

Paper No. _____
Filed: January 9, 2024

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.,
Petitioner,

v.

THE CHINESE UNIVERSITY OF HONG
KONG,
Patent Owner.

Case No. IPR2024-00028
Patent No. 11,091,794

**PETITIONER'S OPPOSITION TO PATENT OWNER'S MOTION TO
EXCLUDE
37 C.F.R. §42.64(c)**

I. INTRODUCTION

Patent Owner (PO) moves to exclude EX1047 and EX1048, but its conclusory motion to exclude (MTE) provides no reasonable basis why the Board should do so. EX1047 was timely introduced at Dr. Koo's deposition for impeachment and is responsive to Dr. Koo's direct testimony mischaracterizing the prior art, including PacBio's White paper (EX1016). And PO provides no reason to doubt that EX1047 is the paper it appears to be. EX1048 is a PacBio Press Release. The MTE makes a boilerplate statement EX1048 was not authenticated but provides no basis to believe the EX1048 Press Release is not what it appears to be.

Accordingly, Patent Owner's motion should be *denied*.

II. EX1047 – DNA MODIFICATION DETECTION WITH SMRT® SEQUENCING USING R

A. EX1047 is Timely Impeachment Evidence and Properly Responsive to PO's Erroneous Teaching Away Argument

Without analysis, PO's MTE (2) asserts "the Board should exclude Exhibit 1047 as untimely." EX1047 was properly introduced at Dr. Koo's deposition and is impeachment evidence to Dr. Koo's direct testimony regarding the prior art, including PacBio's White paper (EX1016). EX1047 is discussed in PacBio's White Paper but was ignored in Dr. Koo's uncritical review. Moreover, EX1047 is properly responsive to erroneous argument by PO and Dr. Koo alleging that the prior art "teaches away" from the claim 1 "input data structure."

In his declaration, Dr. Koo argued the prior art “teaches away from the use of PW in an input data structure.” *See, e.g.*, EX2041, ¶141; *see also* POR 31-32. Dr. Koo cited to PacBio’s White Paper specifically in stating “[b]ecause of these teachings” a POSA would be “discouraged” from using PW for base modification detection. *Id.* Dr. Koo also falsely stated that PacBio’s White Paper “controlled for nucleotide identity by making it constant” and “does not disclose using PW.” *Id.*, ¶142. At cross-examination, Dr. Koo was confronted over his mischaracterization of PacBio’s White Paper and his failure to critically review its contents. EX1049, 114:16-128:15.

As confirmed at Dr. Koo’s deposition, PacBio’s White Paper describes, *inter alia*, “a typical experiment for detecting DNA base modifications” and cites to EX1047. EX1016, 4.¹ PacBio’s White Paper discusses such an experiment as using “the bioinformatics tools to perform kinetic analysis for base modification,” citing footnote 9. *Id.* Footnote 9 refers to the paper ““DNA Modification Detection with SMRT Sequencing using R,” which is the paper introduced at the deposition and submitted to the Board as EX1047 *Id.*, 5. EX1049, 121:16-122:18.

¹ The first identified step in a “typical experiment” is to “obtain native DNA” (not “controlled” sequence) for SMRT sequencing. EX1016, 4.

EX1047 is cited in PacBio’s White Paper and is both relevant and responsive to Dr. Koo’s declaration testimony mischaracterizing prior art from the petition. *See, e.g.*, EX1047, 2 (“The kinetic measurements that we discuss in this document include IPD and pulse width.”), 5 (“For our work, the most pertinent datasets are: AlnArray, IPD (interpusle duration), and PulseWidth.”), 9 (“Figure 4: IPD and PulseWidth By Base”), 11 (“[W]e always store the data (e.g., alignments, IPDs, pulse widths, etc.)....”). *Anacor Pharms., Inc. v. Iancu*, 889 F.3d 1372, 1380-81 (Fed. Cir. 2018) (quoting *Genzyme Therapeutic Prods. Ltd. P’ship v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1369 (Fed. Cir. 2016)). (“[T]he petitioner in an inter partes review proceeding may introduce new evidence after the petition stage if the evidence is...used ‘to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness.’”).

The MTE ignores that EX1047 is also responsive to PO’s argument alleging that the prior art “teaches away” from the claim 1 “input data structure.” It is well-established that Petitioner may introduce evidence rebutting a teaching away argument raised in the Patent Owner Response. *Idemitsu Kosan Co. v. SFC Co.*, 870 F.3d 1376, 1381 (Fed. Cir. 2017) (reply evidence may respond to a teaching-away contention in patent owner's response); *see also Sanofi-Aventis Deutschland GMBH v. Mylan Pharms. Inc.*, 791 F. App’x 916, 925 (Fed. Cir. 2019) (confirming

the holding of *Idemitsu* that “reply evidence may respond to teaching-away contention in patent owner’s response”).

