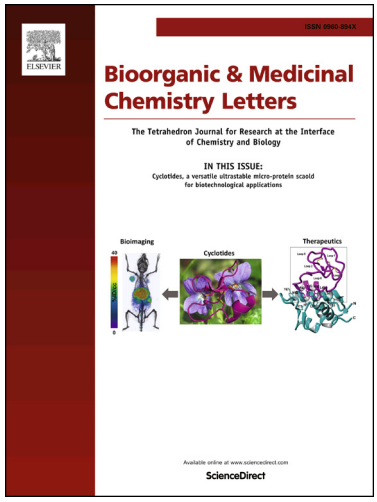
Accepted Manuscript



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PII: S0960-894X(17)31116-2
DOI: https://doi.org/10.1016/j.bmcl.2017.11.029
Reference: BMCL 25435

To appear in: *Bioorganic & Medicinal Chemistry Letters*

Received Date: 26 July 2017
Revised Date: 10 November 2017
Accepted Date: 14 November 2017

Please cite this article as: Zhurilo, N.I., Chudinov, M.V., Matveev, A.V., Smirnova, O.S., Konstantinova, I.D., Miroshnikov, A.I., Prutkov, A.N., Grebenkina, L.E., Pulkova, N.V., Shvets, V.I., Isosteric ribavirin analogues: synthesis and antiviral activities., *Bioorganic & Medicinal Chemistry Letters* (2017), doi: https://doi.org/10.1016/j.bmcl.2017.11.029

Isosteric ribavirin analogues: synthesis and antiviral activities.

Nikolay I. Zhurilo[a], Mikhail V. Chudinov [a†], Andrey V. Matveev [a], Olga S. Smirnova[b], Irina D. Konstantinova[b], Anatoly I. Miroshnikov[b], Alexander N. Prutkov[c], Lyubov E. Grebenkina[c], Natalya V. Pulkova[c], Vitaly I. Shvets[a]

[a] *Lomonosov Institute of Fine Chemical Tehnologies, Moscow Technological University, Vernadskogo Pr. 78, 119454, Moscow, Russia.*

[b] *Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Miklukho-Maklaya St. 16/10, 117997 GSP, Moscow B-437, Russia.*

[c] *Moscow Politechnical University, Bolshaya Semenovskaya Str., 38, 107023, Moscow, Russia.*

† Corresponding author: mikle@irims.ru

Abstract

The novel isosteric ribavirin analogues were synthesized by two different ways. Some of them showed significant antiviral action against hepatitis C virus (HCV), herpes simplex (HCV-1) and influenza A virus comparable to that of ribavirin itself. The data obtained confirm the proposed theory of the ribavirin possible antiviral activity mechanism related with bioisosterism.

Ribavirin (Virazole, 1-β-D-ribofuranosyl-1,2,4-triazole-3-carboxamide) is a nucleoside analogue with a broad antiviral activity spectrum. It is active against influenzia virus, HCV, RSV, HSV etc. [1-6].

Ribavirin action mechanism is still not clarified, however, an existing hypothesis assume the heterocyclic base of ribavirin, 1,2,4-triazole-3-carboxamide (TKA), as a mimic of guanosine purine cycle. This steric similarity allows to ribavirin molecule to incorporate into the viral genome and cause irreversible mutations[7].

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