

## Phosphorus, Sulfur, and Silicon and the Related Elements

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### Synthesis of Enantiopure Polyhydroxylated Carbo and Sulfurated Cycles with Potential or Proved Biological Activity, Starting from D-Mannitol

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# Synthesis of Enantiopure Polyhydroxylated Carbo and Sulfurated Cycles with Potential or Proved Biological Activity, Starting from D-Mannitol

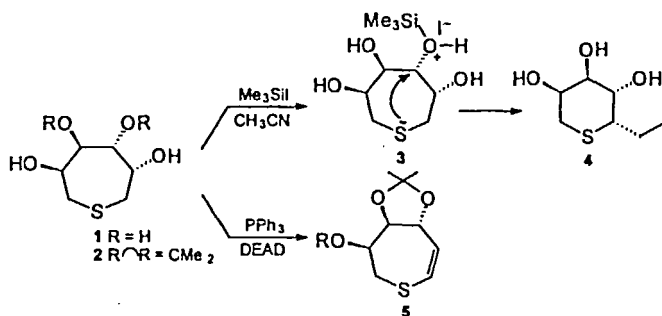
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Starting from alcohol sugars, by means of sulfur, enantiopure Conduritols, diamino Conduritols, thiopines and polyhydroxylated thianes have been synthesized.

**Keywords:** Conduritols; Diamino Conduritols; Thiopines; Hydroxylated Thianes

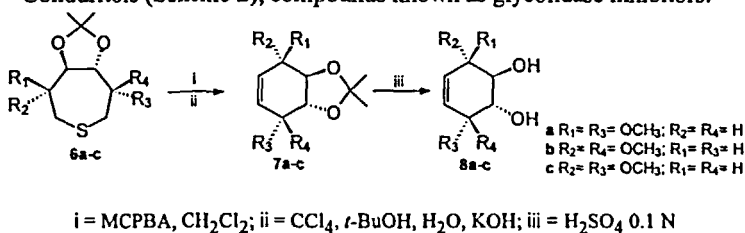
Using  $\text{Me}_3\text{SiI}$  we have achieved the synthesis of sulfurated polyhydroxylated enantiopure 6 membered cycles by ring contraction (Scheme 1) of 7 membered rings, obtained from alcohol sugars.<sup>1</sup>



Scheme 1

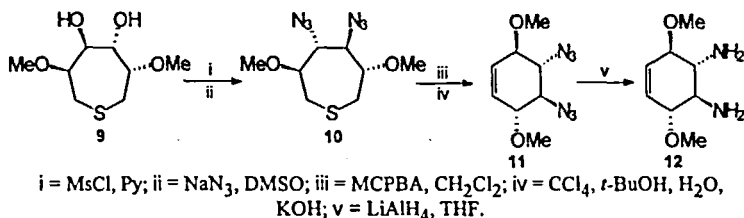
Furthermore from thiepane **2** the thiepin **5** can be obtained. Analogously, starting from a thiepane derivative with the opposite stereochemistry at C<sub>3</sub> and C<sub>6</sub> the related enantiopure thiane and thiepine were obtained, compounds reported as useful synthetic intermediates as well as therapeutic agents.<sup>2</sup>

With a simple and inexpensive procedure, mediated by sulfur,<sup>3</sup> we also synthesized polyhydroxylated enantiopure carbocycles like the Conduritols (Scheme 2), compounds known as glycolidase inhibitors.<sup>4</sup>



Scheme 2

We also tried to synthesize the unreported 2,3-diamino Conduritol. Modifying our procedure, we have synthesized **12** (Scheme 3) compound not accessible by nucleophilic substitution on **8a**.



Scheme 3

## References

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