

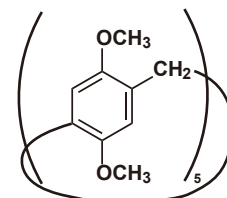
# Macrocycles for Host-Guest Chemistry

Host-compounds recognize and incorporate specific molecules, atoms or ions (guests) into the molecules to form complexes. In the formation of these complexes, a variety of forces such as electrostatic interaction, hydrophobic interaction, hydrogen bonding, etc. are utilized to create high selectivity. Molecular sensors, synthetic enzymes, separation systems, etc. utilize the high guest selectivity of these host compounds. Synthesis of new host compounds with even higher selectivity are currently being developed.

## Pillararene

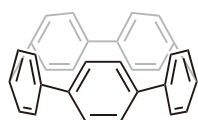
**D4471** is a ring-shaped molecule developed by T. Ogoshi *et al.*, and has a symmetric pillar structure differing from calixarenes.  
**D4471** can capture electron-accepting molecules and linear *n*-alkanes selectively because the internal cavity (diameter ca. 0.5 nm) is an electron-rich space enclosed by benzene rings.

References T. Ogoshi, *J. Incl. Phenom. Macrocyc. Chem.* **2012**, 72, 247.  
T. Ogoshi, T. Yamagishi, *Bull. Chem. Soc. Jpn.* **2013**, 86, 312.



**Dimethoxypillar[5]arene**  
100mg / 1g [D4471]

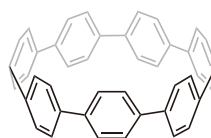
## Cycloparaphenylenes



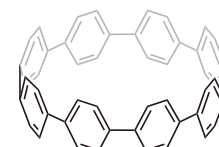
**[5]Cycloparaphenylene**  
20mg / 100mg [C2931]



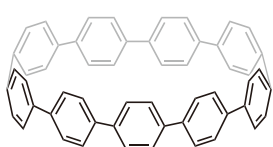
**[6]Cycloparaphenylene**  
20mg [C3386]



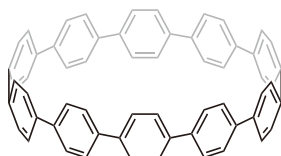
**[7]Cycloparaphenylene**  
10mg [C3571]



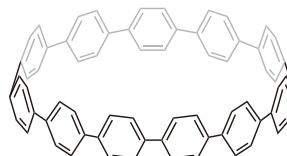
**[8]Cycloparaphenylene**  
20mg [C3544]



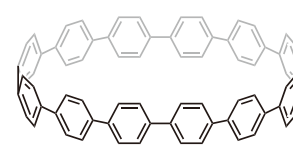
**[9]Cycloparaphenylene**  
20mg [C3465]



**[10]Cycloparaphenylene**  
20mg [C3493]

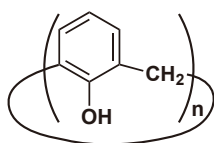


**[11]Cycloparaphenylene**  
10mg [C3536]

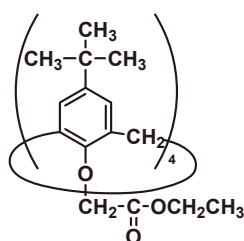


**[12]Cycloparaphenylene**  
10mg [C2449]

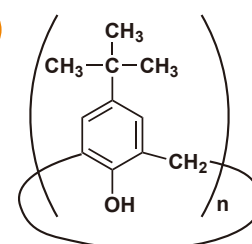
## Calixarenes



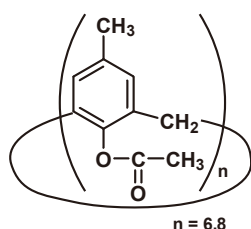
**n=4 Calix[4]arene** 100mg / 1g [C1455]  
**n=6 Calix[6]arene** 1g / 5g [H0713]  
**n=8 Calix[8]arene** 1g / 5g [C1435]