The MTE (2) statement that PO was deprived of “a full and fair opportunity to address the evidence” is not true and misses the point. The admitted fact that Dr. Koo ignored prior art like EX1047—which is cited in PacBio’s White Paper and contradicts false statements in his declaration—demonstrates the unreliability of his direct testimony and impeachment value of EX1047. Furthermore, the MTE (1) admits EX1047 was introduced at Dr. Koo’s deposition, prior to PO’s sur-reply. Thus, PO had opportunity to address EX1047 with its expert, including (1) in the POR materials when addressing PacBio’s White Paper; (2) both during cross-examination and any redirect; and (3) in subsequent briefing.²

The MTE (2) argument that “[t]he issues purportedly addressed by Exhibit 1047 were clearly raised earlier in the proceeding” further illustrates that its request to exclude EX1047 is nonsensical. *See Chamberlain Grp. v. One World Techs., Inc.*, 944 F.3d 919, 925 (Fed. Cir. 2019) (“Parties are not barred from

² The petition materials submitted a Declaration of Ms. Novbakhtian (EX1041), corroborating the public availability of PacBio’s White Paper. Patent Owner deposed Ms. Novbakhtian regarding PacBio’s White Paper but chose not to inquire about reference 9 (EX1047) or submit the deposition transcript to the Board.

elaborating on their arguments on issues previously raised.”). Indeed, PacBio’s White Paper was included in the petition materials but mischaracterized by PO and Dr. Koo. EX1047 is cited in PacBio’s White Paper but not considered by Dr. Koo in his uncritical and incomplete review of the prior art. Petitioner could not have reasonably foreseen that Dr. Koo would fail to critically analyze the evidence of record, thereby submitting false testimony to the Board.

Accordingly, PO’s conclusory argument that EX1047 was not timely submitted is unsupported and wrong.

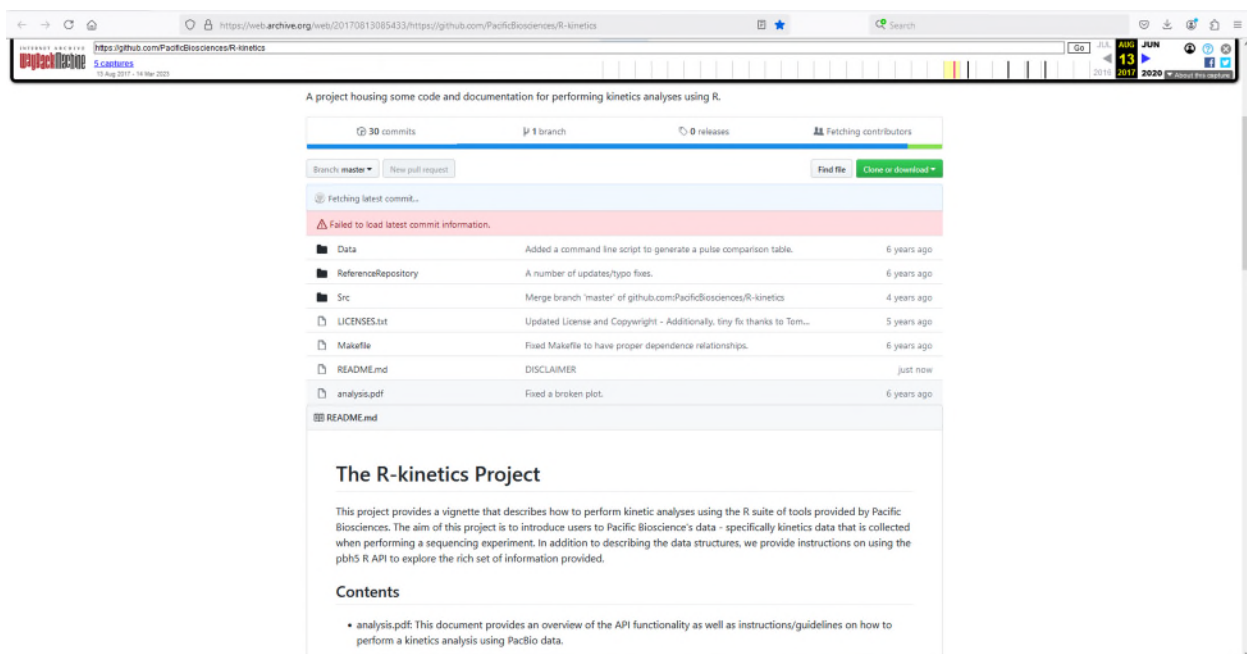
B. Dr. Koo Confirmed EX1047 is Identified in PacBio’s White Paper

The MTE (2-3) questions whether there is “evidence sufficient” to demonstrate EX1047 “is what [Petitioner] claims it is.” EX1047 is identified and discussed in PacBio’s White Paper (EX1016), as confirmed by Dr. Koo at his deposition. The White Paper, undisputedly published years prior to the ’794 patent, cites EX1047 and even provides a hyperlink where the document was obtainable. The “Distinctive Characteristics and the Like” of EX1047 when “taken together with all the circumstances” clearly confirm that EX1047 is what it appears to be. FRE 901(b)(4). PO’s MTE fails to demonstrate otherwise.

