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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/012,276	05/10/2012	5612179	MER 11-01RE	9345

22442 7590 06/28/2012

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EXAMINER	
ART UNIT	PAPER NUMBER

DATE MAILED: 06/28/2012

Please find below and/or attached an Office communication concerning this application or proceeding.

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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

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EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/012,276*.

PATENT NO. *5612179*.

ART UNIT *3991*.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Order Granting / Denying Request For Ex Parte Reexamination	Control No.	Patent Under Reexamination
	90/012,276	5612179
	Examiner	Art Unit
	PADMASHRI PONNALURI	3991

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The request for *ex parte* reexamination filed *10 May 2012* has been considered and a determination has been made. An identification of the claims, the references relied upon, and the rationale supporting the determination are attached.

Attachments: a)☐ PTO-892, b)☒ PTO/SB/08, c)☐ Other: _____

1. ☒ The request for *ex parte* reexamination is GRANTED.

RESPONSE TIMES ARE SET AS FOLLOWS:

For Patent Owner's Statement (Optional): TWO MONTHS from the mailing date of this communication (37 CFR 1.530 (b)). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).**

For Requester's Reply (optional): TWO MONTHS from the **date of service** of any timely filed Patent Owner's Statement (37 CFR 1.535). **NO EXTENSION OF THIS TIME PERIOD IS PERMITTED.** If Patent Owner does not file a timely statement under 37 CFR 1.530(b), then no reply by requester is permitted.

2. ☐ The request for *ex parte* reexamination is DENIED.

This decision is not appealable (35 U.S.C. 303(c)). Requester may seek review by petition to the Commissioner under 37 CFR 1.181 within ONE MONTH from the mailing date of this communication (37 CFR 1.515(c)). **EXTENSION OF TIME TO FILE SUCH A PETITION UNDER 37 CFR 1.181 ARE AVAILABLE ONLY BY PETITION TO SUSPEND OR WAIVE THE REGULATIONS UNDER 37 CFR 1.183.**

In due course, a refund under 37 CFR 1.26 (c) will be made to requester:

a) ☐ by Treasury check or,

b) ☐ by credit to Deposit Account No. _____, or

c) ☐ by credit to a credit card account, unless otherwise notified (35 U.S.C. 303(c)).

cc:Requester (if third party requester)

Reexamination: Granting of Request

Procedural Posture:

The Third Party Request filed on 5/10/12 for *ex parte* reexamination of claims 1-18 and 26-32 of United States Patent Number 5,612,179 to Simons is acknowledged.

Decision Granting the Order

A substantial new question of patentability affecting claims 1-18 and 26-32 of United States Patent Number 5,612,179 (the `179 patent) is raised by the request for reexamination.

Since requester did not request reexamination of **claims 19-25, 33-36** and did not assert the existence of a substantial new question of patentability (SNQ) for claims 19-25, 33-36 (see 35 U.S.C. § 302; see also 37 CFR 1.510b and 1.515), claims 19-25, 33-36 will not be reexamined (see MPEP 2240).

Status of Claims

Claims 1-18 and 26-32 of the `179 patent are currently subject to reexamination proceeding.

Claims 19-25 and 33-36 are not reexamined.

Information Disclosure Statement

The Information disclosure statement (PTO/SB/08) filed on 4/30/12 is considered.

Priority

The current `179 patent was issued from application 07/949,652, filed on September 23, 1992;

Which is a Continuation of application 07/551,239, filed on July 11, 1990, issued as US Patent 5,192,659;

Which is a Continuation-in-part of application 07/405,863, filed on January 16, 1990, now abandoned;

Which is a Continuation-in-part of application 07/405,499, filed on September 11, 1989;

Which is a Continuation-in-part of application 07/398,217, filed on August 25, 1989, now abandoned.

The Third Party Requester on pages 20-30 of the request (filed on 5/10/12) argued that the present `179 patent claims 1-18 and 26-36 are only entitled to the filing date (September 23, 1992) of the application 07/949,652, which is issued as the current `179 patent. The Requester argued that the limitations of the instant claims are broader than the disclosure of the applications in the lineage of the `179 patent. The Requester stated that since the present `179 patent claims are only entitled the filing date of September 23, 1992, the EP 414469 (Exhibit H), which corresponds to the `179 patent but was published February 27, 1991 is available as prior art.

