

Filed on behalf of: **Junior Party, Broad**

Paper No. _____

By: Steven R. Trybus
Locke Lord LLP
111 South Wacker Drive
Chicago, IL 60606
Telephone: 312-443-0699
Steven.Trybus@lockelord.com

By: Raymond N. Nimrod
Zachariah Summers (*pro hac*)
Quinn Emanuel Urquhart & Sullivan, LLP
51 Madison Avenue
New York, NY 10010
Telephone: 212-849-7000
raynimrod@quinnemanuel.com
zachsummers@quinnemanuel.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**THE BROAD INSTITUTE, INC., MASSACHUSETTS INSTITUTE OF
TECHNOLOGY, and PRESIDENT AND FELLOWS OF
HARVARD COLLEGE,**

Patents 8,697,359; 8,771,945; 8,795,965; 8,865,406; 8,871,445; 8,889,356;
8,889,418; 8,895,308; 8,906,616; 8,932,814; 8,945,839; 8,993,233; 8,999,641; and
9,840,713; and Applications 14/704,551 and 15/330,876,

Junior Party,

v.

SIGMA-ALDRICH CO., LLC,

Application 15/456,204,

Senior Party.

Patent Interference No. 106,133 (DK)
(Technology Center 1600)

BROAD REPLY 2

TABLE OF CONTENTS

I. PRECISE RELIEF REQUESTED 1

II. DESCRIPTION OF APPENDICES 1

III. INTRODUCTION..... 1

IV. REPLY ARGUMENT 1

 A. Sigma’s Arguments Based On Improper Incorporation By Reference
 Should Be Deemed Waived..... 1

 B. Claim 52 Was And Is Allowable to Broad..... 2

 C. Dependent Claims 53 And 54 Properly Correspond To Proposed Count 3..... 3

 D. Claims 52-54 Have An Adequate Written Description In Zhang B1 4

 E. Claims 52-54 Are Patentable To Broad Over Sigma P1 6

 F. Sigma’s Previously Rejected AIA Argument Is Irrelevant; The 403
 Application Is Not An AIA Application..... 6

V. CONCLUSION..... 10

TABLE OF AUTHORITIES

Cases

<i>Amgen Inc. v. Sanofi</i> , 872 F.3d 1367 (Fed. Cir. 2017).....	6
<i>Application of Anderson</i> , 471 F.2d 1237 (C.C.P.A. 1973).....	7
<i>Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.</i> , 334 F.3d 1294 (Fed. Cir. 2003).....	9
<i>Commonwealth Scientific and Indus. Research Organisation v. Buffalo Technology (USA), Inc.</i> , 542 F.3d 1363 (Fed. Cir. 2008).....	8, 9
<i>Dart Industries, Inc. v. Banner</i> , 636 F.2d 684 (D.C. Cir. 1980).....	8
<i>DeSilva v. DiLeonardi</i> , 181 F.3d 865 (7th Cir. 1999).....	2
<i>Giant Powder Co. v. Cal. Powder Works</i> , 98 U.S. 126 (1878).....	8
<i>Hologic, Inc. v. Smith & Nephew, Inc.</i> , 884 F.3d 1357 (Fed. Cir. 2018).....	4, 10
<i>Studiengesellschaft Kohle, M.B.H. v. Shell Oil Co.</i> , 112 F.3d 1561 (Fed. Cir. 1997).....	4

Statutory Authorities

35 U.S.C. § 119.....	7, 8
35 U.S.C. § 120.....	4, 6, 7, 10
35 U.S.C. § 121.....	7, 8
35 U.S.C. § 365.....	7, 8

Rules and Regulations

37 CFR 41.201.....	10
--------------------	----

1 **I. PRECISE RELIEF REQUESTED**

2 Junior Party, The Broad Institute, Inc., Massachusetts Institute of Technology, and
3 President and Fellows of Harvard College (collectively, “Broad”), requests that if the PTAB grants
4 Broad Motion 1, it also grant Broad Motion 2 and add claims 52-54 of U.S. Application 16/177,403
5 (“403 application”).

6 **II. DESCRIPTION OF APPENDICES**

7 Appendix 1 is a list of Exhibits. Appendix 2 is a Statement of Material Facts.

8 **III. INTRODUCTION**

9 Claims 52-54 of Broad’s 403 application recite methods to cleave both strands of DNA in
10 a eukaryotic cell and repair them through integration of a template polynucleotide (“Donor
11 Template Integration” claims). These Donor Template Integration claims should be added to this
12 Interference if Broad Motion 1 is granted and PTAB re-declares the interference with Proposed
13 Count 3. Sigma’s opposition is based on a rejection of the PTO’s determination that these claims
14 are allowable, a misreading of the claims that fails to give them their broadest reasonable
15 interpretation, and spurious arguments about alleged lack of support for the claims in Zhang B1.
16 As set out below, these arguments are contrary to the record and unsupported by the law.

