

In connection with the asymmetric synthesis of chiral 1,2-diol, we report here the total synthesis of (+)-frontalin using diastereoselective alkylation featuring tridentate chelation-controlled asymmetric alkylation of  $\alpha$ -hydroxyketone, in which the chiral auxiliary is attached to the hydroxyl group as ether linkage. The starting D-glyceraldehyde acetonide was converted (S)-[(4R)-2,2-dimethyl-1,3-dioxolan-4-yl](4-methoxyphenyl) methanol. Then, the methanol was successively transformed to frontalin in 3 steps *via* alkylation, ozonolysis and deprotection.

[PD1-21] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

#### Lead Discovery and Optimization towards FXR Specific Compounds

Jeon Raok<sup>O</sup>

College of Pharmacy, Sookmyung Women's University

FXR (farnesoid X-activated receptor) is a member of nuclear steroid hormone receptor superfamily and especially a orphan receptor, which are able to control mevalonate pathway upon activation by binding of the specific ligands. We have launched our study for development of FXR specific ligands getting on in lead discovery. A promising lead, stilbene analog was obtained through the screening of a set of library compounds, which was previously targeted for other nuclear receptors. And then synthetic modification of the lead was performed. In addition, fishing a new pharmacophore was tried by UNITY search, which brought new structural features.

[PD1-22] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

#### The first synthesis of 4' $\alpha$ -C aryl branched carbocyclic nucleosides

Xu XiangShu<sup>O</sup>, Ko OkHyun, Hong JoonHee\*

College of Pharmacy, Chosun University, Kwangju 501-759, Korea

Recently, several branched-nucleosides have been synthesized and evaluated as potent antitumor or antiviral agents. Among them, 4' $\alpha$ -C-ethenyl and 4' $\alpha$ -C-ethynyl nucleosides which having an additional double or triple bond at 4'-position were reported to be as potent antiviral and antitumor activities. Encouraged by these interesting structures and antiviral activities, it was determined to synthesize novel classes of nucleosides comprising branched carbocyclic nucleosides with an additional aryl group at 4' $\alpha$ -position using versatile reiterative three-step sequences from simple acyclic precursor '2-hydroxyacetophenone'. Our efforts toward the synthesis of novel nucleosides analogues are reported herein.

[PD1-23] [ 10/17/2002 (Thr) 09:30 - 12:30 / Hall C ]

#### Synthesis and Characterization of Polyamines and Their Metal Complexes

Jang GyuHwan<sup>O</sup>, Kim Yang, Lee ManKil

고신대학교 화학과

The polyamine pathway represents a logical target for chemotherapeutic intervention, since depletion of polyamines results in the disruption of a variety of cellular functions, and may in specific cases result in cytotoxicity. Polyamine interaction with DNA has also long been thought to be an important function of the natural polyamines and as more is learned about the specific interactions and the resultant conformational changes which can be influenced by the polyamine binding to DNA the potential for regional and gene-specific changes are becoming more evident. We have prepared the elaborate polyamines by the reaction of simpler polyamines with polyalkylating agents. Synthesized polyamines were separated and purified by metal complex formation and ion-exchange chromatography. They were characterized by X-ray crystal structure determinations of their metal complexes.