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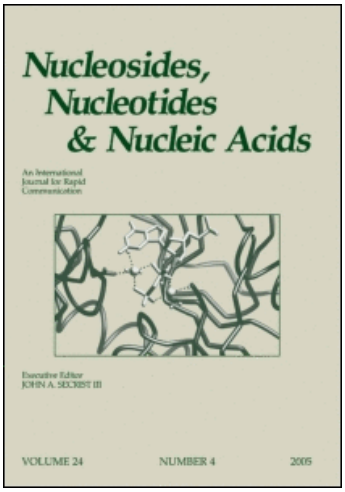

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6,6'-Bis-[1-(6-Deoxy-β-D-Galacopyranosyl) Uracil] - A Tunicaminyl Uracil Analogue : Synthesis and Preliminary Biological Evaluation

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6,6'-BIS-[1-(6-DEOXY-β-D-GALACOPYRANOSYL) URACIL] - A TUNICAMINYL URACIL ANALOGUE : SYNTHESIS AND PRELIMINARY BIOLOGICAL EVALUATION

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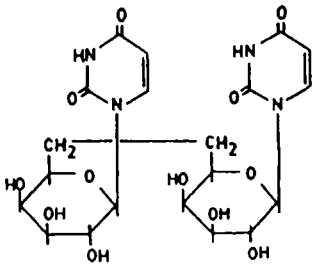
Summary: A C-C linked uracil dinucleoside analogue of tunicaminyl uracil has been evaluated in HeLa cells, the 'nick-translation' assay and the Klenow reaction.

The title compound 1 a symmetrical uracil dinucleoside was prepared from the synthetic galactosyl dimer 6,6'-bis(1,2:3,4 di-O-isopropylidene-6-deoxy-α-D-galactopyranose) by deacetalation peracetylation, treatment with 2,4-(trimethylsilyl)uracil in the presence of stannic chloride and subsequent removal of acetyl groups.



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A preliminary screening of the dimer shows it to be weakly cytotoxic and a weak inhibitor of glucosamine incorporation (17% inhibition at 10^{-5}M) in the HeLa cell system. It is also a moderate inhibitor of DNA replication (25% at 10^{-5}M) and RNA biosynthesis (21% at 10^{-5}M) in this system as estimated by thymidine and uridine

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incorporation respectively. Although concentration dependent stimulation and inhibition is observed in the 'nick-translation' assay (DNase 1 and DNA polymerase No. 1) the dimer clearly stimulates the Klenow fragment of DNA polymerase in a system employing denatured λ DNA as template with a random primer.

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