17 **IV. REPLY ARGUMENT**

18 **A. Sigma’s Arguments Based On Improper Incorporation By Reference Should**
19 **Be Deemed Waived**

20 In Opposition 2, Sigma improperly incorporates by reference *over 25 pages* from its
21 Opposition 1 as the sole basis for a number of arguments:

- 22 • From 2:12-3:13, Sigma incorporates by reference over nine pages of argument in its
23 Opposition 1 that claim 52 was allegedly not allowable when Broad filed Motion 2.
- 24 • From 6:23-7:8, Sigma incorporates by reference another 13 pages from Opposition 1 that

1 claims 52-54 are “exceedingly broad.”

- 2 • At 7:10-8:3 and 8:6-22, Sigma incorporates by reference its arguments in Opposition 1 that
3 claims 52-54 are not patentable over Sigma P1 and that the 403 application is allegedly an
4 AIA application, adding another three pages.

5 Sigma’s incorporation by reference directly violates Standing Order ¶ 106.2, which states
6 that “[i]ncorporation by reference and combined papers are prohibited.... Incorporation of
7 arguments by reference amounts to a self-help increase in the length of the brief and a pointless
8 imposition on the Board’s time.” Sigma’s Opposition to Motion 2 would be significantly over the
9 page limit if the 25 pages of incorporated Opposition 1 argument were actually set forth in
10 Opposition 2. The arguments set out in the bullet points above should be all deemed waived. *See*
11 Standing Order ¶ 106.2 (citing *DeSilva v. DiLeonardi*, 181 F.3d 865, 866-67 (7th Cir. 1999)
12 (refusing to consider arguments incorporated by reference)).

13 Accordingly, these arguments should all be deemed waived. However, even if considered
14 on the merits, they would still fail for the reasons discussed below.

15 **B. Claim 52 Was And Is Allowable to Broad**

16 From 2:12-3:13, Sigma (improperly incorporating its Opposition 1 argument) argues that
17 Claim 52 allegedly not allowable when Broad filed Motion 2, despite the fact that claims 52-54
18 were indicated as allowable as entered on November 15, 2021, before Broad filed its Motion 2.
19 Opp. 2 at 2:12-3:13. The crux of Sigma’s argument is that the Examiner did not expressly include
20 the word “allowed” in the office action entering the final amendments to Claim 52 on November
21 15, 2021. Ex. 2075 (Part 1) (October 5, 2021 Misc. Action) at 2, 19-20. The first response is that
22 on March 7, 2022, the Examiner, prior to Sigma’s Opposition 2, *sua sponte* entered an office action
23 expressly noting Claim 52 was allowable, mooting Sigma’s argument. Ex. 1521 (March 7, 2022
24 Misc. Action) (“All claims are allowable.”); MFs 17-18.

1 The second response is that Claim 52 was allowable on November 15, 2021 when Broad’s
2 proposed amendments were entered by the Examiner into the already allowable Claim 52. This is
3 shown by the fact that the initial Claim 52 was indicated as allowable on October 5, 2021, and then
4 the Examiner entered the final amendments on November 15, 2021 (Ex. 2075 (Part 1) (October 5,
5 2021 Misc. Action) at 2, 19-20), demonstrating the allowability of the amendments. Further,
6 nothing in the file history changed between these two events—i.e., Broad submitted no further
7 arguments or amendments. Thus, the claim was *allowable as entered* on November 15, 2021, as
8 confirmed by the Examiner’s recent March 7, 2022 action specifically stating that “[a]ll claims are
9 allowable.” Ex. 1521 (March 7, 2022 Misc. Action) at 2.

10 **C. Dependent Claims 53 And 54 Properly Correspond To Proposed Count 3**

11 From 3:15-5:10, Sigma contests adding dependent claims 53 and 54 to the Interference
12 because, according to Sigma, Broad failed to show these claims correspond to Claim 52, from
13 which they depend. Opp. 2 at 3:15-5:10. Sigma also contends Broad failed to show these claims
14 are obvious over Claim 52. The response is that while claims 52-54 should all be added, adding
15 Claim 52 alone would suffice because it is the Broad half of Proposed Count 3. The further
16 response is that, as set out in Broad’s opening motion, independent Claim 52 recites the use of a
17 CRISPR-Cas9 system to cleave both strands of DNA in a eukaryotic cell and repair them through
18 integration of a template polynucleotide. Claim 52 is generic as concerns the RNA and so
19 encompasses both dualRNA and sgRNA embodiments. Dependent claims 53 and 54 each specify
20 either dualRNA or sgRNA, respectively.

