

6A6B, 6A6C, 6A6D-ビス(ナフチルスルホニルオキシ)- β -シクロデキストリンのゲスト包接時における配座変化

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*Guest-Induced Conformational Change of 6A6B-, 6A6C-, and
6A6D-Bis(naphthylsulfonyloxy)- β -cyclodextrins*

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Pure 6 A 6 B-, 6 A 6 C-, and 6 A 6 D-Bis(naphthylsulfonyloxy)- β -cyclodextrins were prepared and isolated. Association constants between the di-substituted β -cyclodextrin and sodium 1-adamantanecarboxylate or 1-adamantylammonium chloride were measured from the guest-induced change of the fluorescence and circular dichroism spectra of the disubstituted cyclodextrins. The association constant of the 6 A 6 C isomer was three-fold larger than those of the 6 A 6 B and 6 A 6 D isomers. The guest-binding of the disubstituted cyclodextrins caused the decrease in the fluorescence intensities and the appearance of the excimer emission. Also, the guest-binding changed the dichroism spectra dramatically, demonstrating the change of the relative position of the two naphthyl groups. these spectral changes were dependent on the regiochemistry (6 A 6 B, 6 A 6 C or 6 A 6 D) of two substituents of the cyclodextrins. These spectral change and the association constants suggested that a naphthyl group partially included in the β -cyclodextrin cavity moved to the outside of the cavity to interact with another naphthyl group which was located out of the cavity.

抄録 ゲスト包接時にホストが配座変化を起こすモデルとして, β -シクロデキストリンの6-位に β -ナフチルスルホニル基を2個有する3種類の異性体(6A6B, 6A6C, 6A6D体)を合成した。これらのシクロデキストリン異性体によるゲスト(1-アダマンタンカルボン酸ナトリウムおよび1-アダマンチルアミン塩酸塩)包接を, 蛍光または円偏光二色性スペクトルで検討した結果, ゲスト包接時に置換基がそれぞれ配座変化を起

こすことが明らかとなった。これらのゲスト包接能は置換位置の違いによって異なっており、新しい様式の分子認識モデルと考えられる。

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