

New Aspect on the Chemistry of Allenes

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2006 Fiscal Year Final Research Report Summary

New Aspect on the Chemistry of Allenes

Research Project

Project/Area Number

16390005

Research Category

Grant-in-Aid for Scientific Research (B)

Allocation Type

Single-year Grants

Section

一般

Research Field

Chemical pharmacy

Research Institution

Kanazawa University

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Project Period (FY)

2004 – 2006

Keywords

allenes / endo-mode cyclization / Pauson-Khand reaction / indoles / indole-2,3-quinodimethane / Hetero-Pauson-Khand reaction / bisallenenes / 2,3-quinodimethanes

Research Abstract

This program has been directed toward development of efficient and novel reactions based on the inherent property of allenes, in particular, the allene possessing an electron-withdrawing group such as a phenylsulfonyl group. As a result, the following several reactions could be developed.

(1) Treatment of 1-phenylsulfonyllallene with a proper (co-hydroxy) alkyl side chain at the C₃-position with a base afforded the corresponding oxacycles through the endo-mode cyclization process. This novel ring-closing reaction could be applied for the construction of five-to nine-membered oxacycles. The aza-congeners as well as carbocycles were also found to be prepared according to the standard conditions, thus developed. The sulfoxide, phosphine oxide, phosphonate, and ester functionalities were used as an electron-withdrawing group instead a sulfonyl moiety. Furthermore, allenylaniline derivatives provided the corresponding 2,3-disubstituted indoles in an endo-mode ring-closing manner. The allenyla ... More

Research Products (23 results)

All	2007	2006	2005	2004
All	Journal Article (23 results)			

[Journal Article] Studies of Ring-closing Mode of 4-Hydroxy-2-vinylidenebutanoates : 5- Exo-trig versus 5-Endo-dig.	2007 ▾
[Journal Article] Studies of Ring-closing Mode of 4-Hydroxy-2-vinylidenebutanoates : 5-Exo-trig versus 5-Endo-dig	2007 ▾
[Journal Article] Reaction of Ene-bis(phosphinylallenes) : [2+2] versus [4+2] Cycloaddition.	2006 ▾
[Journal Article] Intermolecular [4+2] Cycloaddition of o-Quinodimethanes Derived from Ene-bis(sulfinylallenes).	2006 ▾
[Journal Article] Grubbs Catalyst-mediated Cycloisomerization of Allenenes.	2006 ▾
[Journal Article] A Novel Generation of Indole-2,3-quinodimethanes.	2006 ▾
[Journal Article] Rhodium(I)-Catalyzed Intramolecular Pauson-Khand-Type [2 + 2 + 1] Cycloaddition of Allenenes.	2006 ▾
[Journal Article] Synthesis of Naphtho[b]cyclobutenes from 1,2-Bis(3-propynol)benzenes.	2006 ▾
[Journal Article] Co ₂ (CO) ₈ -catalyzed Intramolecular Hetero-Pauson-Khand Reaction of Alkynecarbodiimide : Synthesis of (±)-Physostigmine.	2006 ▾
[Journal Article] Sequential Pericyclic Reaction of Ene-diallenes : An Efficient Approach to the Steroid Skeleton.	2006 ▾
[Journal Article] Reaction of Ene-bis(phosphinylallenes) : [2+2] versus [4+2] Cycloaddition	2006 ▾
[Journal Article] Shinji Kitagaki	2006 ▾
[Journal Article] Chisato Mukai	2006 ▾
[Journal Article] Norikazu Kuroda	2006 ▾
[Journal Article] Fuyuhiko Inagaki	2006 ▾
[Journal Article] A New Entry to the Synthesis of 2,3-Disubstituted Indoles.	2005 ▾
[Journal Article] Rh(I)-catalyzed Allenic Pauson-Khand Reaction : First Construction of the Bicyclo[6.3.0]undecadienone Ring System.	2005 ▾
[Journal Article] Rh(I)-catalyzed Pauson-Khand Reaction and Cycloisomerization of Allenynes : Selective Preparation of Monocyclic, Bicyclo[m.3.0], and Bicyclo[5.2.0] Ring Systems.	2005 ▾
[Journal Article] Preparation of Carbocycles via Base-catalyzed Endo-mode Cyclization of Allenes.	2005 ▾
[Journal Article] Total Syntheses of Naturally Occurring Diacetylenic Spiroacetal Enol Ethers.	2005 ▾

[Journal Article] Base-catalyzed Endo-mode Cyclization of Allenes : Easy Preparation of Five- to Nine-membered Oxacycles. 2004 ▾

[Journal Article] Rh(I)-catalyzed Ring-closing Reaction of Allenynes : Selective Construction of Cycloheptene, Bicyclo[5.3.0]decadienone, and bicyclo[5.2.0]nonene Frameworks. 2004 ▾

[Journal Article] Construction of Azacycles Based on Endo-mode Cyclization of Allenes. 2004 ▾

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