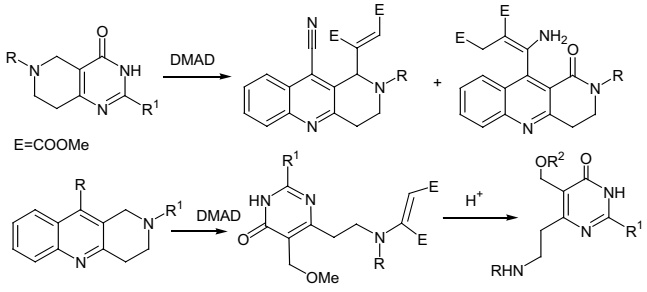
ELSEVIER

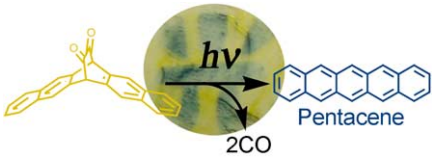
Tetrahedron Letters

Tetrahedron Letters Vol. 46, No. 12, 2005

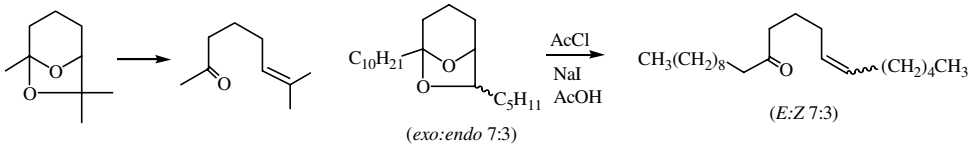
Contents

COMMUNICATIONS

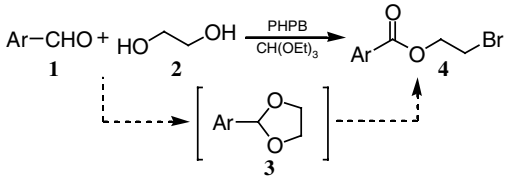


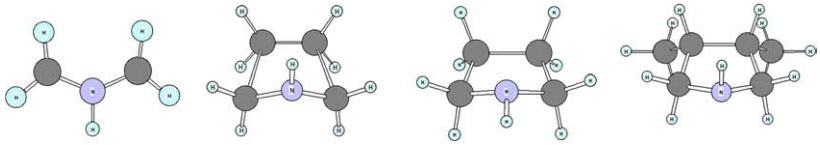


6,13-Dihydro-6,13-ethanopentacene-15,16-dione decomposed to pentacene by irradiation of light.

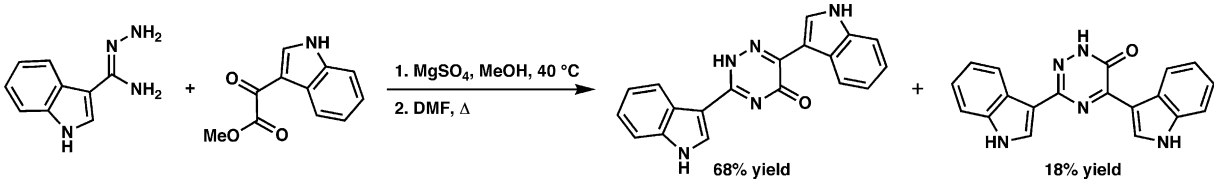


(*exo:endo* 7:3) (*E:Z* 7:3)

