



## TECHNOLOGY

# Molecular Container that aids in Recovery from Anesthesia

## OVERVIEW

### Background

Rocuronium is a neuromuscular blocking agent commonly used as general anesthetic during surgery. It is desirable to be able to reverse the effects of rocuronium following surgery for reduced side effects and quick patient recovery. One method to achieve this reversal is the introduction of a molecular container compound capable of strongly and selectively binding to rocuronium. Through chemical binding the rocuronium is removed from the body and the effects of anesthesia are removed. An effective reversal agent would be highly water soluble to allow for intravenous administration using small volumes of liquid.

### Innovative Technology

Researchers at the University of Maryland have discovered a new cucurbit[n]uril-type molecular container that meets the requirements for an optimal rocuronium reversal agent. The molecular container has excellent solubility in water (100 mM) and binds strongly to rocuronium in water. As such the new molecular container can potentially be used as a reversal agent for rocuronium following surgery. A scalable, efficient, and cost effective synthetic route to this compound has also been developed by these same researchers.

### Advantages

- Highly water soluble
- Containers can be produced in scalable quantities at minimal cost

### Applications

- Reversal agent for rocuronium following surgery

## CONTACT INFO

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Patent(s) pending

### LICENSE STATUS

Contact OTC for licensing information

## **CATEGORIES**

- Drug delivery devices
- Nanotechnology + Nanoparticles + Nanomaterials

## **EXTERNAL RESOURCES**

- [US Patent 9,567,344](#)

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