Synthesis of 1'-*N*-homoazanucleosides as potential transition state analogues and antiviral agents

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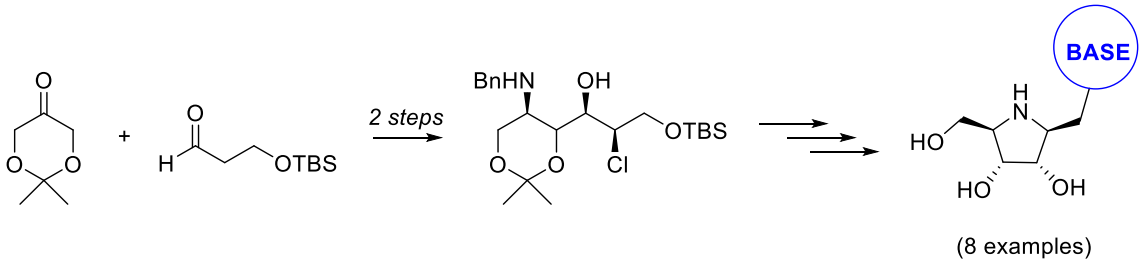
Azanucleosides are a class of nucleoside analogues in which the furanose ring has been replaced by a functionalized pyrrolidine derivative. Most of the known azanucleosides are either C-nucleosides, or homonucleosides, in which a methylene linker is placed between the pyrrolidine and the nucleobase. A very promising class of aza-*C*-nucleosides are the Immucillins, which act as transition state analogue enzyme inhibitors of several nucleosidase & nucleoside phosphorylase enzymes.[1] Some of these Immucillins also exhibit potent antiviral activity; the adenosine analogue BCX-4430 is currently being developed as a potential treatment for Ebola virus disease.[2]

Inspired by the intriguing biological activities of known azanucleosides, a series of new 1'-N-homoazanucleosides was synthesized. These were constructed with a variety of nucleobases and nucleobase analogues and the synthesized compounds are currently being evaluated for antibacterial, antiprotozoal, antiviral and antitumoural activity.



References

[1] Evans G. B., Schramm V. L., Tyler P. C., *Curr. Med. Chem.*, ***2015***, *22*, 3097
[2] Warren, T. K. *et al*., *Nature*, ***2014,*** *508*, 202