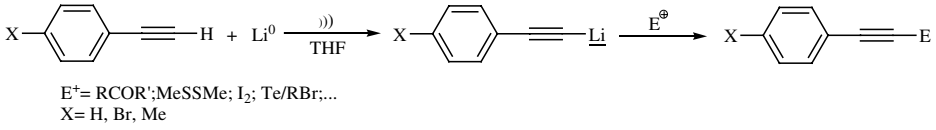


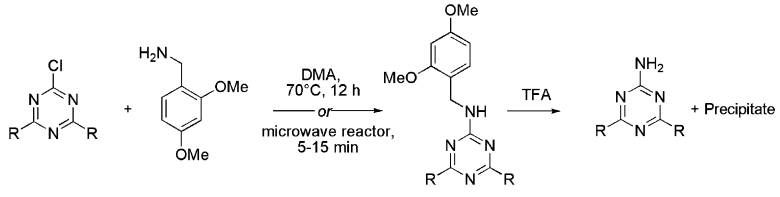


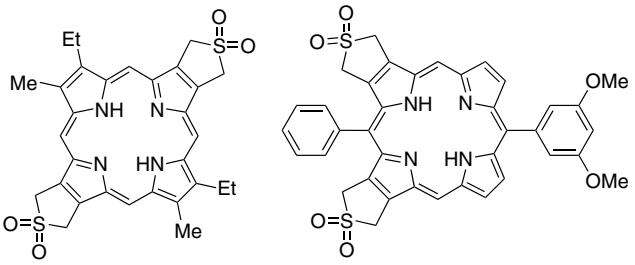
The cycloaddition reactions of azomethine ylide with ethene, (*Z*)-2-butene, and (*E*)-2-butene to afford azacyclopentanes (pyrrolidines) proceed via a synchronous concerted $\pi_s^4 + \pi_s^2$ mechanism.



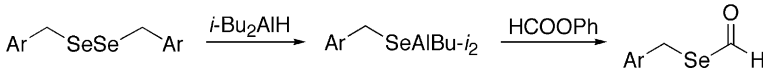
A facile method for the synthesis of *para*- and *meta*-substituted bis(indole)-1,2,4-triazinones is presented. Our approach to access these triazinones involves a cyclocondensation reaction between amidrazone and ketoester functionalities. The structures of these interesting compounds were established unambiguously by X-ray crystallography.

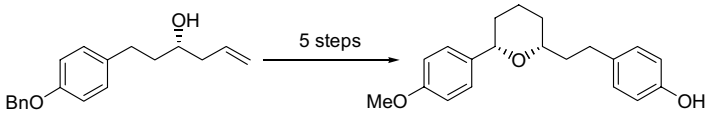




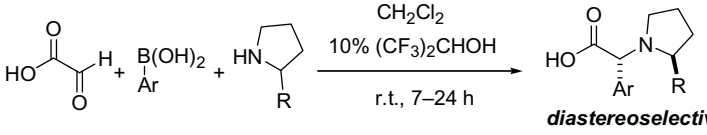


Methodology for synthesis of masked diene–porphyrins with opposite and adjacent sulfolenopyrrole units is described, along with typical Diels–Alder cycloadditions to give opposite and adjacent di-benzoporphyrins.

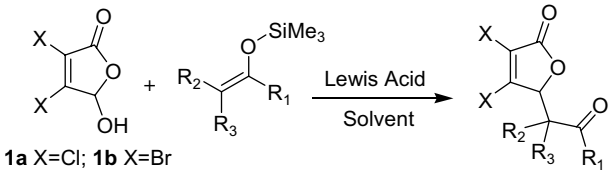




The antibiotic natural product (−)-centrolobine was synthesized utilizing only five steps with an overall 53% yield.

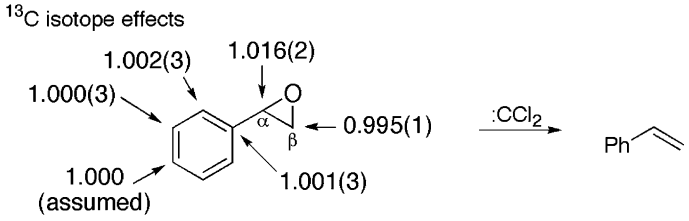


Pyrrolidine-derived arylglycines have been synthesized via a diastereoselective Petasis boronic acid Mannich reaction. Use of hexafluoroisopropanol as a co-solvent dramatically reduces reaction times, providing a practical room temperature process.

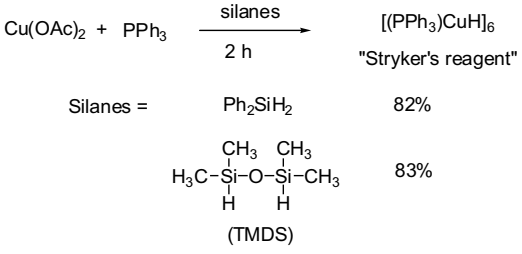


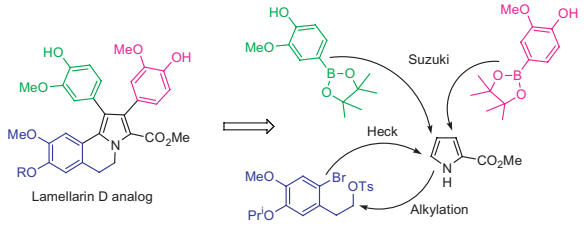
1a X=Cl; **1b** X=Br

The first Mukaiyama aldol type reaction on mucohalic acid (**1a/b**) has been achieved. Reaction of **1** with various ketene silyl acetals or silyl enol ethers in the presence of a Lewis acid provides the γ-substituted γ-butenolides in good to excellent yield.

