

九環性バッキーボウルの新規液相合成

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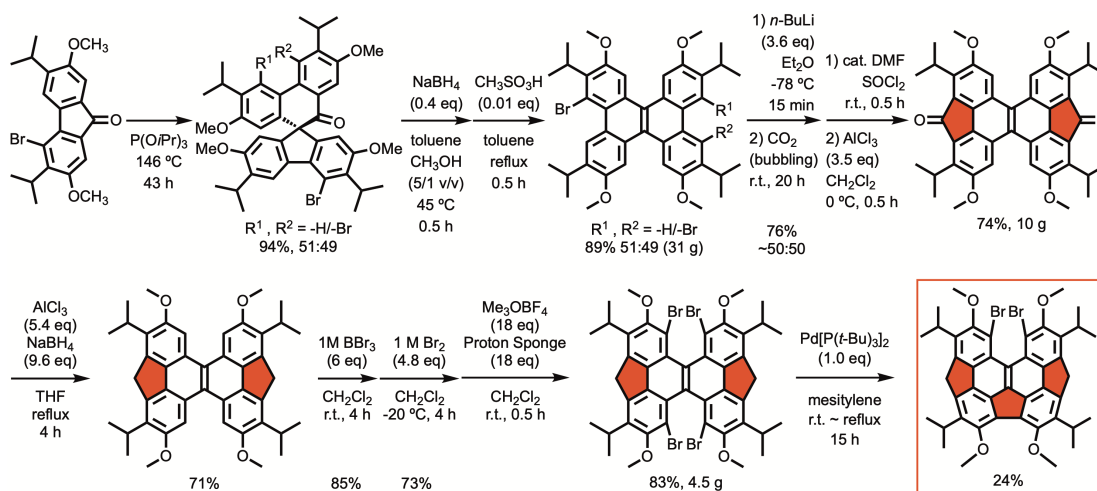
Solution-Compatible Synthesis of a Nona-Cycle Buckybowl (*Department of Materials Chemistry, Graduate School of Ryukoku University*)

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C₆₀-fragmentary bowl-shaped molecules, commonly referred to as “buckybowls”, are provocative compounds, and their inviting functions based on the non-planar π -conjugation are expected. Yet, achieving synthesis of some kinds of the curved structure remains challenging. Herein we report skeletal construction of a nona-cyclic buckybowl that is synthetically unachievable heretofore, namely, 3,10-dihydroindeno[7,1,2-*pqr*]-as-indaceno[3,2,1,8,7-*defghi*]chrysene. The key to success was solution-compatible process in which a multiple substituted dibenzo[*g,p*]chrysene is amenable to threefold formation of five-membered rings at its periphery. The resulting scheme here, coupled with the gently curved scaffold, offers a new insight into the solution phase synthesis of curved and twisted polyarenes.

Keywords : Buckybowl; Dibenzo[*g,p*]chrysene; Nona-Cycle; Five-Membered ring

九環性バッキーボウルの新規合成を、ジベンゾクリセン骨格を鍵原料に用いて達成した。第一に液相で取り扱い可能なジベンゾクリセンを用意し、次に2箇所のベイ領域に五員環を形成し、最後にコープ領域の閉環を試みて九環性構造を構築した。X線解析の結果からお椀構造とねじれ構造が共存している様子が認められ、POAV 値は3.0°と6.0°とスマネンやコランニュレンよりも小さい数値であることが明らかとなった。



1) N. Yoshida, T. Imai, T. Amaya, Y. Yamaoka, T. Iwasawa, *Eur. J. Org. Chem.* **2024**, 27, e202400881
 “Construction of Multiple Five-Membered Rings in Dibenzo[*g,p*]chrysene Core for the Synthesis of a Nona-Cycle Buckybowl” Doi: [10.1002/ejoc202400881](https://doi.org/10.1002/ejoc202400881).