Paper No. 7 Filed: June 13, 2018

## UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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INITIATIVE FOR MEDICINES, ACCESS & KNOWLEDGE (I-MAK), INC., Petitioner,

v.

GILEAD PHARMASSET LLC, Patent Owner.

IPR2018-00123 Patent 8,735,372 B2

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Before LORA M. GREEN, GRACE KARAFFA OBERMANN, and WESLEY B. DERRICK, *Administrative Patent Judges*.

DERRICK, Administrative Patent Judge.

DECISION
Denying Institution of *Inter Partes* Review 35 U.S.C. § 314(a)



## I. INTRODUCTION

Initiative for Medicines, Access & Knowledge (I-MAK), Inc. ("Petitioner") requests an *inter partes* review of claims 1 and 2 of U.S. Patent No. 8,735,372 B2 ("the '372 patent"). Paper 2 ("Pet."). Gilead Pharmasset LLC ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). We may not institute an *inter partes* review "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). Applying that standard, for the reasons set forth below, we decline to institute an *inter partes* review because the Petitioner has not shown a reasonable likelihood that it would prevail in establishing the unpatentability of any challenged claim.

### II. BACKGROUND

## A. Related Proceedings

The parties identify identifies additional petitions filed by Petitioner for *inter partes* review of other patents owned by Patent Owner: IPR2018-00103 for review of U.S. Patent No. 7,429,572 B2; IPR2018-00119 and IPR2018-00120 for review of U.S. Patent No. 7,964,580 B2; IPR2018-00121 and IPR2018-00122 for U.S. Patent No. 8,334,270 B2; IPR2018-00125 for review of U.S. Patent No. 8,633,309 B2; and IPR2018-00126 for review of U.S. Patent No. 9,284,342 B2. Pet. 2, Paper 4, 2–3.



## B. The '372 Patent (Ex. 1001)

The '372 patent is directed to a method of treating a human infected by hepatitis C virus comprising administering both an NS5a inhibitor and a prodrug of a nucleoside derivative. Ex. 1001 Abstract.

Claims 1 and 2 are reproduced below.

1. A method of treating a human infected by hepatitis C virus, comprising administering to the subject an effective amount of an NS5a inhibitor and an effective amount of a compound represented by the following formula:

$$\mathbb{R}^{3a}$$
 $\mathbb{R}^{3b}$ 
 $\mathbb{R}^{2}$ 
 $\mathbb{Q}$ 
 $\mathbb{R}^{3b}$ 
 $\mathbb{Q}$ 
 $\mathbb{R}^{3b}$ 
 $\mathbb{Q}$ 
 $\mathbb{Q}$ 

## wherein

R<sup>1</sup> is hydrogen, methyl, ethyl, n-propyl, i-propyl, or a substituted or unsubstituted phenyl, where the substitutent [sic] of the substituted phenyl is at least one of a CH<sub>3</sub>, OCH<sub>3</sub>, F, Cl, Br, I, nitro, cyano, and a CH<sub>3-q</sub>X<sub>q</sub>, where X is F, Cl, Br, or I, and q is 1-3;

R<sup>2</sup> is hydrogen or CH<sub>3</sub>;

R<sup>3a</sup> is H and R<sup>3b</sup> is H, CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub>, CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>, CH<sub>2</sub>Ph, CH<sub>2</sub> -indol-3-yl, -CH<sub>2</sub>CH<sub>2</sub>SCH<sub>3</sub>, CH<sub>2</sub>CO<sub>2</sub>H, CH<sub>2</sub>C(O)NH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>COOH, CH<sub>2</sub>CH<sub>2</sub>C(O)NH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, —CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NHC(NH)NH<sub>2</sub>, CH<sub>2</sub>-imidazol-4-yl, CH<sub>2</sub>OH, CH(OH)CH<sub>3</sub>, CH<sub>2</sub>((4'-OH)-Ph), CH<sub>2</sub>SH, or lower cycloalkyl, or