The Third Party Requester's assertions are considered. Initially, it is noted since the application 07/949,652 (the current `179 patent) is a continuation of application 07/551,239 (US Patent 5,192,659), filed on July 11, 1990, the specification of the present `179 patent and the `239 application appear to be the same. As such, the present `179 patent claims are entitled to at least the priority date of July 11, 1990, the filing date of the 07/551,239 application. Thus, the EP 469 (the counterpart of the present `179 patent) which was published on February 27, 1991 (after July 11, 1990) is not prior art to the present claims.

Further, since all the relevant documents relied upon by the Requester for establishing substantial new question of patentability were published prior to August 25, 1989, the effective filing date for the present claims in the `179 patent is not addressed in this Order.

Scope of Reexamination

*37 C.F.R. 1.552 Scope of **reexamination** in ex parte reexamination proceedings.*

(a) Claims in an *ex parte* reexamination proceeding will be examined on the basis of patents or printed publications and, with respect to subject matter added or deleted in the reexamination proceeding, on the basis of the requirements of 35 U.S.C. **112**.

(b) Claims in an *ex parte* reexamination proceeding will not be permitted to enlarge the scope of the claims of the patent.

(c) Issues other than those indicated in paragraphs (a) and (b) of this section will not be resolved in a reexamination proceeding. If such issues are raised by the patent owner or third party requester during a reexamination proceeding, the existence of such issues will be noted by the examiner in the next Office action, in which case the patent owner may consider the advisability of filing a reissue application to have such issues considered and resolved.

The reexamination proceeding provides a complete reexamination of the patent claims on the basis of prior art patents and printed publications. Issues relating to **35 U.S.C. 112** are addressed only with respect to new claims or amendatory subject matter in the specification,

claims or drawings. Any new or amended claims are examined to ensure that the scope of the original patent claims is not enlarged, i.e., broadened. See **35 U.S.C. 305**. See MPEP 2258.

The Requester argued that the present '179 patent claims 1-18 and 26-32 fail to meet the requirement of 35 U.S.C. 112, first and second paragraphs. Further the Requester also argued that the present claims 1-18 and 26-32 are not patent eligible subject matter under 35 USC 101 (see pages 20-30 of the 5/10/12 request).

According to 37 CFR 1.552, the Requester's assertions regarding the 35 USC 112 rejections and 35 USC 101 rejections of the present claims 1-18 and 26-32 are clearly outside the scope of reexamination and thus have no bearing on raising SNQ.

Substantial New Question of Patentability (SNQ) Raised By the Request

For "a substantial new question of patentability" to be present, it is only necessary that:
A. The prior art patents and/or printed publications raise a substantial question of patentability regarding at least one claim i.e. the prior art teaching is such that there is a substantial likelihood that a reasonable examiner would consider the teaching to be important in deciding whether or not the claim is patentable; and it is not necessary that the prior art establish a prima facie case of unpatentability and;
B. The same question of patentability as to the claim has not been decided by the Office in a previous examination or pending reexamination of the patent or in a final holding of invalidity by the Federal Courts in a decision on the merits involving the claim. See MPEP 2242.

For a reexamination that was ordered on or after November 2, 2002 (the date of enactment of Public Law 107-273; see Section 13105, of the Patent and Trademark Office Authorization Act of 2002), reliance *solely* on old art (as the basis for a rejection) does not necessarily preclude the existence of a substantial new question of patentability (SNQ) that is based exclusively on that old art. Determinations on whether a SNQ exists in such an instance shall be based upon a fact-specific inquiry done on a case-by-case basis. For example, a SNQ may be based solely on old art where the old art is being presented/viewed in a new light, or in a different way, as compared with its use in the earlier concluded examination(s), in view of a material new argument or interpretation presented in the request. MPEP 2258.01.

The Simons '179 Patented Invention

Claims 1-18 and 26-32 are currently subject to reexamination proceedings. Independent claims 1, 9 and 26 are reiterated below.