As discussed above, PacBio’s White Paper (EX1016) describes “a typical experiment for detecting DNA base modifications” using “the bioinformatics tools to perform kinetic analysis for base modification,” citing footnote 9. *Id.* Footnote 9

refers to the paper “DNA Modification Detection with SMRT Sequencing using R,’ found at <https://github.com/PacificBiosciences/R-kinetics>.” *Id.*, 5. As Dr. Koo confirmed in his deposition, the title of EX1047 and the title provided by EX1016 “match up.” EX1049, 121:16-122:18. Likewise, the document bears a 2011 date on its face, consistent with EX1016’s 2012 publication date. *See id.*, 121:14-15; EX1047, 1, 30 (2011 copyright date); EX1016, 5 (copyright 2012); EX1041, ¶6.

The location of EX1047 also matches up with the location specified in footnote 9 of EX1016. The Internet Archive’s Wayback Machine has an August 13, 2017, archive of the site, <https://github.com/PacificBiosciences/R-kinetics>, at <https://web.archive.org/web/20170813085433/https://github.com/PacificBiosciences/R-kinetics>. This archived webpage is shown in the screenshot below.



Following the link labeled “analysis.pdf” allows a user to download EX1047. As Petitioner’s Exhibit list indicates, EX1047 was archived by the Internet Archive’s Wayback Machine at http://web.archive.org/web/20170813094741if_/https://raw.githubusercontent.com/PacificBiosciences/R-kinetics/master/analysis.pdf, where it remains available to download today. As explained in the First and Second Declarations of Nathaniel E. Frank-White, the Internet Archive automatically maintains archived records as part of its regular business, and the URL for each document reflects its date of archiving. EX1039; EX1040. Thus, for example, the URL of EX1047 indicates that on August 13, 2017, EX1047 was retrieved and archived from the URL <https://raw.githubusercontent.com/PacificBiosciences/R-kinetics/master/analysis.pdf>. See EX1039; EX1040.

The MTE provides no indication PO or its expert attempted to locate or review the paper (EX1047) identified at footnote 9 from PacBio’s White Paper. Such pervasive uncritical review of the record underscores the unreliability of PO’s arguments and impeachability of its witness. Dr. Koo confirmed the carelessness of his prior art review in the context EX1047 and that document is admissible impeachment evidence. Regardless, PO provides no reason to doubt that EX1047 is the paper it appears to be.

III. EX1048 – PACIFIC BIOSCIENCES PRESS RELEASE – NEW SEQUEL II SYSTEM, FEATURING ~8 TIMES THE DNA SEQUENCING DATA OUTPUT

The MTE (3-4) asserts EX1048 was not authenticated but provides virtually no analysis and no basis to believe the EX1048 Press Release is not what it appears to be. The “[d]istinctive Characteristics and the Like” of EX1048 when “taken together with all the circumstances” clearly confirm that EX1048 is what it appears to be. FRE 901(b)(4). PO fails to demonstrate otherwise.

In its POR (50-52), PO cited a 2020 earnings call where Mr. Henry at PacBio discussed its then recently released HiFi sequencing on its Sequel II device.³ Additional PacBio documents, including the EX1048 Press Release, praise the high accuracy sequencing and long read length of PacBio’s technology in the timeframe of cited earnings call. *See, e.g.*, EX1032, 1 (“We report the optimization of circular consensus sequencing (CCS) to improve the accuracy of single-

³ At his deposition, Dr. Koo confirmed he had not critically reviewed this aspect of the record and had limited familiarity with PacBio’s HiFi sequencing. EX1049, 36:4-23. (“Are you familiar with PacBio’s HiFi sequencing product? A: I’m – I’m not familiar.”). PO’s “industry praise” argument, like all its secondary considerations arguments, is disconnected from the broad scope of its claims and lacks objective support.

molecule real-time (SMRT) sequencing (PacBio) and generate highly accurate (99.8%) long high-fidelity (HiFi) reads with an average length of 13.5 kilobases (kb).”); EX1048, 2 (“Building upon the October 2018 release, which delivered highly accurate long reads (HiFi reads), the Sequel II System also produces these Sanger-quality reads (>99.9% accuracy), now at approximately eight times the scale.”); *see also* Reply, 24-25.

As Petitioner’s Exhibit list indicates, EX1048 was retrieved from the URL https://www.pacb.com/press_releases/pacific-biosciences-launches-new-sequel-ii-system-featuring-8-times-the-dna-sequencing-data-output/. The relevant content of EX1048 is both undisputed and corroborated by other published evidence of record, such as the Wenger Paper (EX1032) discussed above. Moreover, PO has itself submitted a press release from the same website as evidence, confirming the press releases’ authenticity. *Compare* EX1048, *with* EX2018 (sourced from same website and showing similar formatting elements); Fed. R. Evid. 901(b)(3).

PO provides no reason to doubt that EX1048 is the Press Release it appears to be. Accordingly, the MTE provides insufficient basis to exclude EX1048.

IV. CONCLUSION

For the foregoing reasons, PO’s motion to exclude EX1047 and EX1048 should be denied.

Respectfully submitted,

Dated: January 9, 2024

/ Michael T. Rosato /
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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Petitioner's Opposition to Patent Owner's Motion to Exclude was served on January 9, 2025, at the following electronic service addresses:

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