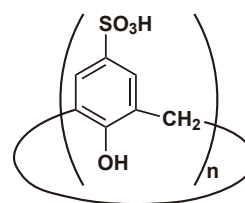
**Tetraethyl  
4-tert-Butylcalix[4]arene-  
O,O',O'',O'''-tetraacetate**  
200mg / 1g [T2563]



**n=4 4-tert-Butylcalix[4]arene** 1g / 5g / 25g [B1809]  
**n=5 4-tert-Butylcalix[5]arene** 100mg [B2221]  
**n=6 4-tert-Butylcalix[6]arene** 5g / 25g [H0714]  
**n=8 4-tert-Butylcalix[8]arene** 5g / 25g [B1750]

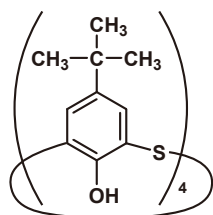


**4-Methyl-1-acetoxycalixarene [mixture of [6] and [8]]**  
100mg / 1g [H0889]

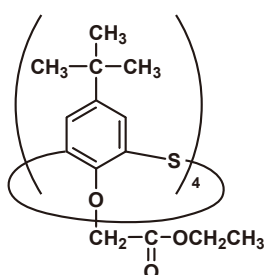


**n=4 4-Sulfocalix[4]arene Hydrate** 1g / 5g [S0469]  
**n=6 4-Sulfocalix[6]arene Hydrate** 1g / 5g [S0470]  
**n=8 4-Sulfocalix[8]arene Hydrate** 1g / 5g [S0471]

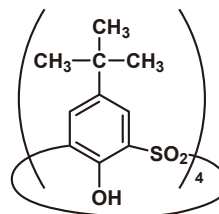
## Thiacalixarenes



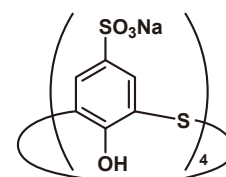
**4-tert-Butylthiacalix[4]arene**  
1g / 5g  
[B2296]



**4-tert-Butyl-1-(ethoxycarbonylmethoxy)thiacalix[4]arene**  
1g / 5g  
[B2310]

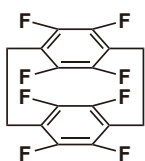


**4-tert-Butylsulfonylcalix[4]arene**  
1g / 5g  
[B2312]

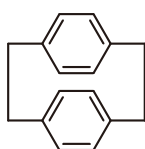


**4-Sulfothiacalix[4]arene Sodium Salt**  
1g / 5g  
[S0477]

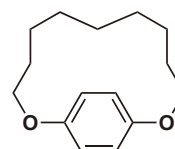
## Cyclophanes



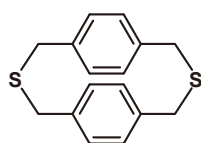
**4,5,7,8,12,13,15,16-Octafluoro [2.2]paracyclophane**  
1g / 5g  
[O0455]



**[2.2]Paracyclophane**  
1g  
[P1165]



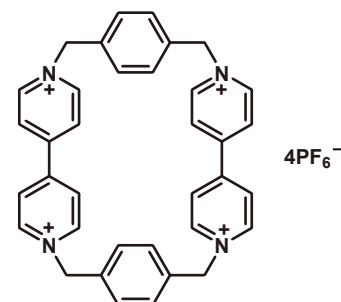
**1,11-Dioxa[11]paracyclophane**  
250mg / 1g  
[D4298]



**2,11-Dithia[3.3]paracyclophane**  
100mg / 500mg  
[D2210]

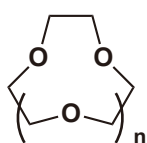


**1,6,20,25-Tetraaza[6.1.6.1]paracyclophane**  
100mg  
[T1378]



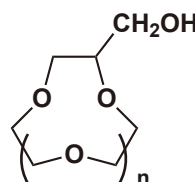
**Cyclobis(paraquat-1,4-phenylene) Tetrakis(hexafluorophosphate)**  
100mg  
[C1749]

## Crown Ethers

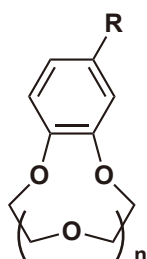


**n=2** 12-Crown 4-Ether  
**n=3** 15-Crown 5-Ether  
**n=4** 18-Crown 6-Ether  
**n=6** 24-Crown 8-Ether

1mL / 5mL [C0858]  
5mL / 25mL [C0859]  
5g / 25g / 100g [C0860]  
1g [C1736]



**n=2** 2-(Hydroxymethyl)-12-crown 4-Ether  
1g / 5g [H0982]  
**n=3** 2-(Hydroxymethyl)-15-crown 5-Ether  
1g / 5g / 25g [H0983]  
**n=4** 2-(Hydroxymethyl)-18-crown 6-Ether  
200mg / 1g [H0990]



**R=H**

**n=2** Benzo-12-crown 4-Ether  
**n=3** Benzo-15-crown 5-Ether  
**n=4** Benzo-18-crown 6-Ether

1g / 5g [B1249]

1g / 5g [B1154]

1g / 5g [B1539]

**R=Br**

**n=3** 4'-Bromobenzo-15-crown 5-Ether  
**n=4** 4'-Bromobenzo-18-crown 6-Ether

1g / 5g [B1249]

1g / 5g [B2181]

**R=NH<sub>2</sub>**

**n=3** 4'-Aminobenzo-15-crown 5-Ether

1g [A1404]

**R=NO<sub>2</sub>**

**n=3** 4'-Nitrobenzo-15-crown 5-Ether

1g / 5g [N0561]

**n=4** 4'-Nitrobenzo-18-crown 6-Ether

1g / 5g [N0562]

**R=CHO**

**n=3** 4'-Formylbenzo-15-crown 5-Ether

100mg / 1g [F0448]

**n=4** 4'-Formylbenzo-18-crown 6-Ether

500mg [F0451]

**R=COCH<sub>3</sub>**

**n=3** 4'-Acetylbenzo-15-crown 5-Ether

1g [A1603]

**n=4** 4'-Acetylbenzo-18-crown 6-Ether

1g [A1604]

**R=COOH**

**n=3** 4'-Carboxybenzo-15-crown 5-Ether

1g [C1713]

**n=4** 4'-Carboxybenzo-18-crown 6-Ether

100mg / 1g [C1714]

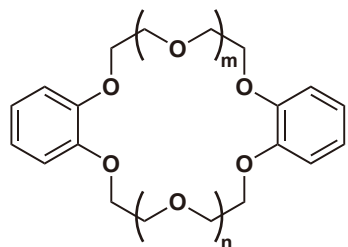
**R=COOCH<sub>3</sub>**

**n=3** 4'-Bromobenzo-15-crown 5-Ether

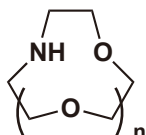
1g [M1489]

**n=4** 4'-Bromobenzo-18-crown 6-Ether

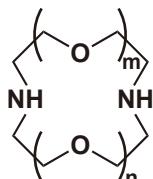
1g / 5g [B2181]



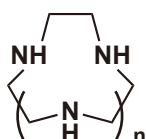
$m=0$	$n=1$	Dibenzo-15-crown 5-Ether	1g	[D2877]
$m=1$	$n=1$	Dibenzo-18-crown 6-Ether	5g / 25g	[D1533]
$m=1$	$n=2$	Dibenzo-21-crown 7-Ether	1g	[D2878]
$m=2$	$n=2$	Dibenzo-24-crown 8-Ether	1g / 5g	[D1830]
$m=3$	$n=3$	Dibenzo-30-crown 10-Ether	1g	[D2684]



