

## SMALL MOLECULE REMEDIATION

Dr. Oren Scherman of the Department of Chemistry at the University of Cambridge has developed technology for remediating small molecules. The technology is based on capturing the small molecules within the cavity of a class of molecules known as cucurbiturils, specifically cucurbit[8]uril or (CB[8]). Molecules which may be remediated by cucurbit[8]uril include:

- household or pet odours
- carbon dioxide and other environmentally polluting gases

The new technology possesses the following benefits:

- alternative to existing, patented cyclodextrin technology (**can we identify any performance benefits over cyclodextrins?**)
- non-toxic

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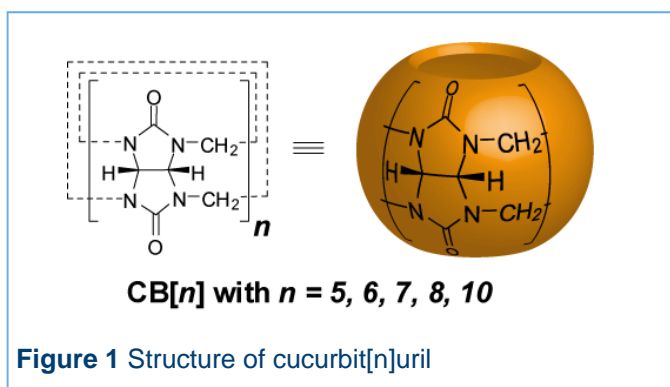
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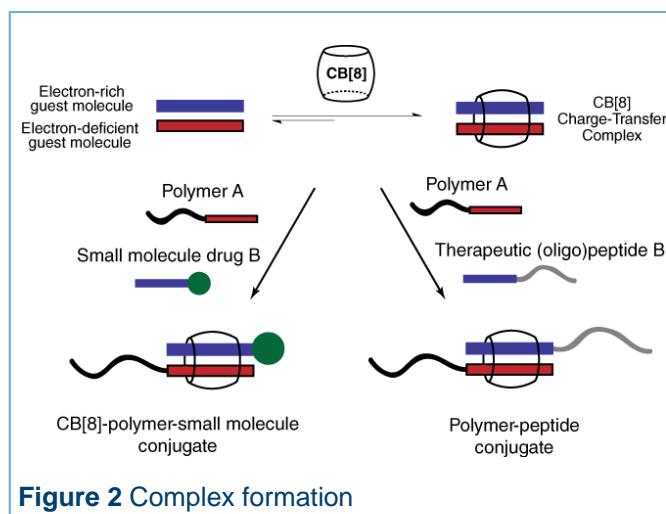
## Background

Currently, cyclodextrins are commonly used to capture odours under the trade names FEBREZE (TM) and CLENZAIRE (TM). Cyclodextrins have also been used in a wide range of applications in food, pharmaceutical and chemical industries as well as agriculture and environmental engineering. Cyclodextrins are modified starches which can be topologically represented as toroids with the larger and smaller openings of the toroid exposing to a solvent secondary and primary hydroxyl groups respectively. They bind hydrophobic compounds within their internal cavity such that they may no longer be detected as a scent. Much of the key cyclodextrin IP is owned and controlled by third parties.

## Technology



The inventors have discovered that cucurbit[8]uril (CB[8]) (see Figure 1 above) may be used to non-covalently join one guest molecule attached to a lipophilic/hydrophilic polymer with another guest molecule attached to another lipophilic/hydrophilic polymer (see Figure 2 below) through the formation of a ternary host-guest complex.



These complexes are strong and exhibit covalent-like properties, but remain in dynamic equilibrium that can be controlled (addressed) by external stimuli such as electrochemical potential, pH, light or oxygen.

## Commercialisation

This technology has potential for use in a wide range of applications **including...**

We are seeking a commercial partner for licensing, collaboration and development of this technology which is protected by pending PCT patent application PCT/GB2008/004016.