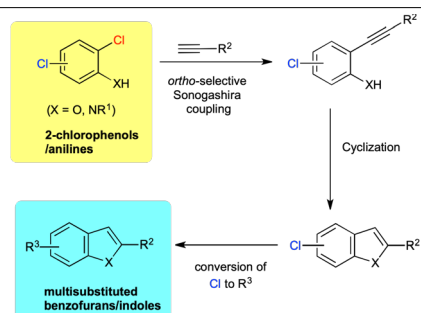


■ ANNOUNCEMENT

- 1 Heterocycles Award
HETEROCYCLES Announcement

■ REVIEWS

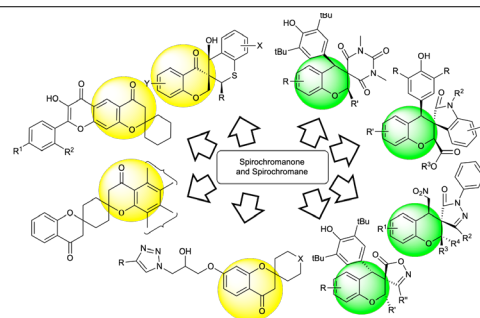
- 3 **Synthesis of Multisubstituted Benzofurans/Indoles Using Multichlorinated Phenols/Anilines via Palladium-Catalyzed Site-Selective Sonogashira Coupling**
Miyuki Yamaguchi and Kei Manabe*



Indole Benzofuran Palladium Sonogashira Coupling Site-Selective Reaction

- 27 **Recent Progress on Synthesis of Spirochromanone and Spirochromane Derivatives**

S. Chakroborty,* P. Panda, S. C. Ramírez-López, M. A. Garcia Eleno, E. C. Yañez, L. Streckowski, and M. V. B. Unnamatla*

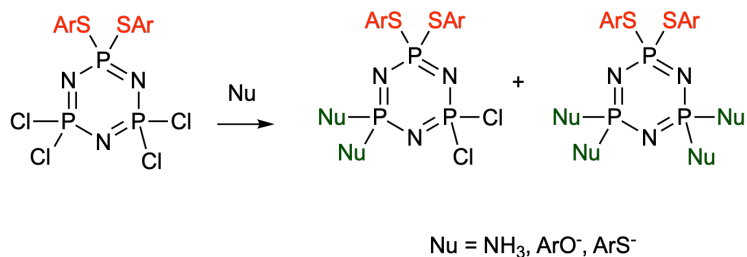


Heterocycle Spirochromanone Spirochromane

■ PAPERS

69 Nucleophilic Substitution of 2,2-Bis(arylthio)-4,4,6,6-tetrachlorocyclotriphosphazene with Ammonia, Phenoxide, and Thiophenoxide

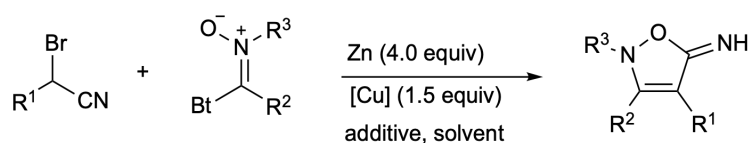
Manabu Kuroboshi,* Ayako Ueno, Ayane Kawano, and Hideo Tanaka



2,2-Bis(arylthio)-4,4,6,6-tetrachlorocyclotriphosphazene Nucleophilic Substitution Ammonia Phenoxide Thiophenoxide

