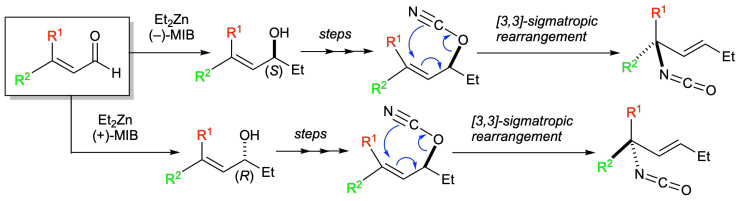
■ REVIEWS

■ COMMUNICATION

■ PAPERS

649 **Stereocontrolled Synthesis of Nitrogen-Substituted Quaternary Stereogenic Centers: Lessons from a Synthetic Route to the Core Structure of Sphingofungin E**

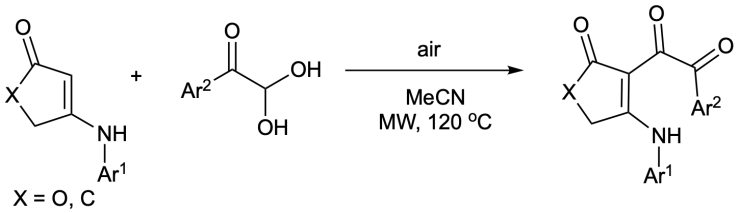
Yoshiyasu Ichikawa,* Takahiro Kinutani, Yoshimine Sakogawa, Keisuke Nakanishi, Rika Ochi, Seijiro Hosokawa, and Toshiya Masuda



Quaternary Stereogenic Center Rearrangement Allyl Cyanate Sphingofungin E Enantioselective Addition of Diethylzinc

664 **Synthesis of 1,2-Dicarbonyls from Five-Membered Cyclic Enamines and Arylglyoxal Hydrates under Metal-Free Conditions**

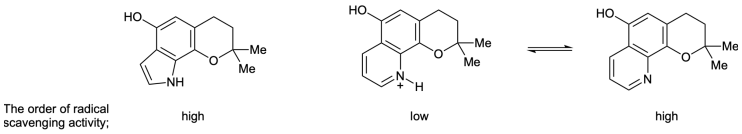
Wei Fan*



1,2-Dicarbonylation Metal-Free Condition Five-Membered Cyclic Enamine

680 **Synthesis and Radical Scavenging Activities of Tocopherol Analogs Containing Heterocyclic Rings**

Yuta Okayama,* Masataka Mochizuki, and Keiko Inami*

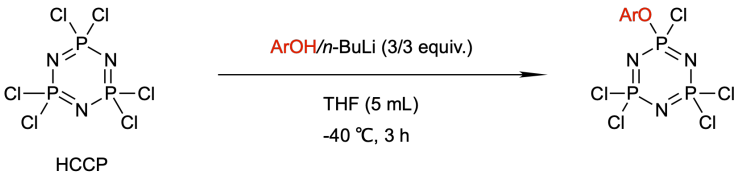


Tocopherol Analog Radical Scavenging Activity Quinoline Indole Benzimidazole

■ SHORT PAPERS

695 **Synthesis of 2-Aryloxy-2,4,4,6,6-pentachlorocyclotriphosphazenes ($N_3P_3Cl_5(OAr)$): Monoaryloxylatioin of Hexachlorocyclotriphosphazene ($N_3P_3Cl_6$) and Mass Spectra of Chlorocyclotriphosphazene Derivatives. Difference between EI vs. ESI Methods**

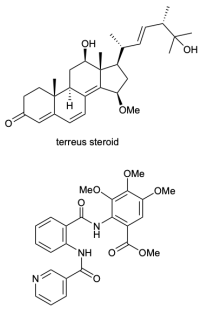
Manabu Kuroboshi,* Ryota Takahashi, and Hideo Tanaka

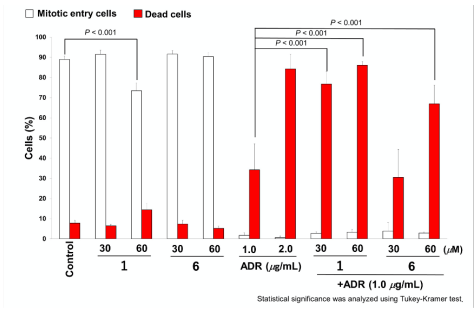


Cyclotriphosphazene Nucleophilic Substitution Mono-aryloxylation Mass Spectra

707 **Chemical Structures and Cell Death Inducing Activities of the Metabolites of *Aspergillus terreus***

