

ジベンゾ[*g,p*]クリセンに複数のヒドロキシ基を選択的に導入する方法の開発

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Regio-Defined Multi-Hydroxylation of Dibenzo[*g,p*]chrysene (Ryukoku University) ○Ryuhei Akasaka, Tetsuo Iwasawa

Among kinds of non-planar pi-systems, dibenzo[*g,p*]chrysene (DBC) is known as one of the most appealing polycyclic aromatic hydrocarbons. Because its inherent distortion that originates from repulsion between two protons in 4- (12-) and 5- (13-) positions imparts interesting photophysical and electronic properties to the DBC core. Fine tunings in structure or composition of DBC derivatives can greatly alter their properties as electronic organic devices. However, regio-defined introduction of fundamental substituents such as hydroxyl groups and bromine atoms into the core has been a significant problem. Herein we report regio-defined multiple introductions of hydroxyl groups into a DBC core.

Keywords: Dibenzo[*g,p*]chrysene; Hydroxylation; Selective Bromination; Regio-selective Friedel-Crafts reactions; Polycyclic aromatic hydrocarbons

6環性の縮環化合物、組成式 $C_{26}H_{16}$ のジベンゾ[*g,p*]クリセン (DBC) は、分子内の4位と5位・12位と13位水素のそれぞれの立体反発に起因した非平面性の π 共役系分子という特質を持つことで知られる。しかし、DBCそのものの反応性の制御は容易ではなく、水酸基や臭素基といった基盤的な置換基でさえ選択的に取り付けることが難しい¹⁾。つまり、DBCの直接的で選択的な官能基化はほとんど報告が成されていない。これに対し今回我々は、2,7,10,15位に位置特異的に臭素を4つ取り付ける反応条件を見出し、テトラフェノール化合物への誘導に成功した (Figure 1)²⁾。

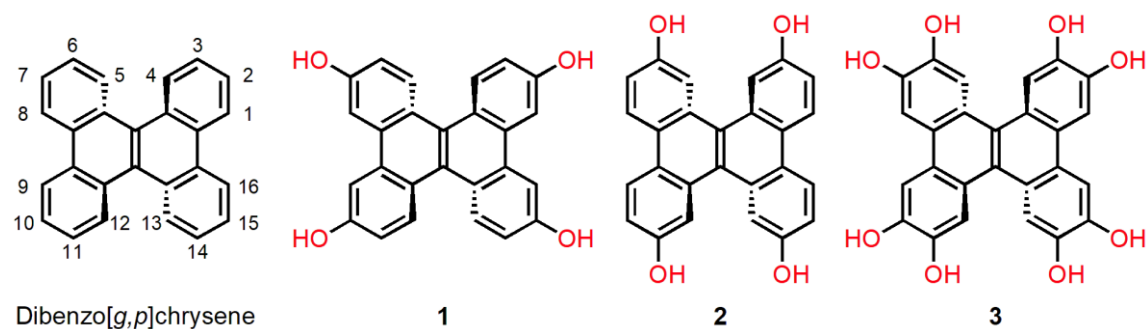


Figure 1. Hydroxy-Substituted DBCs

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