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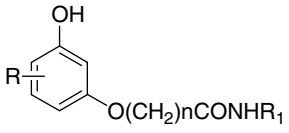
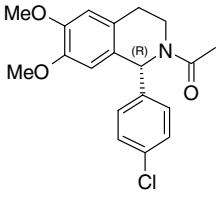
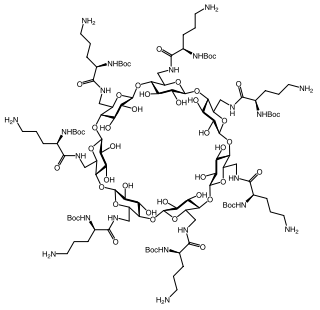
Contents

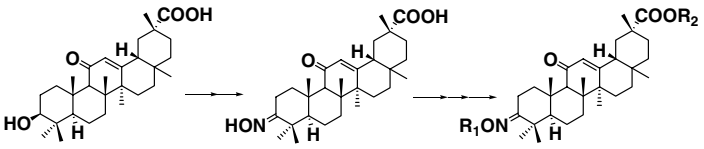
ARTICLES

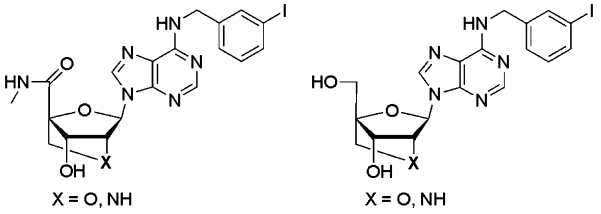


n = 7, 10, 11;
R = nC_5H_{11}, nC_6H_{13};
R_1 = CH_2CH_2OH, cyclopropyl, methylcyclopropyl, 3,4-dihydroxyphenylethyl, 3-methoxy-4-hydroxy-benzyl.

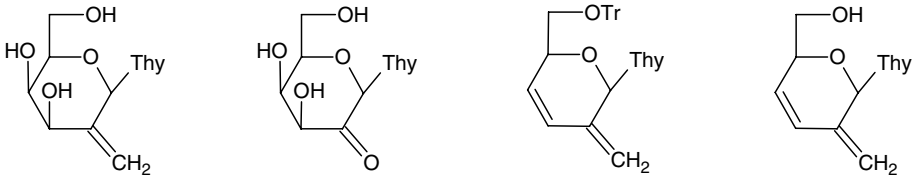






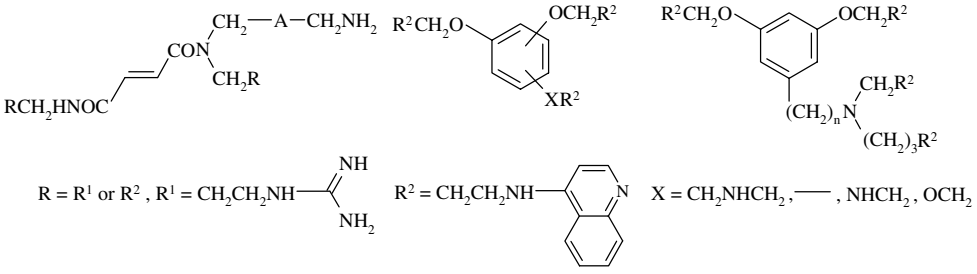


Locked nucleic acid (LNA) analogs of the A_3AR agonist IB-MECA.

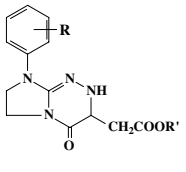


7 **8** **10** **11**

We report the synthesis of four novel pyranonucleosides. These novel synthesized molecules have a promising potential as anti-tumor and anti-rotavirus agents. Compounds **7** and **8** showed to be more efficient than currently used nucleoside analogue AZT, in rotavirus infections and in treatment of colon cancer.

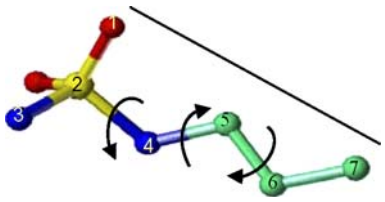


Biological activities of the designed novel fused 1,2,4-triazine esters (**3a, 3d–j**) are reported. In particular, heterobicycles **3d** and **3e** revealed comparable antibacterial potencies in vitro to that of ampicillin. Compounds **3e**, **3g** and **3j** exhibited antiviral activities against the selected viruses' DNA (human adenovirus type 5-Ad-5) or/and RNA (human enterovirus Echo-9). Simultaneously, their cytotoxicities towards the normal HEK-293 and GMK cells were established. In particular, heterobicycle **3j**, non-toxic for GMK cells, was found to exhibit virucidal properties against Echo-9 virus justifying its further investigation as the potential antiviral agent.

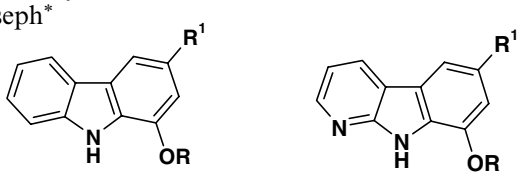


3 a-j

3	R	R'
a	H	CH_3
b	4-CH_3	CH_3
c	2-OCH_3	CH_3
d	4-OCH_3	CH_3
e	3-Cl	CH_3
f	4-Cl	CH_3
g	4-CH_3	C_2H_5
h	4-OCH_3	C_2H_5
i	3-Cl	C_2H_5
j	4-Cl	C_2H_5



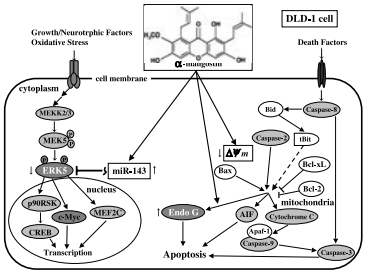
Anticonvulsant sulfamides were designed based on a proposed pharmacophore. They were synthesized and evaluated in preclinical phases. Some of the molecules show a promising anticonvulsant profile as selective anti-MES drugs.

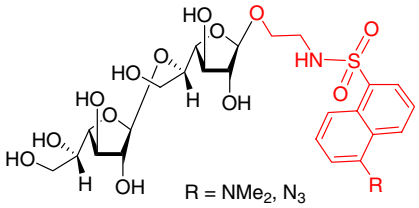


clausine E R = H $R^1 = CO_2Me$
mukonine R = Me $R^1 = CO_2Me$
koenoline R = Me $R^1 = CH_2OH$

1-3

Antiproliferative activity of clausine E, mukonine, and koenoline bioisosteres **1**–**3** was evaluated against miscellaneous cancer cell lines and compared to those obtained with clausine E and mukonine.





The preparation and preliminary screening data are reported for several fluorescent or pro-fluorescent arabinofuranose and galactofuranose disaccharides as probes and substrates for new assays of arabinosyl- and galactosyltransferases of *Mycobacterium tuberculosis*.

OTHER CONTENTS

*Corresponding author
ⓘ+ Supplementary data available via ScienceDirect

COVER

Terfenadine (an antihistamine pulled from the market in 1997) bound to a model of an open form of the homo-tetrameric pore domain of hERG, produced using Schrödinger's "Induced Fit Docking" technology [Farid, R.; Day, T.; Friesner, R. A.; Pearlstein, R. A. *Bioorg. Med. Chem.* **2006,** *14*, 3160–3173].

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