

# Trapping, Detection and Destruction of Nerve Agent Simulants within Supramolecular Cages.

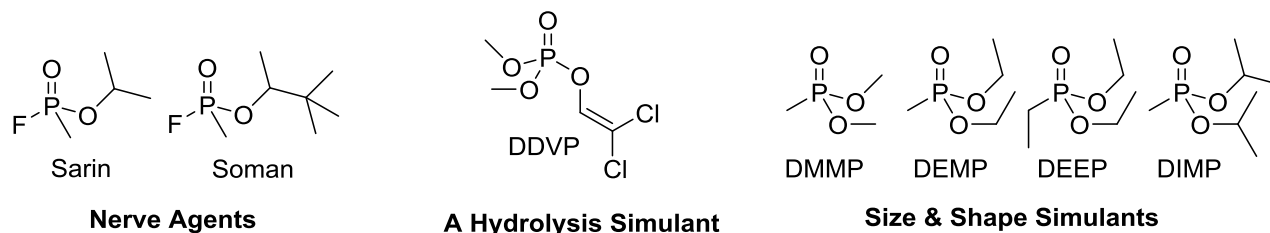


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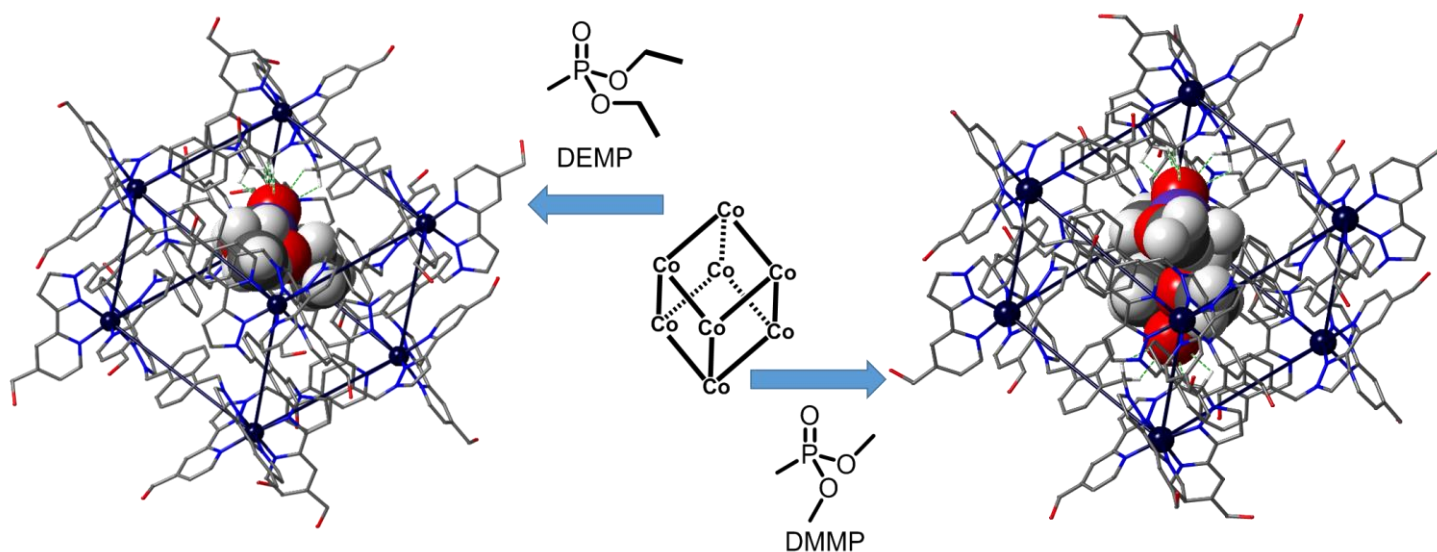
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An increasing number of examples of self-assembled metal coordination cages have the ability to bind guests within an internal cavity allowing applications such as drug delivery or even the control of a reaction. G-series nerve agents, such as Sarin, are colorless, odorless and deadly. A series of nerve agent simulants have been investigated and bound inside the Cage-Host.



**Figure 1** Structures of two G-series nerve agents and various chemical or physical simulants.

The single crystal x-ray structures of Host-Guest complexes have been obtained – two examples are displayed below (Fig 2). The binding of various simulants within the Cage-Host has been investigated<sup>1</sup>. Additionally, the effect of cage binding upon the hydrolysis reaction of a simulant is under investigation.



**Figure 2** X-ray structures of simulants DEMP and DMMP within the Cage-Host.

## Reference

- 1 C. G. P Taylor, J. R. Piper, M. D. Ward, *Chem. Commun.*, **2016**, 52, 6225.