

# Development of efficient method for construction of medium-sized heterocycles based on endo mode cyclization

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# 2003 Fiscal Year Final Research Report Summary

## Development of efficient method for construction of medium-sized heterocycles based on endo mode cyclization

Research Project

### Project/Area Number

14571998

### Research Category

Grant-in-Aid for Scientific Research (C)

### Allocation Type

Single-year Grants

### Section

一般

### Research Field

Chemical pharmacy

### Research Institution

KANAZAWA UNIVERSITY

### Principal Investigator

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### Project Period (FY)

2002 – 2003

### Keywords

endo mode cyclization / medium-sized ring / oxygen-containing heterocycle / nitrogen-containing heterocycle / phenylsulfonyl group / active methane group / phenylsulfinyl group / Baldwin rules

### Research Abstract

The base-catalyzed the endo mode ring-closing reaction of 1-allenyl sulfoxides having a suitable alkyl side chain with the terminal oxygen atom proceed as to afford the corresponding 5~7-membered oxacycles. Changing the sulfinyl group of the allenes to this sulfonyl group brought some improvement resulting in the formation of 5~8-membered oxacycles. This novel endo mode ring-closing reaction of allenes was applied to the congeners possessing the terminal nitrogen functionality and active methane group to give the corresponding cyclized products in acceptable yields. Thus, this method was demonstrated to be applicable to various kinds of allenes.

## Research Products (6 results)

All Other

All Publications (6 results)

[Publications] Chisato Mukai, Haruhisa Yamashita, Miyoji Hanaoka: "A New Entry to Oxacycles via Base-Catalyzed Endo Mode Cyclization of Allenyl Sulfoxides and Sulfones"Organic Letters. 3. 3385-3387 (2001) ▼

[Publications] Chisato Mukai, Rie Ukon, Norikazu Kuroda: "A new entry to carbocycles : synthesis of cyclopentene and cyclohexene derivatives through endo-mode ring closure of allenyl sulfones"Tetrahedron Letters. 44. 1583-1586 (2003) ▼

[Publications] Chisato Mukai, Minoru Kobayashi, Shoko Kubota, Shinji Kitagaki: "Construction of Azacycles Based on Endo Mode Cyclization of Allenes"The Journal of Organic Chemistry. 69(in press). (2004) ▼

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