsatilla koreana*, has been tried as an antitumor agent by traditional medicine pratitioner in Korea for the past 30 years.
SB31 was evaluated for cytotoxic and antitumor activity against a variety of cancer cell lines. The SB31 exhibited 5-6 fold less cytotoxic activity against normal mononuclear cells (ED_{50}, 1.1 mg/ml) than against cancer cell lines (ED_{50}, 0.14 - 0.19 mg/ml).
SB31 exhibited significant antitumor activity at a dose of 0.3 ml/20g against two transplantable murine tumor model, Sarcoma 180, and Lewis lung carcinoma (LLC) with inhibition ratio of 50.1 %, 65.8 % respectively.
SB31 when adminstered i.p. at a dose of 0.2 ml/20g, showed more potent antitumor activity on human NCI-H23 lung, HT-29 and COLO205 colon tumor xenografts in nude mice with inhibition ratio of 86 %, 73.7 % and 76.9 % respectively than that of Adriamycin (62 %, 63.3 %, and 40.4 %) used as a positive control.
SB365, active component, was isolated from the extract of *Pulsatilla koreana* by in vivo antitumor assay-guided separation. SB365 did not show significant cytotoxic activity against a variety of human tumor cell lines at 10 μg/ml, while exhibited potent antitumor activity at a dose of 6.4 mg/kg on BDF1 mice bearing LLC cells with inhibition ratio of 82.9 %. This result indicate that the SB365 might be a suitable candidate as an ideal anticancer agent.
Phase II clinical trial of SB31 and preclinical trial of SB365 are currently underway.

[OD-7] [10/18/2002 (Fri) 16:30 - 16:40 / Hall B]

Identification of a new analogue of sildenafil from functional food for penile erectile dysfunction

Shin MyoungHee°, Hong MooKi, Lee YoungJa, Kim WooSung, Hong KiHyung, Kim InBok, Jung YeonChan

Busan Regional Agency, Korea Food & Drug Administration

Any food additive as a chemical synthetic compound, whose criteria and standards are not notified publicly and foods using an food additives containing such a chemical synthetic compound or foods containing it shall not be sold, or manufactured, imported, processed, used, prepared, stored, transported, or displayed for the purpose of sale. Some food manufacturers have illegally added drugs to foods not notifying this. Moreover, structure-modified new drugs could be added. But it is almost impossible to detect these by ordinary laboratory inspection. Thus the study about the identification of analogues of pending drugs is imminent.
This study deals with a new analogue of sildenafil which was illegally added to some functional food for penile erectile dysfunction. Its structure was established by various NMR spectroscopic techniques (including DEPT, COSY, TOCSY, HMQC, HMBC) and HRFABMS. Because of additional methylene group to sildenafil, it was given the name homosildenafil, and this has never been reported previously.

[OD-8] [10/18/2002 (Fri) 16:40 - 16:50 / Hall B]

Simultaneous Profiling Analysis of Urinary Organic Acids and Amino Acids by Gas Chromatography and Gas Chromatography-Mass Spectrometry for Biochemical Diagnosis of Inherited Metabolic Disorders

Paik Man-Jeong°, Lee Yoon-Suk, Lee Hong-Jin, Kim Sook-Za, Kim Kyoung-Rae

1College of Pharmacy, Sungkyunkwan University, 2 Kyonggi Pharmaceutical Research Center, 3 Hallym University Hospital, 4 Korea Genetic Research Center