

DSM Science & Technology Awards (SOUTH) 2009	
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Marine toxins have attracted the interests of investigators as a consequence of the associated health risk to humans and the accompanying socioeconomic impact. For instance, each year, there are countless cases of seafood poisoning in humans worldwide, partially caused by toxins produced by microalgae. Among these toxins, the chlorosulfolipids are particularly intriguing because of their structural and stereochemical complexity. Thus far, the mechanism of biological activity remains unknown due to the lack of availability of the natural products. Recently, we succeeded in the first total synthesis of a member of this toxin family, originally isolated from mussels at the Adriatic coast. Additionally, we were able to build up a spectroscopic database that allows the determination of the configuration of chlorinated acyclic molecules. Our results enable detailed biological and pharmacological studies and thus a proper evaluation of the role of chlorosulfolipid cytotoxins in marine ecosystems and their effects on human health.