Claim 1. A method for detection of at least one coding region allele of a multi-allelic genetic locus comprising:

a) amplifying genomic DNA with a primer pair that spans a non-coding region sequence, said primer pair defining a DNA sequence which is in genetic linkage with said genetic locus and

contains a sufficient number of non-coding region sequence nucleotides to produce an amplified DNA sequence characteristic of said allele; and

b) analyzing the amplified DNA sequence to detect the allele.

Claim 9. A method for detection of at least one allele of a multi-allelic genetic locus comprising:

a) amplifying genomic DNA with a primer pair that spans a non-coding region sequence, said primer pair defining a DNA sequence which is in genetic linkage with said allele and contains a sufficient number of non-coding region sequence nucleotides to produce an amplified DNA sequence characteristic of said allele; and

b) analyzing said amplified DNA sequence to determine the presence of a genetic variation in said amplified sequence to detect the allele.

Claim 26. A DNA analysis method for determining coding region alleles of a multi-allelic genetic locus comprising identifying sequence polymorphisms characteristic of the alleles, wherein said sequence polymorphisms characteristic of the alleles are present in a non-coding region sequence, said non-coding region sequence being not more than about two kilobases in length.

Documents cited by the Requester

1. DiLella AG. et al., Nature. 1986 Aug 28-September 3; 322(6082):799-803 ("**DiLella I**") (Exhibit A).

2. DiLella AG. et al., Lancet. 1988 March 5; 1(8584):497-9 ("**DiLella II**") (Exhibit B).

3. Paul H, et al., Hum Genet. 1987 March 75(3):264-8 ("**Paul**") (Exhibit C).

4. Funke et al. J Clin Chem Clin Biochem. 1987 March 25(3): 131- 4 ("**Funke**") (Exhibit D).

5. Koller et al. Proc Natl Acad Sci. U S A. 1984 August 81(16):5175-8 ("**Koller**") (Exhibit E).

6. Stetler et al. Proc Natl Acad Sci U S A. 1985 December 82(23):8100-4("**Stetler**") (Exhibit F).

7. Grumet et al. Mol Biol Med. 1983 December 1 (5): 501 - 9. ("**Grumet**") (Exhibit G).

8. EP414469A2, published February 27, 1991 (hereinafter "**EP469**") (Exhibit H).

9. Nazomi Communications, Inc., v. Samsung Telecommunications, Inc., No. C-10-05545 RMW (ND CA, March 21, 2012 Order Denying Motion for Summary Judgment) (Exhibit 1.1).

10. Smartgene, Inc. v. Advanced Biological Laboratories, SA, Civil Action No. 08-00642 (BAH) (DDC, Memorandum Opinion Granting Partial Summary Judgment, March 30, 2012) (**Smartgene**) (Exhibit 1.2).

11. Webster's Ninth New Collegiate Dictionary, pages 726, 779 (1984) (definitions of "many" and "multi") ("**Webster's**") (Exhibit 1.3).

12. Wolfgang R. Mayr, "The Use of DNA polymorphisms demonstrated by means of the HLA system" Vox Sang 50:193-197 (1986) ("**Mayr**") (Exhibit 1.4).

13. Charles R. Scriver, Human Mutation 28(9), 831-845, 2007 ("**Scriver**") (Exhibit 1.5).

Koller, Grumet and EP 469 were neither cited nor used to reject the claims in the application that resulted as the present `179 patent.

DiLella I, DiLella II and Funke were made of record during the prosecution of the `179 patent but were not used in rejecting the present claims.

Paul, Funke and Stetler were made of record during the previous reexamination proceeding (90/010,318) but were not used to reject the claims.

Webster's (Exhibit 1.3), Mayr (Exhibit 1.4) and Scriver (Exhibit 1.5) are evidentiary references.

Smartgene (Exhibit 1.2) and Exhibit 1.1 are court documents.

EP 469 (Exhibit H) is not prior art to the present claims for the reasons discussed in the "Priority" above.

Discussion of the cited documents and SNQ

1. The Requester considers that a substantial new question of patentability of claims 26-32 of the `179 patent is raised by DiLella I (Exhibit A) alone or in combination with Koller (Exhibit E), Stetler (Exhibit F) and Grumet (Exhibit G).