21 Sigma’s argument that claims 53 and 54 should not be added to the Interference is
22 particularly meritless given that Sigma’s expert witness, Dr. Cannon, opines that Claim 52 renders
23 single guide (“sgRNA”) obvious: “by December 12, 2012, a POSITA would have understood that
24 a claim directed to a sgRNA would have been obvious in view of a claim directed to a generic

1 guide RNA, which would encompass both a single guide RNA and a dual guide RNA (e.g., Claim
2 52).” Ex. 1518 (Cannon Supp. Decl.) ¶ 38. Dr. Cannon similarly opines that as of December 12,
3 2012, “a POSITA would have understood that a claim directed to a dual guide RNA would have
4 been obvious in view of a claim directed to a generic guide RNA.” *Id.* Given these opinions,
5 Sigma’s objection is without merit.

6 **D. Claims 52-54 Have An Adequate Written Description In Zhang B1**

7 At 5:25-7:8, Sigma argues that claims 52-54 lack written description in Zhang B1. Opp. 2
8 at 5:25-7:8. The response is that under § 120, “the test for sufficiency is whether the disclosure of
9 the [earlier] application relied upon reasonably conveys to those skilled in the art that the inventor
10 had possession of the claimed subject matter’ as of that earlier filing date.” *Hologic, Inc. v. Smith*
11 *& Nephew, Inc.*, 884 F.3d 1357, 1361 (Fed. Cir. 2018) (citation omitted). Stated another way, “a
12 claim complies with 35 U.S.C. § 120 and acquires an earlier filing date if, and only if, it could
13 have been added to an earlier application without introducing new matter.” *Studiengesellschaft*
14 *Kohle, M.B.H. v. Shell Oil Co.*, 112 F.3d 1561, 1564 (Fed. Cir. 1997).

15 The claims of the 403 application are entitled to the benefit of Zhang B1. Sigma’s
16 Opposition does not contest that Zhang B1’s E17+ embodiment demonstrates possession of the
17 invention of Proposed Count 3 (independent Claim 52). That is all that is required for the 403
18 application to claim benefit to Zhang B1 here because, as set out in Broad’s opening brief (and not
19 disputed by Sigma), the relevant disclosures of the E17+ embodiment in Zhang B1—a working
20 example of donor template integration—are reproduced *identically* in the specification of the 403
21 application, as well as in its parent 414 application. *See* Broad Mot. 1. Moreover the 403 and 414
22 applications each properly incorporate the entire disclosure of Zhang B1.¹ *See* 2464 (Seeger Decl.)

¹ Sigma denied Broad MFs 39 and 45, but inappropriately and without any explanation.

1 ¶¶ 48-111; Ex. 2075 (Part 14) ¶ [00159], Fig. 4; Ex. 2076 (same). In this way, there is an unbroken
2 chain of identical disclosures supporting the subject matter of claims 52-54. Thus, every
3 application in the chain “reasonably conveys to those skilled in the art that the inventor had
4 possession of the claimed subject matter as of that earlier filing date.” *Hologic*, 884 F.3d at 1361.
5 Claims 52-54 thus “could have been added to [Zhang B1] without introducing new matter.”
6 *Studiengesellschaft*, 112 F.3d at 1564. Zhang B1 provides written description for claims 52-54.

7 Improperly incorporating argument from Opposition 1, Sigma also argues at 6:23-7:8 that
8 claims 52-54 are “exceedingly broad” and so Zhang B1 allegedly does not provide support for the
9 full scope of the invention. Opp. 2 at 6:23-7:8. Sigma does not actually identify any element of the
10 claims not supported by Zhang B1, however, and offers no expert opinion on the matter either.