85 Synthesis and Reactivity of Novel 5-Imino-1,2-oxazole

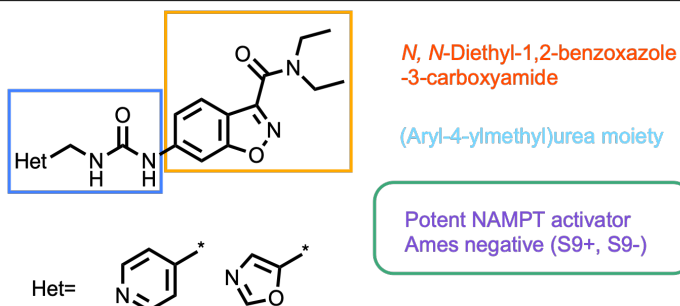
Khalid Widyan*



5-Imino-1,2-oxazole 1,2-Oxazol-5-one C-Benzotriazolated Nitrene Reformatsky Reaction One-Pot Synthesis

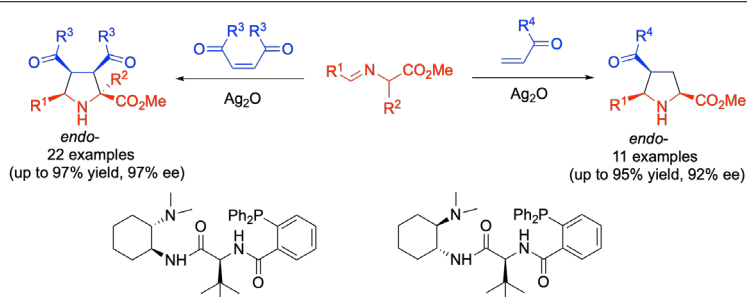
94 Optimization of NAMPT (Nicotinamide Phosphoribosyltransferase) Activators: Discovery of *N,N*-Diethyl-1,2-benzoxazole-3-carboxamide Derivatives as Potent NAMPT Activators with Mitigated Mutagenic Risks

Mayuko Akiu,* Takashi Tsuji, Yoshitaka Sogawa, Koji Terayama, Mika Yokoyama, Daigo Asano, Tomohiro Honda, Tomomichi Ishizaka, Tomoko Hasegawa, Anthony B. Pinkerton, and Tsuyoshi Nakamura


 NAMPT Activator NAD⁺ Mutagenicity Ames Test

123 Chiral 1,2-Diaminocyclohexane- α -Amino Acid-Derived Amidphos/Ag(I)-Catalyzed Divergent Enantioselective 1,3-Dipolar Cycloaddition of Azomethine Ylides

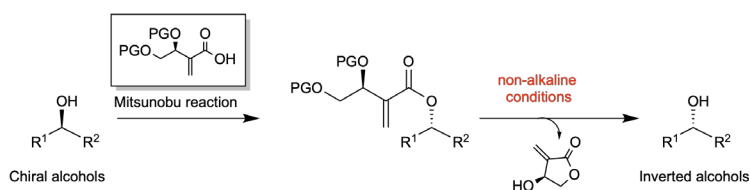
Haifei Wang, Chuliang Gong, Zhipeng Zhou, Qingxia Zhou, Youshi Liu,* and Jie Luo*



1,2-Diaminocyclohexane Amidophosphane 1,3-Dipolar Cycloaddition Azomethine Ylide Pyrrolidine

140 A New Template of Mitsunobu Acylate Cleavable in Non-Alkaline Conditions

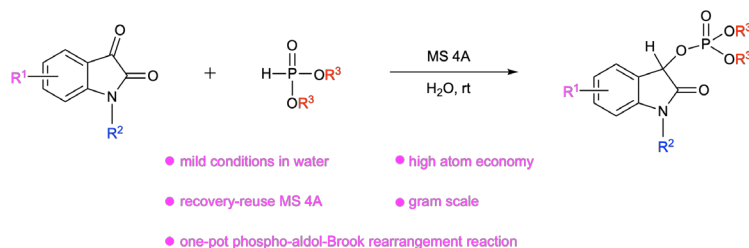
Yoshimichi Sakakibara, Yusuke Sai, Yasumitsu Uraki, Makoto Ubukata, and Kengo Shigetomi*