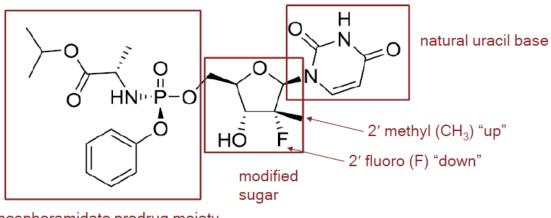
- R<sup>3a</sup> is CH<sub>3</sub>, CH(CH<sub>3</sub>)<sub>2</sub>, CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>, CH(CH<sub>3</sub>)CH<sub>2</sub>CH<sub>3</sub>, CH<sub>2</sub>Ph, CH<sub>2</sub> -indol-3-yl, —CH<sub>2</sub>CH<sub>2</sub>SCH<sub>3</sub>, CH<sub>2</sub>CO<sub>2</sub>H, CH<sub>2</sub>C(O)NH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>COOH, CH<sub>2</sub>CH<sub>2</sub>C(O)NH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, -CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NHC(NH)NH<sub>2</sub>, CH<sub>2</sub>-imidazol-4-yl, CH<sub>2</sub>OH, CH(OH)CH<sub>3</sub>, CH<sub>2</sub>((4'-OH)-Ph), CH<sub>2</sub>SH, or lower cycloalkyl and R<sup>3b</sup> is H;
- R<sup>4</sup> is hydrogen, CH<sub>3</sub>, Et, <sup>i</sup>Pr, <sup>n</sup>Pr, <sup>n</sup>Bu, 2-butyl, <sup>t</sup>Bu, benzyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, N-methyl-aziridin-2-yl, N-methyl-azetidin-3-yl, N-methyl-pyrrolidin-4-yl, N-methyl-piperidin-4-yl, lower haloalkyl, or di(lower alkyl)aminolower alkyl; and
- R<sup>7</sup> and R<sup>8</sup> are independently H, F, Cl, Br, I, OH, OCH<sub>3</sub>, SH, SCH<sub>3</sub>, NH<sub>2</sub>, NHCH<sub>3</sub>, N(CH<sub>3</sub>)<sub>2</sub>, CH<sub>3</sub>, CH<sub>3-q</sub>X<sub>q</sub>, where X is F, Cl, Br, or I and q is 1 to 3, vinyl, CO<sub>2</sub>H, CO<sub>2</sub>CH<sub>3</sub>, CONH<sub>2</sub>, CONHCH<sub>3</sub>, or CON(CH<sub>3</sub>)<sub>2</sub>, wherein R' is a C<sub>1-20</sub> alkyl; a C<sub>1-20</sub> cycloalkyl; a C<sub>2</sub>-C<sub>6</sub> alkenyl, a C<sub>2</sub>-C<sub>6</sub> alkynyl.
- 2. The method of claim **1**, wherein the compound is

Ex. 1001, 629:64–632:20.

Claim 2 sets forth a specific compound (i.e., sofosbuvir) for administration with an NS5a inhibitor, whereas claim 1 sets forth by formula and possible substituents a genus of compounds for



administration with an NS5a inhibitor. Pet. 36–38; Prelim. Resp. 4–5. The structure of sofosbuvir, as annotated by Patent Owner, is depicted below:



phosphoramidate prodrug moiety

Prelim. Resp. 4–5. The figure depicts the chemical structure of sofosbuvir with stereochemistry and identifies the compound's phosphoroamidate prodrug moiety, modified sugar, and natural uracil base. *Id.* 

C. The Asserted Ground of Unpatentability

Petitioner asserts that claims 1 and 2 of the '372 patent are unpatentable based on the following ground. Pet. 3.

References	Statutory Basis
Sofia, <sup>1</sup> Congiatu, <sup>2</sup> and	§ 103
Serrano-Wu <sup>3</sup>	

<sup>&</sup>lt;sup>3</sup> Serrano-Wu et al., US 2006/0276511 A1, published December 7, 2006 (Ex. 1013).



<sup>&</sup>lt;sup>1</sup> Sofia et al., Poster #P-259, presented at the 14th Int'l Symposium on Hepatitis C Virus and Related Viruses, Glasgow, Scotland, UK, Sept. 9–13, 2007 (Ex. 1012).

<sup>&</sup>lt;sup>2</sup> Congiatu et al., 49 J. MED. CHEM. 452–455 (2006) (Ex. 1011).

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