N-Glycosylation with Sulfoxide Donors for the Synthesis of Peptidonucleosides

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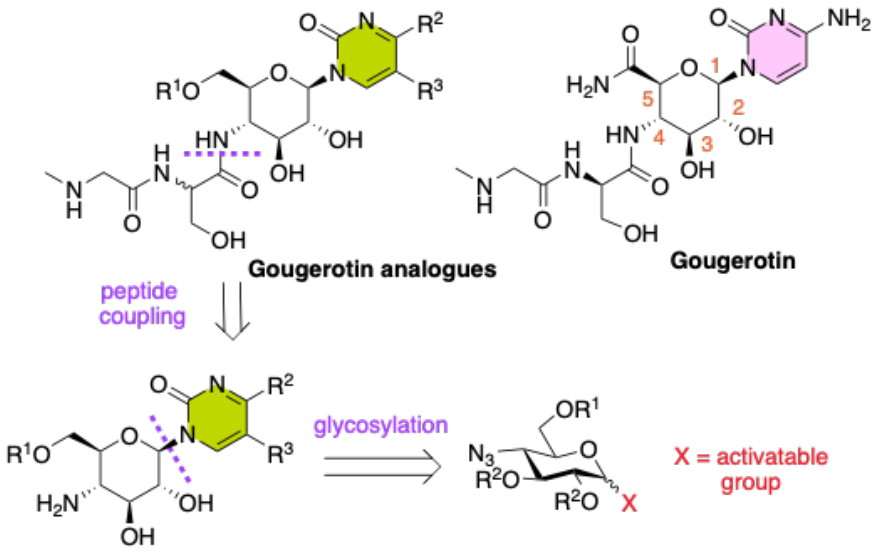
Natural products remain an important source of inspiration for the discovery of new active molecules. Among them gougerotin, isolated for the first time in 1962 from strains of *Streptomyces gougerotii*, caught the attention of researchers (1). This peptidylnucleoside has a very broad spectrum of biological activities: antiviral (2), antifungal (1), antiparasitic and antibacterial (3) by inhibiting protein synthesis in procaryotic and eucaryotic systems. It is active on several varieties of plants whether in preventive or curative tests but its phytotoxicity limits its direct use on plants (4). In order to optimize its crop specificity, we were interested in the preparation of a few gougerotin analogues.

The main modifications relate to the replacement of the natural nucleic base by other pyrimidine bases and the replacement of the carboxamide function at C5 by an hydroxymethyl group (Figure 1). To access these compounds, different pyrimidine nucleobases were glycosylated with donors carrying an azide group at the C4 position. A methodological study involving different anomeric leaving groups (acetate, phenylsulfoxide and *ortho*-hexynylbenzoate) showed that a sulfoxide donor in combination with trimethylsilyl triflate as the promoter led to the best yields (5).



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