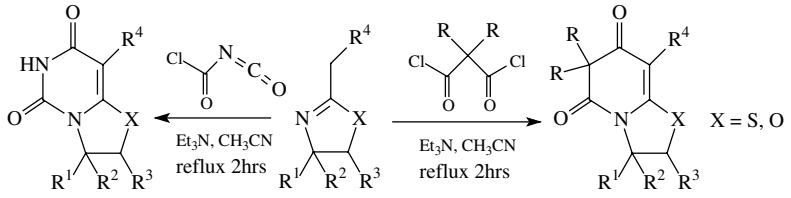


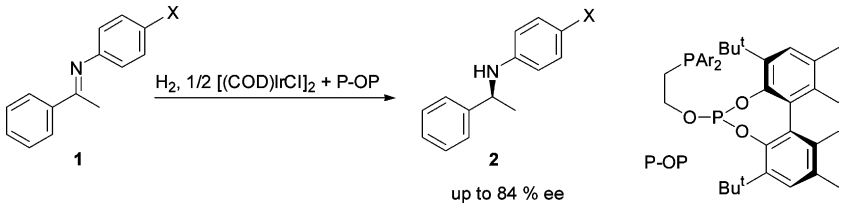
Isotope effects and theoretical calculations support a highly asynchronous deoxygentation, uninfluenced by transition state aromaticity.



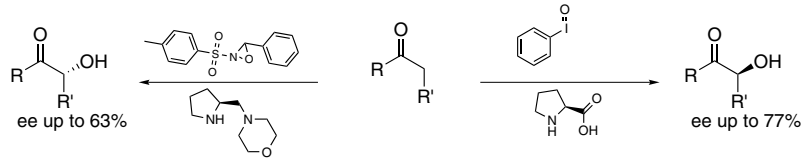


Efficient modular synthetic routes to open chain marine alkaloids such as analogues of lamellarins have been developed. 5,6-Dihydropyrrolo[2,1-*b*]isoquinoline scaffolds were prepared, and protocols enabling regioselective bromination followed by Suzuki cross-coupling were established for the introduction of aryl groups onto the 2- and 3-positions.

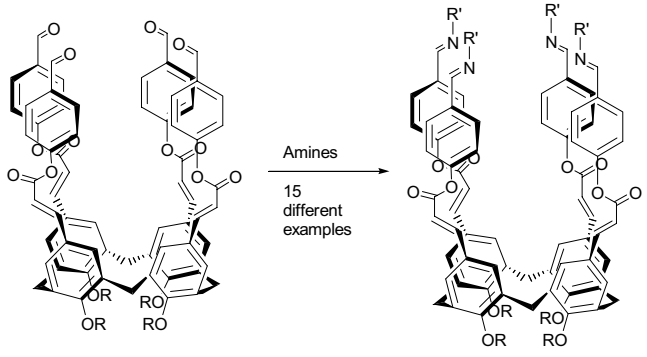


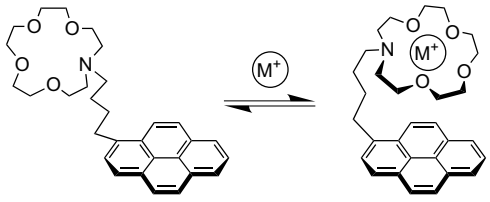


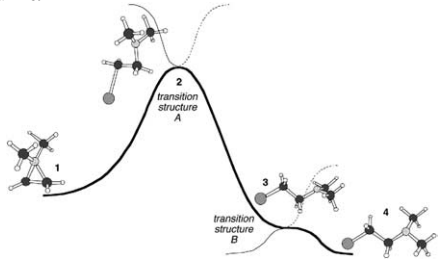
Chiral phosphine–phosphites provide an alternative class of ligands for the iridium catalyzed enantioselective hydrogenation of imines.



