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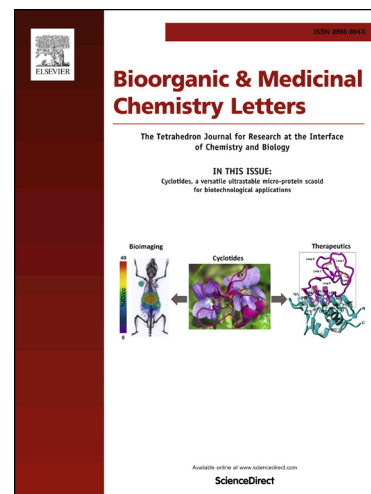
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Isosteric ribavirin analogues: synthesis and antiviral activities.

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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 influenza 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 mutations⁷.

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