Mitsunobu Reaction Tuliposide B 3,4-Dihydroxy-2-methylenebutanoate Lactonization

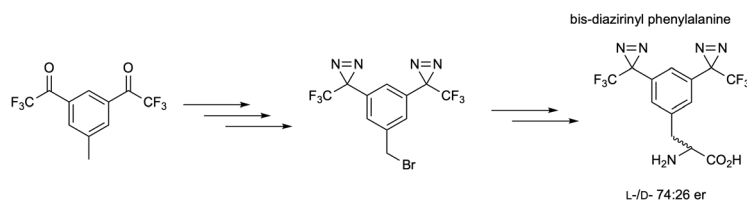
■ SHORT PAPERS

- 159 MS 4A-Promoted Aqueous Phospho-Aldol-Brook Rearrangement Reaction of Isatins**
Fan Liu, Wei Han* and Takeshi Oriyama*



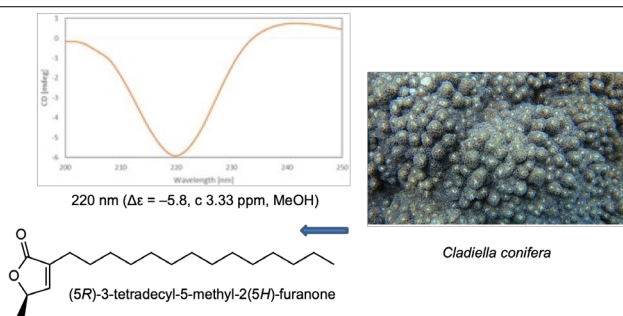
Phospho-Aldol-Brook Rearrangement Reaction MS 4A Isatin

- 167 Design and Synthesis of 1,3-Bis(3-(trifluoromethyl)-diazirin-3-yl)phenylalanine for Efficient Photo-Cross-Linking**
Yuta Murai,* Takuma Yoshida, Zetryana Puteri Tachrim, and Makoto Hashimoto*



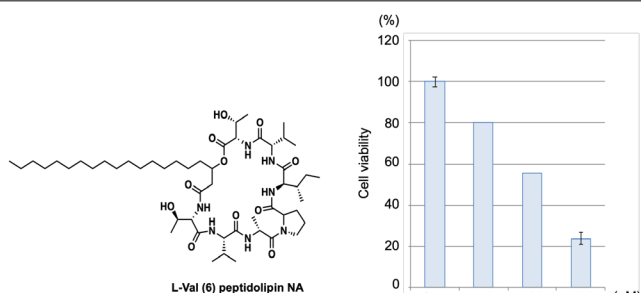
Photoaffinity Labeling Bis-diazirine α -Amino Acid Phenylalanine

- 178 A New Natural Butenolide, (5R)-3-Tetradecyl-5-methyl-2(5H)-furanone, from Octocoral *Cladiella conifera***
Jhao-Syuan Zeng, Shun-Hua Chen, Yi-Hao Lo, Nan-Fu Chen, Zhi-Hong Wen, Jih-Jung Chen, Chia-Ching Liaw,* and Ping-Jyun Sung*



Butenolide Octocoral *Cladiella conifera* COX-2

- 185 Isolation of Peptidolipin NA Derivatives from the Culture of *Nocardia arthritidis* IFM10035^T in the Presence of Mouse Macrophage Cells**
Yasumasa Hara,* Daiki Tanimura, Teruhisa Manome, Midori A. Arai, Takashi Yaguchi, and Masami Ishibashi*



Nocardia arthritidis Peptidolipin NA Derivative Co-culture Cytotoxicity TRAIL Resistance Overcoming Activity

■ TOTAL SYNTHESIS OF HETEROCYCLIC NATURAL PRODUCTS

- 191 Polyketides
 - 192 Aromatics
 - 193 Terpenes
 - 194 Alkaloids
 - 198 Miscellaneous
-

■ BRUSH UP YOUR HETEROCYCLES

- 201 Brush Up Your Heterocycles
-
-

Contributors To This Issue

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