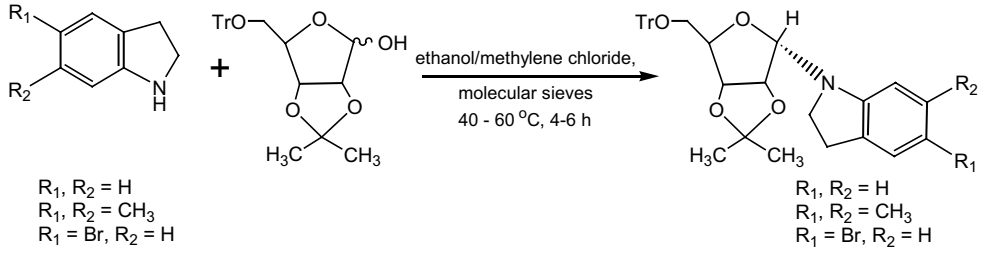
This paper reports the first synthesis of a number of deep cavity calix[4]arene macrocycles and illustrates their potential in the generation of static and dynamic combinatorial libraries based on reversible imine formation.

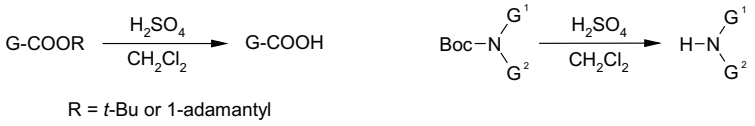




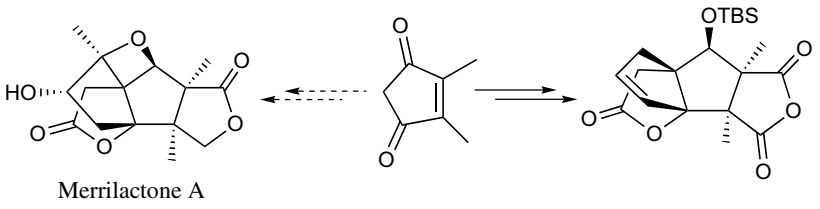


Most organic reactions go from a starting material to an intermediate or a product after crossing one transition state. We report calculations that show a simple ionic reaction, aziridinium ring opening, proceeds through sequential transition states without an intervening intermediate.

