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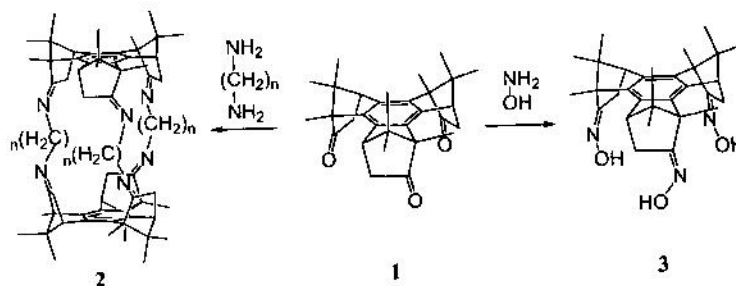


Inclusion of Small Molecules in Benzocyclotrimer Based Hosts

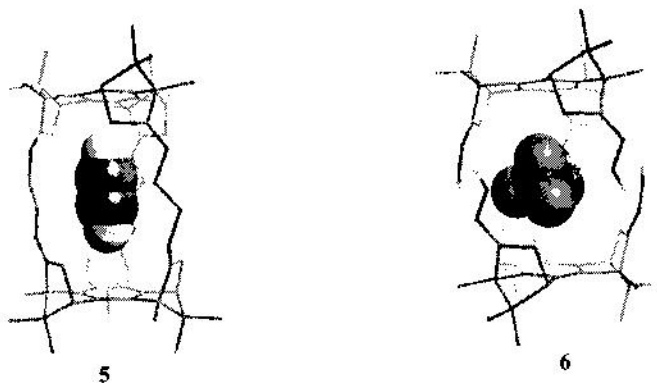
S. Tartaggia, F. Fabris, A. Scarso, O. De Lucchi

Dipartimento di Chimica, Università Ca' Foscari Venezia, Dorsoduro 2137, 30123 Venezia
e-mail: stefano.tartaggia@unive.it

Syn-benzocyclotrimers are polycyclic cup-shaped compounds, which find applications in supramolecular chemistry.^{1,2} Recently we have reported the functionalization of the enantiopure benzocyclotrimer **1** derived from (-)-borneol, through condensation with hydroxylamine. The corresponding trioxime **3** self-assembles to form the molecular capsule **6**, which is able to include small molecules. The condensation of **1** with aliphatic diamines of different length leads to molecular cages of different size **2**, well suited to host small hydrocarbons.³



The inclusion of methane, ethane, ethylene and acetylene was studied by NMR experiments at low temperatures. The results show that the efficiency of binding small guests is determined by the size and shape of these molecular cages.



References

1. F. Fabris, L. Pellizzaro, C. Zonta, O. De Lucchi, *Eur. J. Org. Chem.* **2007**, 283-291.
2. A. Scarso, L. Pellizzaro, O. De Lucchi, A. Linden, F. Fabris *Angew. Chem. Int. Ed.* **2007**, 46, 4972-4975.
3. Tartaggia, S.; Scarso, A.; Padovan, P.; De Lucchi, O.; Fabris, F. *Org. Lett.* **2009**, 11, 3926-3929.

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