Takahiro Matsumoto,* Masaya Okayama, Hayato Yoshikawa, Shifu Maeda, Takahiro Kitagawa, and Tetsushi Watanabe*

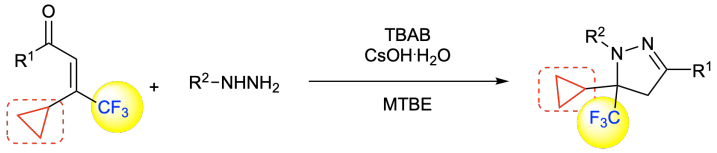




Aspergillus terreus Terreus Steroid Adriamycin HeLa Cell Time-Lapse Cell Imaging

716 **A Convenient Synthesis of 5-Trifluoromethyl-5-cyclopropyl-Substituted Pyrazolines**

Yong-Bin Xie, Xiao-Dong Liu, Ming-Xu Zhang, Wen-Bo Chen,* Chun-Hui Xing,* and Long Lu*



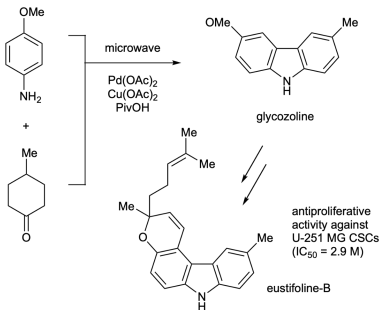
- easily accessible
- mild reaction conditions
- broad substrates scope
- good functional group tolerance

25 examples
up to 93% yield

Pyrazoline Trifluoromethyl Cyclopropyl

725 **One-Pot Synthesis of Carbazoles by a Domino Reaction Using Microwave Heating and Antiproliferative Activities of Constituents from *Murraya* Plants Against Cancer Stem Cells**

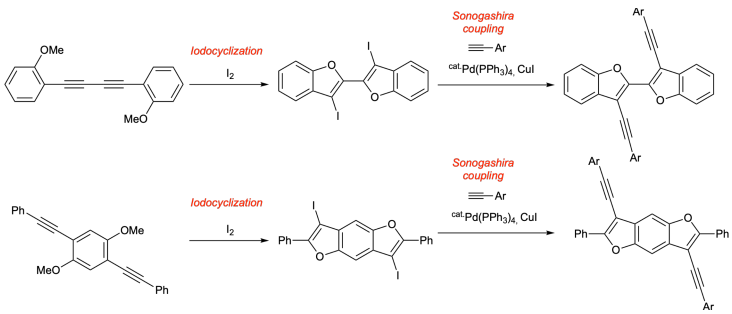
Kouta Ugawa, Momona Nakao, Chikako Sawada, Takahiro Matsumoto, Takahiro Kitagawa, Yutaro Ohki, Kousuke Araki, and Seikou Nakamura*



Carbazole *Murraya koenigii* Microwave Cancer Stem Cell Human Astrocytoma U-251 MG Cell

734 **Synthesis and Photophysical Properties of Diethynylated Bibenzofuran and Benzodifuran Derivatives**

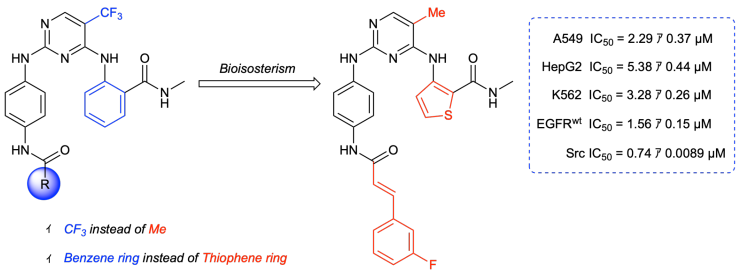
Takaya Hibino and Rui Umeda*



2,2'-Bibenzofuran Benzodifuran Iodocyclization Sonogashira Coupling

742 **Synthesis and Biological Evaluation of 5-Methylpyrimidine Derivatives as Dual Inhibitors of EGFR and Src for Cancer Treatment**

Yaqing Zuo, Kehui Chen, Ying Xu, Yi Le, and Longjia Yan*



Synthesis EGFR Src Dual Inhibitor Pyrimidine

■ TOTAL SYNTHESIS OF HETEROCYCLIC NATURAL PRODUCTS

■ BRUSH UP YOUR HETEROCYCLES

Contributors To This Issue