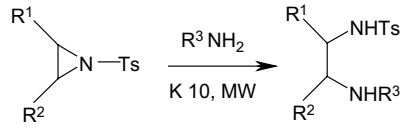




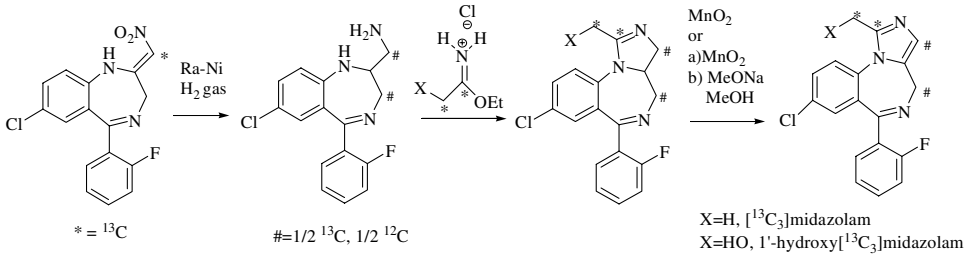
R = *t*-Bu or 1-adamantyl



Merrilactone A



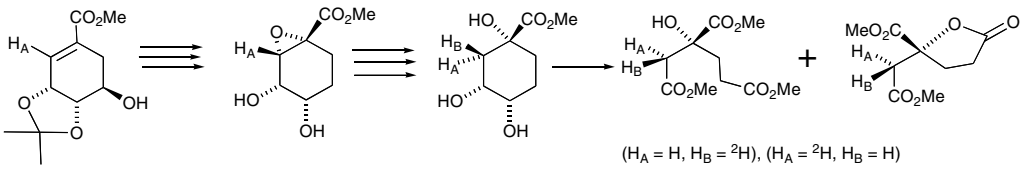
$R^1 = R^2 = R^3$ = aryl, alkyl



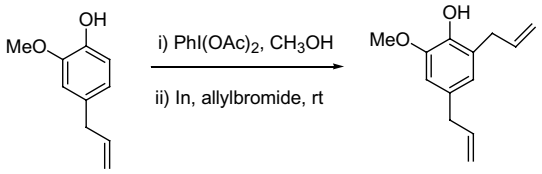
* = ^{13}C

#=1/2 ^{13}C, 1/2 ^{12}C

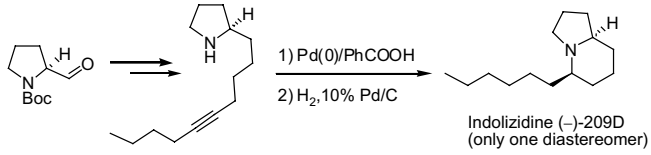
X=H, [$^{13}C_3$]midazolam
X=HO, 1'-hydroxy[$^{13}C_3$]midazolam

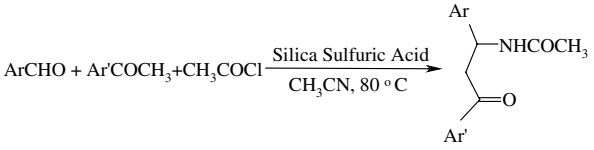


(H_A = H, H_B = ^2H), (H_A = ^2H, H_B = H)

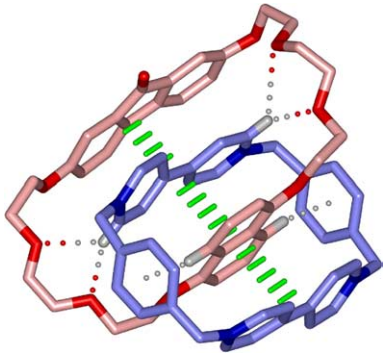


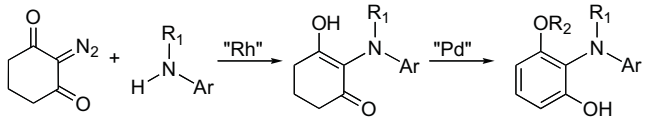
Phenols can be *ortho* allylated through a formal anti-Michael addition reaction of their quinol ethers or quinone monoketals with allylindium reagents at room temperature.

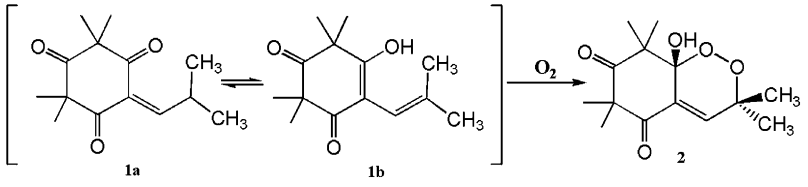




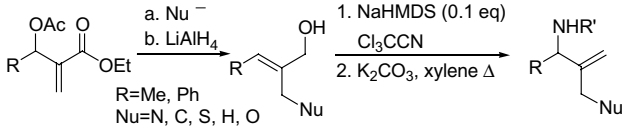
A new crownophane containing both 2,7-dioxyfluorenone and 1,5-dioxynaphthalene moieties bridged by triethylene glycol units has been synthesized and used as a highly efficient template for the preparation of the first fluorenone-containing [2]catenane incorporating a cyclobis(paraquat-*p*-phenylene) tetracation as a second macrocyclic component.

