Title	A new synthesis of cyclic α-amino acids
Sub Title	
Author	柳沢, 宏明(Yanagisawa, Hiroaki)
Publisher	慶応義塾大学藤原記念工学部
Publication year	1965
Jtitle	Proceedings of the Fujihara Memorial Faculty of Engineering Keio University (慶応義塾大学藤原記念工学部研究報告). Vol.18, No.71 (1965.) ,p.118(54)- 118(54)
JaLC DOI	
Abstract	
Notes	Summaries of Doctor and Master Theses Master of Engineering, 1965 Applied Chemistry
Genre	Departmental Bulletin Paper
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001004-00180071-0054

A New Synthesis of Cyclic α-Amino Acids

Hiroaki YANAGISAWA*

Cyclic α-amino acids were previously prepared from the corresponding cyclic ketones by Strecker synthesis or Bucherer-hydantoin synthesis.

A new synthesis of cyclic α-amino acids from α,β-unsaturated α-nitroesters has been explored. It has been found that the Diels-Alder reaction between α,β-unsaturated nitroesters and dienes forms the cyclic α-nitroesters which were led to cyclic α-amino acids by reduction followed by hydrolysis.

Ethyl α-nitrocrotonate (I), ethyl 2-nitro-5-methyl-2-hexenoate (II) and ethyl α-nitrocinnamate (III) were used as the dienophiles; cyclopentadiene and butadiene were used as the dienes. From these compounds, 2-amino-3-methylbicyclo [2. 2. 1]-heptane-2-carboxylic acid (IV), 1-amino-2-methylcyclohexane-1-carboxylic acid (V), 2-amino-3-isobutylbicyclo [2. 2. 1] heptane-2-carboxylic acid (VI) and 2-amino-3-phenylbicyclo [2. 2. 1] heptane-2 carboxylic acid (VII) were prepared in this paper. The Diels-Alder reaction of (I) with furan gave only a small quantity of ethyl 1-nitro-2-methyl-3,6-endoxo-Δ^4-tetrahydrobenzoate (VIII).

It has been proved, by chemical method, gas chromatography and n. m. r. spectral study, that these diene synthesis products were the mixtures of the diastereomers.

*柳 沢 宏 明