DiLella I identifies a phenylketonuria (PKU) mutation in the human phenylalanine hydoxylase (*PAH*) gene using a hybridization assay. The mutation is a single base substitution (GT→AT) in the canonical 5`-splice donor site of intron 12 (non-coding region) (see Abstract). DiLella I teaches that the assay uses specific oligonucleotide probes to demonstrate that the

mutation is tightly associated with a specific restriction fragment-length polymorphism haplotype among mutant alleles (see Abstract). DiLella I teaches a full length human *PAH* complementary DNA clone to identify and map eight RFLPs at human *PAH* locus (see page 799 right column).

Stetler defines the polymorphic restriction endonuclease sites within HLA-DRα gene using *Bgl* II and *Eco*RV digests (see Abstract). Stetler further teaches that RFLPs as markers in genetic analysis (see right column in page 8100).

Koller teaches that probes constructed from 3`-untranslated region can be used to specifically identify the segments of DNA that encode HLA-A and B antigens in the human lymphoblastoid cell line 721. Koller teaches that these probes are locus specific in LCL 721 (see Abstract). The pHLA-2a.1 probe, which is specific to HLA-A locus was prepared from the HLA-A2 genomic clone pHLA-2a (see figure 1).

Grumet teaches a DNA probe specific for the HLA-B locus. Grumet teaches that the locus specificity of the probe appears to be derived primarily from a stretch of approximately 180 nucleotides comprising the last (7^{th}) intron of the original *B7* gene. Use of the probe to analyze Southern blots of genomic DNA from unrelated individuals provides the first direct demonstration of intragenic localization of an HLA allele-specific restriction endonuclease site (see Abstract).

There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not claims 26-32 of the `179 patent are patentable. Accordingly, the teachings of DiLella I alone or in combination with Koller, Stetler, Grumet raise a substantial new question of patentability as to claims 26-32 of the `179 patent.

2. The Requester considers that a substantial new question of patentability of claims 1-18 and 26-32 of the `179 patent is raised by DiLella II (Exhibit B) alone or in combination with Koller (Exhibit E), Stetler (Exhibit F) and Grumet (Exhibit G) and further evidentiary references Mayr (Exhibit 1.4) and Scriver (Exhibit 1.5).

DiLella II identifies single base substitutions in two mutant phenylalanine hydroxylase (PAH) alleles that cause phenylketonuria (PKU). The mutation associated with haplotype 3 is caused by a single base substitution at the exon 12/ intron 12 boundary (see the right column in

page 497). DiLella II teaches that the identification of carriers of the mutant alleles was achieved by direct analysis of their genomic DNA samples (see Abstract). The specific amplification of a 245 bp region containing exon 12 and the flanking intronic sequences was attempted with oligonucleotides A and B as primers because this region contains both haplotype 2 and 3 mutation sites (see Figure 1). Primer A is complementary to the antisense DNA strand of intron 11, 58-77 nucleotides upstream of exon 12. Primer B is complementary to the sense DNA strand of intron 12, 33-52 nucleotides downstream of exon 12.

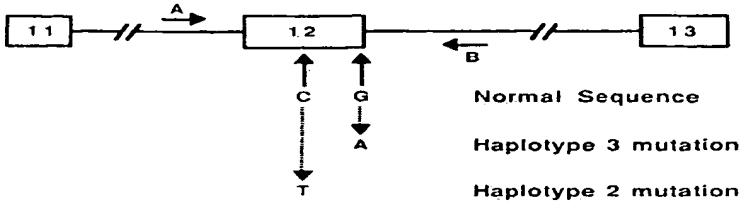

Fig 1.—Schematic representation of 245 bp DNA fragment containing exon 12 and flanking intronic sequences of the PAH gene.

The teachings of Stetler, Koller and Grumet are as discussed above.

The evidentiary reference Mayr demonstrates the use of DNA polymorphism (Restriction fragment length polymorphism) in blood group serology (see Abstract). Mayr discloses the loci of HLA-D region (see the right column in page 193). Mayr teaches that using the genomic DNA for determination of RFLPs reveals polymorphism in the coding and in the non-coding regions of a gene (see the right column in page 194 of Mayr).

The evidentiary reference Scriver teaches mutations in the phenylalanine hydroxylase gene (see Abstract).