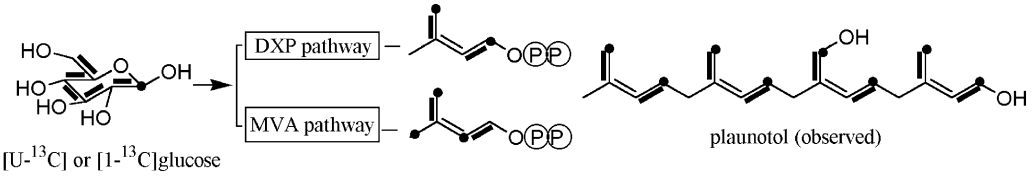


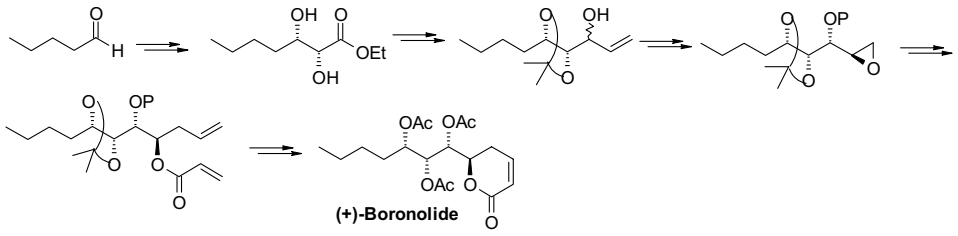


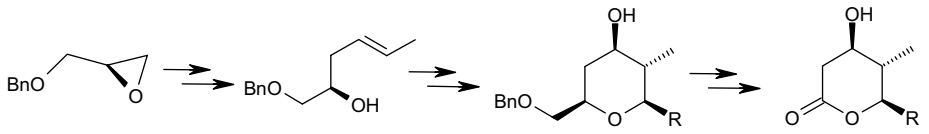


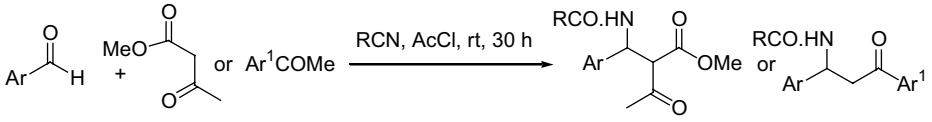
EPR/spin trapping experiments produce the first evidence for radical pathway in the spontaneous addition of O_2 on **1**.

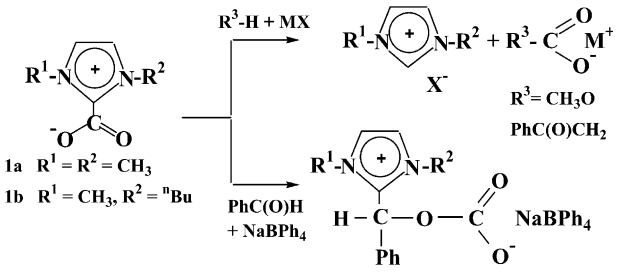


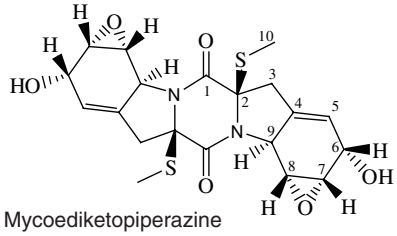


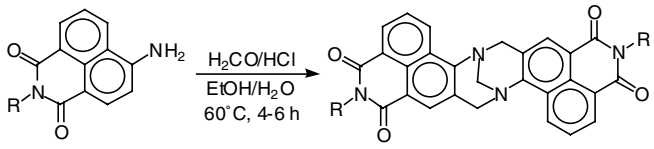


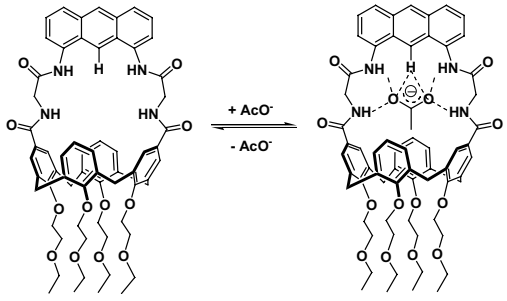


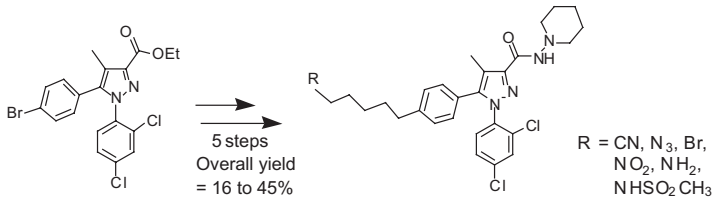


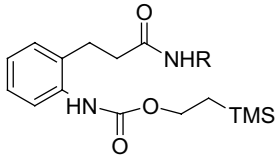












OTHER CONTENTS

*Corresponding author
ⓘ+ Supplementary data available via ScienceDirect

COVER

6,13-Dihydro-6,13-ethanopentacene-15,16-dione is proven to be an efficient photo precursor of pentacene. It gives pentacene efficiently both in solid and in solution by irradiation of light. The blue Chinese character 'light' in the yellow circle (diameter: ca. 3 cm) is created on a precursor-deposited glass by irradiation of light with a mask. *Tetrahedron Letters* **2005**, *46*, 1981–1983.

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