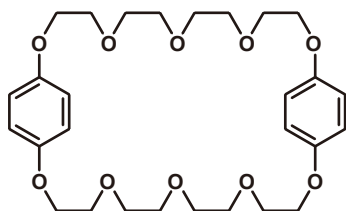
$n=2$	1-Aza-12-crown 4-Ether	250mg / 1g	[A1552]
$n=3$	1-Aza-15-crown 5-Ether	1g / 5g	[A1323]
$n=4$	1-Aza-18-crown 6-Ether	1g / 5g	[A1324]



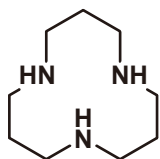
$m=1$	$n=1$	4,10-Diaza-12-crown 4-Ether	1g / 100mg	[D2743]
$m=1$	$n=2$	4,10-Diaza-15-crown 5-Ether	1g	[D2744]
$m=2$	$n=2$	4,13-Diaza-18-crown 6-Ether	1g / 5g	[D2323]



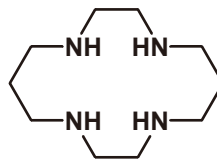
$n=1$	1,4,7-Triazacyclononane	200mg / 1g / 5g	[T1878]
	1,4,7-Triazacyclononane Trihydrochloride	1g / 5g	[T1600]
$n=2$	1,4,7,10-Tetraazacyclododecane	1g / 5g	[T1874]
	1,4,7,10-Tetraazacyclododecane Tetrahydrochloride	1g / 5g	[T1426]
$n=3$	1,4,7,10,13,16-Hexaazacyclooctadecane	100mg	[H1070]
	1,4,7,10,13,16-Hexaazacyclooctadecane Hexahydrochloride	100mg	[H1215]



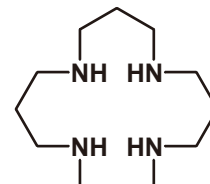
Bis(1,4-phenylene)-34-crown 10-Ether  
100mg  
[B2245]



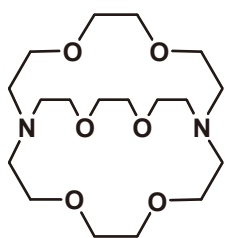
1,5,9-Triazacyclododecane  
100mg  
[T1876]



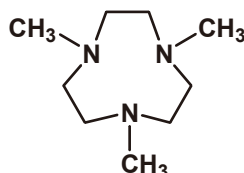
1,4,8,11-Tetraazacyclotetradecane  
1g / 5g  
[T1597]



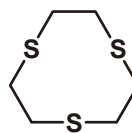
1,4,8,12-Tetraazacyclopentadecane  
1g / 5g  
[T1691]



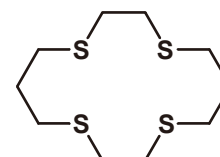
4,7,13,16,21,24-Hexaoxa-1,10-diazabicyclo[8.8.8]hexacosane  
1g / 5g  
[H0932]



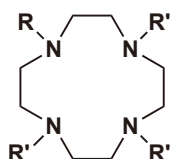
1,4,7-Trimethyl-1,4,7-triazacyclononane  
1g / 5g  
[T1879]



1,4,7-Trithiacyclononane  
500mg  
[T1972]

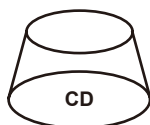


1,4,8,11-Tetrathiacyclotetradecane  
200mg / 1g  
[T1959]

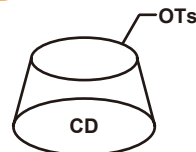


$R, R' = CH_2Ph$	1,4,7,10-Tetrabenzyl-1,4,7,10-tetraazacyclododecane	1g / 5g	[T3356]
$R, R' = CH_2COOH$	1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic Acid	200mg / 1g	[T1875]
$R, R' = CH_2COOEt$	1,4,8,11-Tetraazacyclotetradecane-1,4,8,11-tetraacetic Acid Tetraethyl Ester	200mg	[T2540]
$R=H, R'=CH_2COOtBu$	1,4,7,10-Tetraazacyclododecane-1,4,7-triacetic Acid Tri-tert-butyl Ester	200mg	[T2541]
$R=CH_2COOH, R'=CH_2COOtBu$	1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic Acid Tri-tert-butyl Ester	100mg / 1g	[T2642]

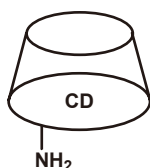
## Cyclodextrins



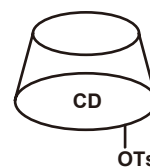
**α-Cyclodextrin** 10g / 25g / 100g [C0776]  
**β-Cyclodextrin** 25g / 100g [C0777]  
**γ-Cyclodextrin** 5g / 25g / 100g [C0869]



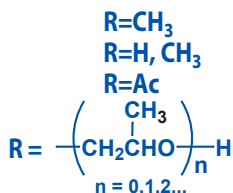
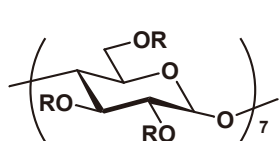
**Mono-6-O-(p-toluenesulfonyl)-**  
**α-cyclodextrin** 200mg / 1g [M1644]  
**β-cyclodextrin** 200mg [M1381]  
**γ-cyclodextrin** 200mg [M1645]



**3A-Amino-3A-deoxy-(2AS,3AS)-**  
**α-cyclodextrin Hydrate** 200mg / 1g [A2122]  
**β-cyclodextrin Hydrate** 200mg / 1g [A1916]  
**γ-cyclodextrin Hydrate** 200mg / 1g [A2123]

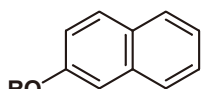


**Mono-2-O-(p-toluenesulfonyl)-**  
**α-cyclodextrin** 200mg / 1g [M1956]  
**β-cyclodextrin Hydrate** 200mg / 1g [M1741]  
**γ-cyclodextrin** 200mg / 1g [M1957]

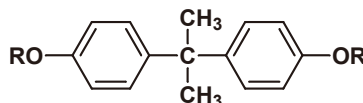


**Trimethyl-β-cyclodextrin** 1g [T1094]  
**Methyl-β-cyclodextrin** 25g / 250g [M1356]  
**Triacetyl-β-cyclodextrin** 25g [T1844]

**Hydroxypropyl-β-cyclodextrin** 25g / 100g [H0979]

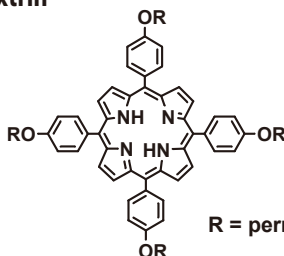


R = permethyl-α-CD



R = permethyl-α-CD

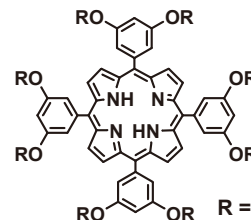
**Mono-6-O-(2-naphthyl)-**  
**per-O-methyl-α-cyclodextrin**  
 10mg [M1876]



R = permethyl-α-CD

**5,10,15,20-Tetrakis[4-(per-O-methyl-α-cyclodextrin-6-yloxy)-phenyl]-21H,23H-porphine**  
 10mg [T2451]

**2,2-Bis[4-(per-O-methyl-α-cyclodextrin-6-yloxy)phenyl]propane**  
 10mg [B3026]



R = permethyl-α-CD

**5,10,15,20-Tetrakis[3,5-bis(per-O-methyl-α-cyclodextrin-6-yloxy)-phenyl]-21H,23H-porphine**  
 10mg [T2452]

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