There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not claims 1-18 and 26-32 of the `179 patent are patentable. Accordingly, the teachings of DiLella II alone or in combination with Koller, Stetler, Grumet raise a substantial new question of patentability as to claims 1-18 and 26-32 of the `179 patent.

3. The Requester considers that a substantial new question of patentability of claims 26-32 of the `179 patent is raised by Paul (Exhibit C) alone or in combination with Koller (Exhibit E), Stetler (Exhibit F) and Grumet (Exhibit G) and further evidenced by Funke (Exhibit D).

Paul discloses determining the allelic frequency of five different restriction fragment length polymorphisms (RFLPs) in the A-l, C-III, A-IV gene region (see Abstract). The polymorphic sites are with Taq-1 at the 5` end of the A-1 gene, with Msp-1 in the third intron of the A-1 gene, with Pst-1 in the intergenic sequence between the A-1 and C-III genes, with Sst-1 in the 3` end of non-coding region of C-III gene (see the Abstract). The A-1 probe was a genomic probe consisting of a HindIII/Pst-1 fragment and the C-III probe was full length cDNA (see the left column in page 265). A map of the A-1, C-III and A-IV gene region showing the polymorphic sites is depicted in Figure 1.

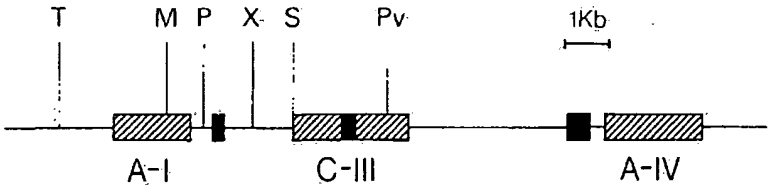

Fig. 1. Map of the A-1, C-III, A-IV gene region showing the polymorphic restriction sites. T = Taq-1, P = Pst-1, X = Xmn-1, S = Sst-1, P = Pst-1, Pv = Pvu-II, M = Msp-1. ▨, Genes; ■, repetitive elements

Funke discloses detection of a new Msp I restriction fragment length polymorphism (RFLP) in the Apolipoprotein A-I gene. Funke teaches that seven RFLPs have been identified within the genes for apolipoproteins A-1, C-III and A-IV which are located next to each other within 15 Kb DNA fragment (see the left column in page 132). Figure 1 shows the MSP-1 polymorphism within the apolipoprotein A-1 gene (see page 133).

The teachings of Stetler, Koller and Grumet are as discussed above.

There is a substantial likelihood that a reasonable examiner would consider these teachings important in deciding whether or not claims 26-32 of the `179 patent are patentable. Accordingly, the teachings of Paul alone or in combination with Funke, Koller, Stetler, Grumet raise a substantial new question of patentability as to claims 26-32 of the `179 patent.

Conclusion

In view of the above, the request for reexamination is **GRANTED.**

Claims 1-18 and 26-32 of United States Patent Number 5,612,179 will be reexamined.

Claims 19-25 and 33-36 are not reexamined.

Waiver of Rights to File Patent Owner Statement

In a reexamination proceeding, Patent Owner may expedite the reexamination proceeding by filing a waive the right under 37 C.F.R. 1.530 to file a Patent Owner Statement. The document needs to contain a statement that Patent Owner waives the right under 37 C.F.R. 1.530 to file a Patent Owner Statement and proof of service in the manner provided by 37 C.F.R. 1.248, if request for reexamination was made by a third party requester, see 37 C.F.R. 1.550(0). The Patent Owner may consider using the following statement in a document waiving the right to file a Patent Owner Statement:

Patent Owner waives the right under 3 7 C.F.R 1.530 to file a Patent Owner Statement.

Patent Owner Amendment

Patent owner is notified that any proposed amendment to the specification and/or claims in this reexamination proceeding must comply with 37 CFR 1.530(d)-(j), must be formally presented pursuant to 37 CFR 1.52(a) and (b), and must contain any fees required by 37 CFR 1.20(c).

Ongoing Duty to Disclose

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 5,612,179 throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

Future Correspondences

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Padmashri Ponnaluri whose telephone number is 571-272-0809. The examiner can normally be reached on Monday through Friday between 7 AM and 3.30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-9900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

All correspondence relating to this Ex parte Reexamination proceeding should be directed to:

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