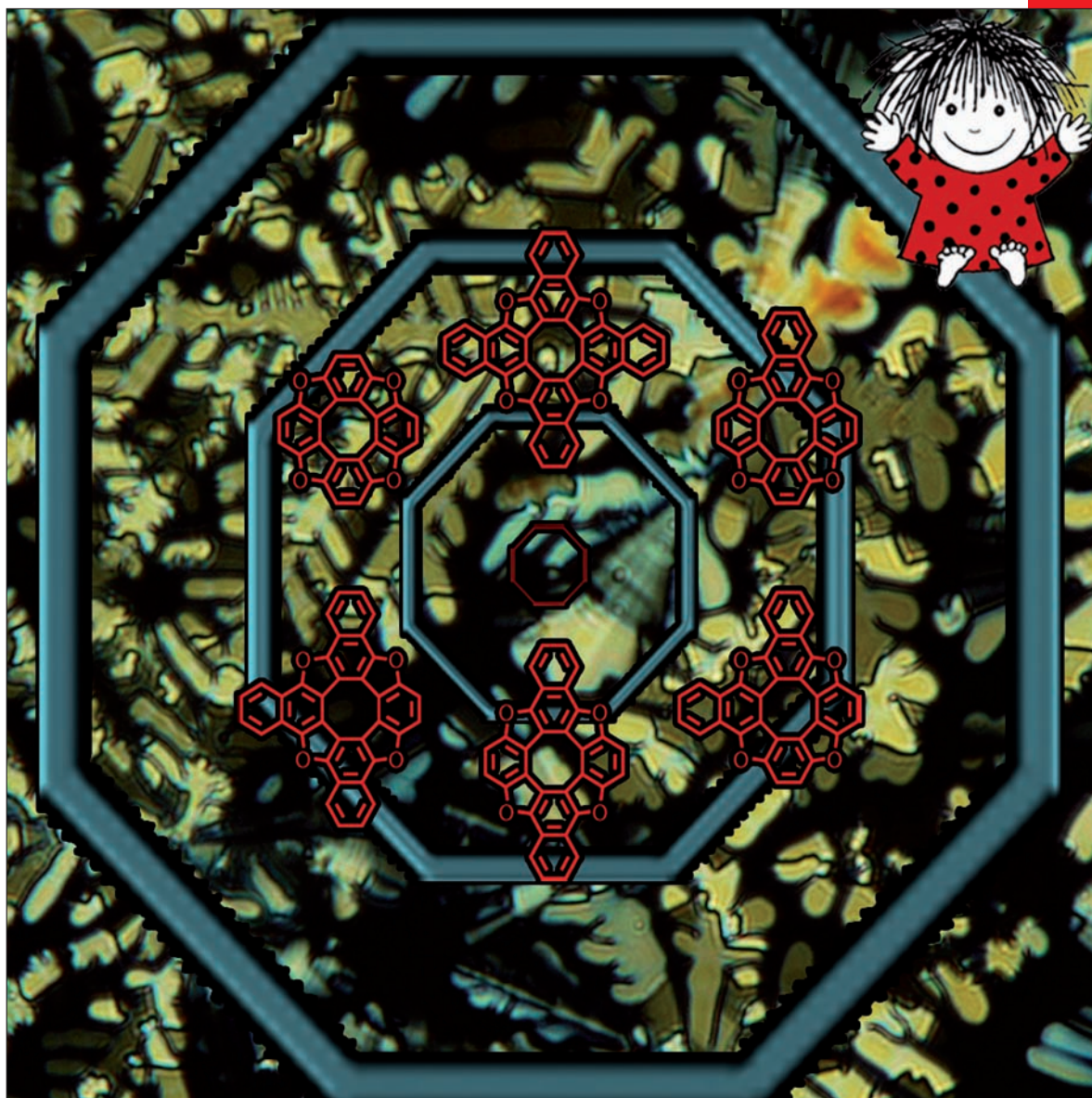


# CHEMISTRY

## A EUROPEAN JOURNAL

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### Concept

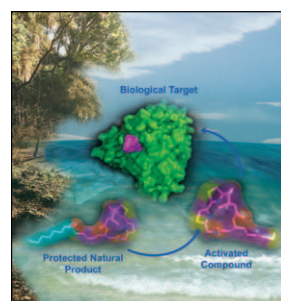
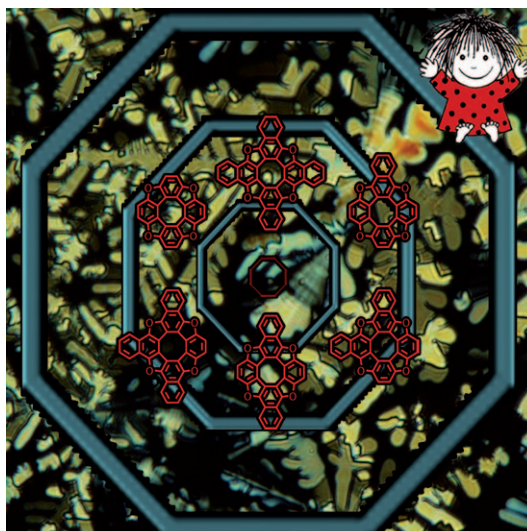
Weapons in Disguise—Activating Mechanisms  
and Protecting Group Chemistry in Nature  
H. Luesch and J. C. Kwan

 WILEY-VCH

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# $\pi$ -Extended tetraoxa[8]circulenes...

... are formed in an acid-mediated condensation of 2,3-bisundecyl-1,4-benzoquinone with 1,4-naphthoquinone. The synthesis, characterization and incorporation of this series of alkane-soluble  $\pi$ -extended tetraoxa[8]circulenes in organic light-emitting diodes is described in the Communication by Pittelkow et al. on page 13030 ff. The tetraoxa[8]circulenes, depicted on the cover and overlooked by the Danish children's cartoon celebrity "Cirkeline", exhibit beautiful green-blue to blue fluorescence depending on the substitution pattern.

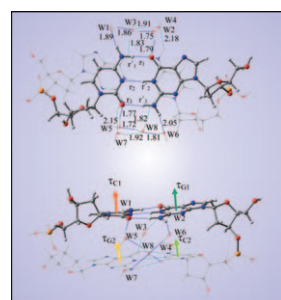
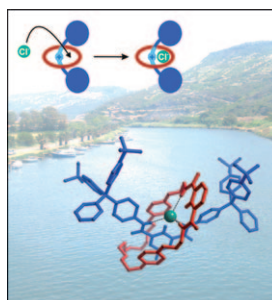


## Natural Prodrugs

Natural products are secondary metabolites that confer survival advantages to the producing organism. Many require activation before they exert their biological effects, perhaps as part of the organism's self-resistance strategy or to aid targeted delivery. In their Concept article on page 13020 ff., H. Luesch and J. C. Kwan outline several examples of "Weapons in Disguise", natural products that use protecting group chemistry or intricate chemical cascades for activation beyond simple "prodrug" paradigms.

## [2]Rotaxane Synthesis

A new, versatile synthetic pathway that uses chloride anions as a template for the formation of a series of eight new [2]rotaxane host molecules, including the first sulfonamide interlocked system, is described in the Full Paper by P. D. Beer et al. on page 13082 ff. A dicationic rotaxane selectively binds chloride even in 35% water, wherein no evidence of binding oxoanions is observed. NMR spectroscopy, X-ray structural analysis, and computational molecular dynamics simulations are used to account for the rotaxane formation yields, anion binding strengths, and selectivity trends. The background picture is the River Temo estuary in Bosa (Sardinia).



## Electron Affinities

The dinucleoside phosphate deoxyguanylyl-3',5'-deoxycytidine dimer, [dGpdC]<sub>2</sub>, is one of the simplest fragments of the DNA duplex that may be considered representative. Exploring electron attachment to this foundational section of DNA helices enables one to approach reliable predictions of the electron-attracting capabilities of DNA double strands. For the first time this minimal skeletal section of DNA helices, [dGpdC]<sub>2</sub>, has been constructed, fully optimized, and analyzed by a quantum mechanical approach at a reliable level of theory. For more details see the Full Paper by J. Gu, F. H. Schaefer III et al. on page 13155 ff.

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