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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/141,315	09/09/2011	Jan Wehkamp	BOSC.P7036US/11602997	4301

24972 7590 01/29/2019
NORTON ROSE FULBRIGHT US LLP
1301 Avenue of the Americas
NEW YORK, NY 10019-6022

EXAMINER
SITTON, JEHANNE SOUAYA

ART UNIT	PAPER NUMBER
1634	

NOTIFICATION DATE	DELIVERY MODE
01/29/2019	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAN WEHKAMP, EDUARD STANGE, and MAUREEN KOSLOWSKI[1]

Appeal 2018-000126
Application 13/141,315
Technology Center 1600

Before DONALD E. ADAMS, ERIC B. GRIMES, and RICHARD M. LEBOVITZ, *Administrative Patent Judges*.

LEBOVITZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims directed to a method of detecting a single nucleotide polymorphism (SNP) in a human patient. The Examiner rejected the claims as obvious under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 134(a), Appellants appeal the Examiner's determination that the claims are unpatentable. We have jurisdiction under 35 U.S.C. § 6(b). We affirm the Examiner's decision.

STATEMENT OF THE CASE

The Examiner finally rejected claims 21 and 27–29 under pre-AIA 35 U.S.C. 103(a) as obvious in view of De Ferrari et al. (*Common genetic*

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[1] The Appeal Brief ("Appeal Br."; entered June 2, 2017) identifies Robert Bosch Gesellschaft mbH für medizinische Forschung as the real party in interest. Appeal Br. 2.

variation within the Low-Density Lipoprotein Receptor-Related Protein 6 and late-onset Alzheimer's disease, Proc. Nat'l Acad. Sci., 104(22):9434–39, 2007) ("De Ferrari"). in view of Morten (US 6,316,196 B1, issued Nov. 13, 2001). Final Act. 9; Ans. 2.

Claim 21, the only independent claim on appeal, is reproduced below:

> 21. A method of detecting a single nucleotide polymorphism (SNP) for rs2302685 in a human patient, the method comprising:
>
> obtaining a biological specimen of the human patient; and
>
> detecting whether the SNP for rs2302685 is present in the biological specimen by contacting the biological sample with an allele-specific polynucleotide probe and detecting binding between the SNP and the probe, wherein the probe is configured to detect position 101 of a nucleic acid sequence of SEQ-ID-No. 10, wherein the SNP is detected in the LRP6 gene, which encodes a protein associated with the Wnt signaling pathway in Paneth cells.

DISCUSSION

The Examiner found that De Ferrari describes detecting LRP6 SNP (single nucleotide polymorphism) rs2302685. Ans. 2. LRP6 is the Low-Density Lipoprotein Receptor-Related 6 gene. De Ferrari 9434 (abstract). De Ferrari describes a single nucleotide polymorphism Ile-1062 → Val in exon 14 ("14e") in the LRP6 gene, which is the same rs2302685 SNP polymorphism that is claimed. De Ferrari 9434 (col. 2 under "Results"). The polymorphism is associated with a risk for Alzheimer's disease. De Ferrari 9434 (abstract).

The Examiner found that De Ferrari does not disclose how the rs2302685 polymorphism is detected, but found that Morten discloses various techniques for detecting variant nucleotides as required by the

claims. Ans. 2. The Examiner concluded that it would have been obvious to one of ordinary skill in the art to have detected the rs2302685 SNP described by De Ferrari utilizing any one of the techniques described by Morten with a reasonable expectation of success. Ans. 2.

Appellants argue that Morten "does not teach or suggest the specific probe as claimed in claim 21 to detect specifically SEQ-ID-No. 10." Appeal Br. 4. Appellants state that Merton describes detecting variants in the LTC_4 synthase gene, and not the claimed SNP variant. Reply Br. 2. Appellants contend that the claimed probe is not "obvious or motivated from either reference, alone or in combination." Appeal Br. 4.

Appellants' arguments do not persuade us that the Examiner erred in rejecting claim 21 as obvious in view of De Ferrari and Morten. The Examiner did not rely on Morten for its teaching of a probe to the claimed SNP asserted by Appellants. Rather, as discussed above, the Examiner cited Morten for disclosing well known techniques for identifying nucleotide mutations and polymorphisms. Ans. 2. Appellants did not identify a defect in the Examiner's finding, which we find to be supported by Morten's disclosure (Morten 3:39–4:35).

As to Appellants' statements regarding the obviousness of the claimed probe of SEQ ID NO:10, as found by the Examiner, the claimed polymorphism at position 101 of SEQ ID NO:10 *is* the polymorphism of rs2302685 disclosed by De Ferrari. Ans. 3. Appellants did not dispute this fact. Furthermore, as established by the Examiner, De Ferrari provides motivation to detect this known polymorphism because it is "located in a susceptibility region for late onset Alzheimer's disease," making it a useful SNP to screen for susceptibility for the disease. Ans. 3. Appellants contend

that there was no motivation to detect the known SNP, but did not identify a flaw in the Examiner's reasoning or fact-finding.

For the foregoing reasons, the obviousness rejection of claim 21 is affirmed. Claims 27–29 were not argued separately and thus fall with claim 21. 37 C.F.R. § 41.37(c)(1)(iv).

TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED