

BIS(ZINC(II)-CYCLEN)錯体によるバルビタール およびリン酸の認識

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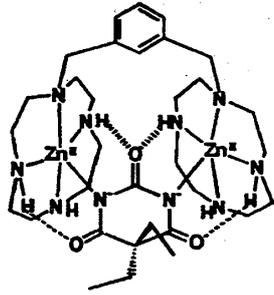
HETEROCYCLES, 42(2) 775-787 (1996)

A NEW BIS(ZINC(II)-CYCLEN) COMPLEX AS A NOVEL CHELATOR FOR BARBITURATES AND PHOSPHATES

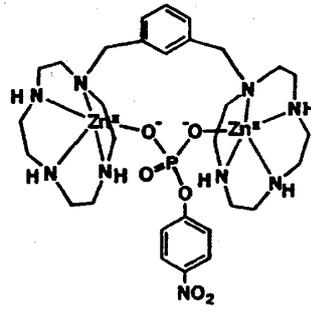
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A novel bis-zinc(II) receptor (bis(Zn^{II}-cyclen)), which has two macrocyclic tetraamine Zn^{II} complexes connected through a *m*-xylene bridge, has been synthesized as a potential host for barbiturates and phosphates in aqueous solution. The new zinc(II) complex, bis(Zn^{II}-cyclen) was proven to be an excellent host for barbital and forms a stable 1 : 1 complex (Zn₂L-barbital²⁻) in aqueous solution ($K_{\text{Bar}} = \frac{[\text{Zn}_2\text{L-barbital}_2]}{[\text{uncomplexed Zn}_2\text{L}][\text{uncomplexed barbital}]} = 10^{5.6} \text{ M}^{-1}$ at 25°C and pH8), wherein both imido groups of the barbital are deprotonated. The bis(Zn^{II}-cyclen) also has a strong affinity to a bidentate phosphomonoester dianion, 4-nitrophenyl phosphate (NP²⁻) ($K_{\text{NP}} = \frac{[\text{Zn}_2\text{L-NP}^{2-}]}{[\text{Zn}_2\text{L}][\text{NP}^{2-}]} = 10^{4.0} \text{ M}^{-1}$ at 25°C).

抄録 一分子内に *m*-キシレンを架橋にして、二つの Zn^{II}-cyclen 錯体を持つ新規化合物 bis-(Zn^{II}-cyclen)を合成した。この化合物は、バルビタールおよびリン酸を水溶液中で、二点で認識捕捉することが判った。



bis(Zn^{II} - cyclen) - barbital²⁻



bis(Zn^{II} - cyclen) - NP²⁻

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