ACS Medicinal Chemistry Letters

PATENT HIGHLIGHT

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Antiviral Compounds for the Treatment of HCV

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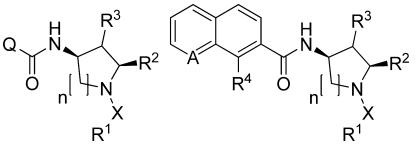
Title:	Antiviral Compounds		
Patent Application Number:	WO2013124335	**Publication date:**	August 29, 2013
Priority Application:	US61/602,687	**Priority date:**	February 21, 2012
Inventors:	Cheung, Adrian Wai-Hing; Schoenfeld, Ryan Craig; Yun, Weiya; Zhao, Shu-Hai.		
Assignee Company:	F. Hoffmann-La Roche, AG		
Disease Area:	Viral Infection	**Biological Target:**	Hepatitis C

Summary: Hepatitis C viral (HCV) infection remains a major global health issue despite decades of research devoted to identifying novel treatments for patients in need. The current standard of care, pegylated interferon-α in combination with ribazirin, is associated with a variety of side effects. The identification of novel therapeutics capable of treating HCV infection in the absence of interferon-α could be accomplished with therapies that disrupt viral replication. Direct acting antivirals (DAAs) therapies capable of inhibiting NS3 protease and NS5A protease have been identified, but viral resistance has been an issue. Additional therapeutically useful compounds are necessary. The compounds described in the present application are capable of inhibiting viral replication and are claimed as useful for the treatment of HCV infection, either alone or in combination with other antiviral agents.

Important Compound Classes:



Definitions:

Q is phenyl or naphthalene substituted with one or more Q′;

Q′ is hydroxyl, lower alkyl, or halo;

R^1 is lower alkyl, cycloalkyl, phenyl, or heterocycloalkyl;

R^2 is $-C(=O)OR^{2'}$, $-C(=O)R^{2'}$, $-C(=O)ON(R^2)^{2'}$ monocyclic or bicyclic heteroaryl, optionally substituted with one or more $R^{2'}$;

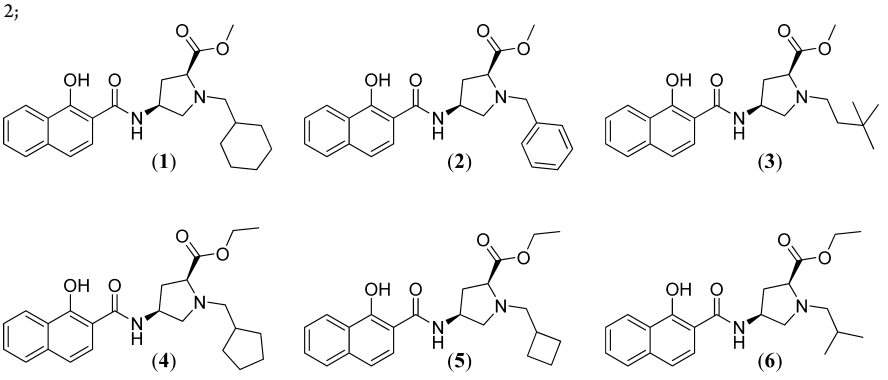
Each $R^{2'}$ is independently H, lower alkyl, or heterocycloalkyl;

R^3 is H or lower alkyl; and

X is CH_2 or C(=O);

n is 1 or 2;

Key Structures:



Special Issue: HCV Therapies

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Recent Review Articles:

1. Kiser, J. J.; Flexner, C. Direct-acting antiviral agents for hepatitis C virus infection. *Annu. Rev. Pharmacol. Toxicol.* **2013**, *53*, 427−449.

2. Casey, L. C.; Lee, W. M. Hepatitis C virus therapy update 2013. *Curr. Opin. Gastroenterol.* **2013**, *29* (3), 243−249.

Biological Assay: HCV GtaT1b inhibitory replicon activity assay, luciferase reporter system.

Biological Data:

Structure	HCV GT1b, IC_{50} (nM)	Structure	HCV GT1b, IC_{50} (nM)
1	0.047	4	0.029
2	0.079	5	0.052
3	0.051	6	0.055

Claims: 18 Total claims.

11 Composition of matter claims.

7 Method of use claims.

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Notes

The authors declare no competing financial interest.