

Development of Novel Antiinflammatory Drugs Based on Nonproteinaceous Signal Molecules

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1998 Fiscal Year Final Research Report Summary

Development of Novel Antiinflammatory Drugs Based on Nonproteinaceous Signal Molecules

Research Project

Project/Area Number

09672277

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

医薬分子機能学

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

1997 - 1998

Keywords

nonproteinaceous low molecular / elicitor / secosyrin / syributin / syringolide / total synthesis

Research Abstract

In 1993 syringolides 1 and 2, novel nonproteinaceous low molecular weight metabolites possessing the ability of eliciting a hypersensitive reaction in soybean plants, were isolated from *Pseudomonas syringae* pv. tomato. The related compounds, secosyrins 1 and 2, and syributins 1 and 2 have also been isolated. We tried to synthesize these bioactive compounds and several their derivatives hoping to develop the further useful compounds having stronger antiinflammatory activity. Thus, D-tartrate was taken as a starting material, which was converted to the tetrahydrofuran derivative. This compound was then transformed into the corresponding dioxaspiro one, from which the first total synthesis of (+)-secosyrins 1 and 2 was accomplished. This total

synthesis of secosyrins 1 and 2 unambiguously established their absolute stereochemistry. We also could develop an efficient alternative way for the preparation of (+)-syributins 1 and 2. Based on the result so far obtained, we are now trying to synthesize more complex syringolides 1 and 2.

Research Products (4 results)

All Other

All Publications (4 results)

[Publications] Chisato Mukai: "Total Synthesis of (+)-Secosyrins 1 and 2 and (+)-syributins 1 and 2" J.Org.Chem.62. 8095-8103 (1997) 

[Publications] Chisato Mukai: "First Total Synthesis of (+)-Secosyrin 1" Tetrahedron Letters. 38. 2511-2512 (1997) 

[Publications] Chisato Mukai: "Total synthesis of (+)-Secosyrins 1 and 2 and (+)-Syributins 1 and 2" J.Org.Chem.62. 8095-8103 (1997) 

[Publications] Chisato Mukai: "First Total Synthesis of (+)-Secosyrin 1." Tetrahedron Letters. 38. 2511-2512 (1997) 

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