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A novel route for determining the stereochemistry of natural product diepomuricanin A

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A *Annonaceous* acetogenins are a group of natural products that have been isolated from different species of the *Annonaceae* plant family. Uvaricin was the first *Annonaceous* acetogenin isolated (1982) from roots of *Uvaria accuminata* and was fully characterised. The great interest in acetogenins was initiated from the biological activity of uvaricin against P-388 lymphocytic leukaemia in mice. This significant discovery led to the isolation of more than 450 acetogenins since 1982. Diepomuricanin A (syn and anti forms), are bis-epoxy acetogenins and was isolated from the seeds, roots and stem barks of *Annona muricata* in 1992 by Cavé's group. Additionally, it has been isolated from the seeds of *Rollina membranacea* and leaves of *Rollina Ulei*. Natural diepomuricanin A was later found to be a mixture of syn-diepomuricanin A (syn-1a) and anti-diepomuricanin A (anti-1b) in 1:1 ratio. However, the absolute stereochemistry remains undetermined. In order to identify the absolute stereochemistry of the natural product diepomuricanin A, we designed a synthetic route for the synthesis of the four possible stereoisomers (1a-d). We believed that HPLC comparison of the synthetic diastereoisomers with the natural product would then allow the stereoisomers of the natural product to be defined.

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Synthesis and applications of fluorescent poly(coumarin-triazole) for metal ion sensing

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Over the past few years, several analytical techniques for the determination of metal ions have been developed. These include, spectrophotometry, inductively coupled plasma mass spectrometry (ICP-MS), inductively coupled plasma atomic emission spectrometry (ICP-AES), voltammetric, atomic fluorescence spectrometry (AFS), cold vapor atomic absorption spectroscopy (CV-AAS) and neutron activation analysis. The disadvantages of these methods is that, they require expensive instruments, well-controlled experimental conditions, time consuming and complicated sample preparations. On the other hand, the use of chemosensors has attracted a great deal of attention due to their simplicity and selective for the detection of metal ions. The application of fluorescent conjugated polymers as chemosensors for metal ions has been a powerful tool in the recent years. The use of these chemosensors have attracted considerable attention due to their ability to detect metal ions at very low concentrations. In this study, fluorescent poly(coumarin-triazole) A and B were prepared in excellent yields by a well-established Cu(I)-catalysed click polymerization. The application of these novel polymers as chemosensors was investigated using a range of metal ions.

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