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Paper 11
Entered: August 1, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

3D-MATRIX, LTD,

Petitioner,

v.

MENICON CO., LTD,

Patent Owner.

Case IPR2014-00398

Patent 8,299,032 B2

Before JACQUELINE WRIGHT BONILLA, DONNA M. PRAISS, and BRIAN P. MURPHY, *Administrative Patent Judges.*

MURPHY, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

On January 31, 2014, 3D-Matrix, Ltd. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1-8 of U.S. Patent No. 8,299,032 B2 ("the '032 patent"). Paper 1 ("Pet."). On May 9, 2014, Menicon Co., Ltd. ("Patent Owner") filed a Preliminary Response to the Petition. Paper 9 ("Prelim. Resp."). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition."

Petitioner challenges claims 1-8 of the '032 patent as unpatentable under 35 U.S.C. §§ 102(b) and 103. Based on the information presented in the Petition, Preliminary Response, and cited exhibits, we are not persuaded there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition. On this record, we deny the Petition to institute an *inter partes* review of claims 1-8 of the '032 patent.

A. Related Proceedings

The parties do not identify any related proceedings regarding the '032 patent.

B. The '032 Patent (Ex. 2001)

The '032 patent, titled "SELF-ASSEMBLING PEPTIDE AND GEL PRODUCED FROM THE SAME," issued October 30, 2012, from a PCT application filed June 26, 2006. Ex. 2001. The self-assembling peptide described in the '032 patent is comprised of polar and nonpolar amino acid residues, has a non-zero peptide charge at neutral pH, and forms a beta (ß)-sheet structure in an aqueous solution. *Id*. at 1:49-60. The beta (ß)-sheet has

one face of only nonpolar amino acid residues. *Id*. at 1:57-60. Self-assembling peptide gels are useful, for example, as scaffolds for three dimensional cell cultures. *Id*. at 2:67-3:3. The '032 patent recites several advantages resulting from the claimed peptide, including balanced electrostatic forces to prevent "excessive association," transparency of scaffolds, ease of preparation, and beta (ß)-sheet (membrane) stability. *Id*. at 2:33-67.

The '032 patent states that the charge of the self-assembling peptide is pH-dependent and can be calculated according to the method of Lehninger. *Id*. at 6:1-7. The calculation is typically executed using a computer program. *Id*. Table 8 of the '032 patent identifies nine exemplary peptides having SEQ ID Nos. 1-9, and Table 9 lists the charge for each peptide at pH 7.0, calculated according to the method of Lehninger.[1] *Id*. at 17:17-18:18. The calculated charges for SEQ ID Nos. 1-9 are all non-zero, namely +2, +3, or -2. *Id*. at 18:1-18.

Claim 1 of the '032 patent, the only independent challenged claim, is representative and reproduced below (emphasis added).

> 1. A self-assembling peptide comprising polar amino acid residues and nonpolar amino acid residues,
>
> wherein the self-assembling peptide consists of 12 to 32 amino acid residues, comprises one or more acidic amino acid residues and one or more basic amino acid residues as the polar amino acid residues,
>
> wherein *the sum of charge* of the acidic amino acid residue(s) and charge of the basic amino acid residue(s), when

[1] Lehninger is the author of a text book titled "Principles of Biochemistry," referenced in the '032 patent as "Lehninger [*Biochemie*, 1979]." Ex. 2001, 6:3.

the self-assembling peptide is *in a neutral pH environment, is from -3 to -2 or +2 to +3*, wherein all of the amino acids in the self-assembling peptide *form a beta (ß)-sheet structure* in which one face consists of only nonpolar amino acid residues upon self-assembly *in a neutral aqueous solution*, and wherein the nonpolar amino acid residues are selected from the group consisting of alanine, glycine, leucine, isoleucine, methionine, valine, phenylalanine, and tryptophan.

C. Prior Art Relied Upon in the Petition

Petitioner relies upon the following references:

Zhang II	US 5,670,483	Sept. 23, 1997	Ex. 1002
Agelli	WO 2004/007532 A2	Jan. 22, 2004	Ex. 1019
Altman	9 PROT. SCI. 1095-1105	2000	Ex. 1009
Dado	115 J. AM. CHEM. Soc. 12609-610	1993	Ex. 1004
Mira	4 BMC STRUC. BIO. 7-21	June 4, 2004	Ex. 1021
Yokoi	102 PNAS 8414-19	June 14, 2005	Ex. 1016
Zhang I	90 PNAS 3334-38	April 1993	Ex. 1001

D. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims are unpatentable based on the following grounds:

Reference[s]	Basis	Claims challenged
Dado	§ 102(b)	1-8
Altman	§ 102(b)	1-8
Zhang II, Yokoi, and Agelli	§ 103	1-8
Mira and Zhang I	§§ 102(b) and 103	1-8

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, we construe claim terms according to their broadest reasonable interpretation in light of the patent specification. 37 C.F.R. § 42.100(b); Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012). Under the broadest reasonable interpretation standard, we assign claim terms their ordinary and customary meaning, as understood by one of ordinary skill in the art, in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner does not argue that any claim term in the '032 patent should take on a meaning other than its ordinary and customary meaning. Pet. 18-23. Patent Owner does not address claim construction. Prelim. Resp. 6-8. We proceed on the basis that the claim terms are given their ordinary and customary meaning as understood by one of ordinary skill in the art in the context of the '032 patent.

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