Inhibitory effects of synthetic 2-hydroxychalcone derivatives on rat lens aldose reductase(RLAR) and on platelet aggregation were investigated for the prevention or the treatment of chronic diabetic complications.
5-chloro-4,2-dihydroxychalcone and 5-chloro-3,2-dihydroxychalcone exhibited a potent inhibitory effects on rat platelet aggregation induced by ADP(IC_{50}=0.10 and 0.06 mg/ml, respectively.) and collagen(IC_{50}=44 and 16 μg/ml, respectively.) but showed relatively weak inhibitory activities on RLAR. 2,4,2,4-Tetrahydroxychalcone, 3,4,2,4-tetrahydroxychacone, 5-chloro-2,4,2-trihydroxychalcone and 5-chloro-3,4,2-trihydroxychalcone possessing o-dihydroxy or m-dihydroxy moiety exhibited relatively potent inhibitory activities in both systems.

[PD1-3] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Stereoslective trans-oxazoline formation via Pd(0)-catalyzed cyclization of isopropenyl acetate.

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Palladium(0)-catalyzed intramolecular cyclization of benzamide via p-allylpalladium complex is useful tool for the synthesis of highly functionalized compounds. Ongoing program for the formal total synthesis of (+)-lactacystin, which is remarkably selective and potent inhibitor of the 20S proteasome, we applied the newly developed Pd(0)-catalyzed cyclization reaction to the highly stereoselective synthesis of trans-oxazoline, which is key intermediate of (+)-lactacystin. The requisite cyclization precursor, isopropenyl acetate, was straightforwardly prepared from the L-serine by a seven-step sequences (overall 61%).

[PD1-4] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Synthesis and In vitro evaluation indandione-2-carboxamides.

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6-(2-Dimethylaminoethylamino)-3-hydroxyindeno[2,1-c]quinoline-7-one (TAS-103) is a dual topoisomerase I and II inhibitor with preclinical efficacy in a broad spectrum of tumors and in multidrug-resistant tumor cell lines. It is currently in Phase I clinical trials in the U.S. It could be useful as a lead compound for development of new drugs.
In this study, we presented the synthesis and cytotoxicity of indandione-2-carboxamides. These were designed as an open form of tetracyclic TAS-103. The cytotoxicities of TAS-103 analogs against various tumor cell lines were worse than that of Doxorubicin and Mitomycin-C. The compounds containing methyl substituents were more potent than other compounds in this result

[PD1-5] [10/20/2000 (Fri) 11:30 - 12:30 / [Hall B]]

Synthesis and Structure Activity Relationships of a series of 7-acylamino-3-(isoxazolylmethylthio)-3-cephem exhibiting activity against MRSA.

Chang KY, Kim SH, Nam GS, Seo JH, Kim JH, Ha DC