11 Sigma’s arguments should be deemed waived, but even if addressed, Sigma’s arguments
12 are misguided and bear no relationship to the broadest *reasonable* interpretation of claims 52-54
13 in view of the art and Zhang B1. Claim 52 has essentially the same scope as Sigma’s Claim 31,
14 the Sigma half of Count 1 and Proposed Count 3, but Broad’s claims do not contain the irrelevant,
15 limitation regarding the use of “only” one NLS when reciting the commonly claimed invention.
16 Sigma’s argument is not based on a reasonable construction, but rather improperly reads the claims
17 completely out of context. For instance, Sigma argues that “Broad’s Claim 52 is not limited to a
18 standard CRISPR-Cas system known to a POSITA in December 2012” (Opp. 1 at 25:5-9);
19 however, a POSA would read Claim 52 in light of Zhang B1 and the art as disclosing a system in
20 which, in Sigma’s words, “crRNA is based-paired to tracrRNA to form a guide RNA that guides
21 Cas9 to cleave both strand of a target DNA sequence at sites complementary to a portion of the
22 crRNA sequence” i.e., a CRISPR-Cas system. *Id.* Indeed, Claim 52 expressly recites that the Cas9
23 cleaves a DNA target and, as Sigma’s expert admitted, as of the relevant date, a POSA would have

1 known that Cas9 *must* interact with both a tracrRNA and a crRNA to so cleave a DNA target. Ex.
2 1549 (Cannon Supp. Dep.) at 44:18-45:3; 48:13-49:1. She further acknowledged that the “non-
3 standard” systems (such as those incorporating an aptamer) that Sigma relies on were unknown in
4 the art in 2012 and that she was unaware of Zhang B1 describing any such non-standard systems.
5 *Id.* at 35:4-39:16. Sigma does not give claims 52-54 their broadest *reasonable* interpretation.

6 **E. Claims 52-54 Are Patentable To Broad Over Sigma P1**

7 At 7:10-8:3, Sigma argues that claims 52-54 are not patentable over Sigma P1. Opp. 2 at
8 7:10-8:3. The first response is that Sigma P1 is a provisional and thus by itself is not prior art. Ex.
9 1524 (Sigma P1); *Amgen Inc. v. Sanofi*, 872 F.3d 1367, 1380, n.5 (Fed. Cir. 2017) (“[P]rovisional
10 applications are not themselves prior art under § 102(e)(1) because they are not applications
11 published under § 122(b)”). The second response is that Claim 52 has been determined allowable
12 over the actual art. The third response is that Sigma does not contest that embodiment E17+ is an
13 embodiment of Proposed Count 3. Thus, even if § 102(e)(1) were applicable (it is not), the October
14 5, 2012 manuscript, disclosing the same work, antedates Sigma’s P1, filed December 6, 2012 and
15 therefore would remove as a potential reference any Sigma patent or published application for
16 which Sigma claims the benefit of Sigma’s P1.

17 **F. The 403 Application Is Not An AIA Application**

18 At 8:6-22, Sigma argues that the 403 application that contains claims 52-54 is allegedly an
19 AIA application and thus that those claims should not be added to this Interference. Opp. 2 at 8:6-
20 22. Sigma argues that the 403 application supposedly does not have a continuous § 120 benefit
21 chain to Zhang B1 “because of the addition of ‘wherein the gene product is luciferase’ in the
22 disclosure and claims of the ’322 application [P20]” and thus is an AIA application. Opp. 1 at
23 36:18-38:15.

24 The first response is that the AIA does not support Sigma’s position. U.S. Application

1 61/842,322 (“P20”) is a provisional application. Benefit to a provisional application is claimed
2 through *35 U.S.C. § 119(e)*. Sigma relies on AIA §§ 3(n)(1) and 3(n)(2) for its argument, but these
3 sections only address the effect of benefit claims under three sections—35 U.S.C. §§ 120 (benefit
4 for continuations), 121 (benefit for divisionals), and 365(c) (benefit for international/national
5 applications)—not benefit claims to provisionals under § 119(e). Specifically, § 3(n)(1) indicates
6 that, if an “application for patent” (not a “provisional application”) and any patent issuing thereon,
7 contains or contained at any time, a claim to an invention that has an effective filing date after
8 March 15, 2013, or has a specific reference *under §§ 120, 121 or 365(c)* to a patent or application
9 that contained such a claim, then the AIA applies to that “application for patent.” Provisional
10 applications are not included in this part of the statute (i.e. claims in a provisional are irrelevant to
11 the AIA provision), so there is no statutory basis for Sigma to argue that the 403 application
12 becomes a transitional application subject to the AIA merely because it contains a claim to priority
13 to a provisional application under § 119.

14 Sigma’s argument thus fails on its face because whether or not its allegations about P20
15 and new matter are true (they are not), the 403 application—the relevant application here—
16 contains a claim to benefit of P20 only through § 119(e), not §§ 120, 121 or 365(c) (the sections
17 specified by the AIA). Sigma does not otherwise allege that the 403 application claims an invention
18 with an effective date that is after March 15, 2013 or that the 403 application makes specific
19 reference *under §§ 120, 121, or 365(c)* to any patent or application that contains (or contained)
20 such a claim. Sigma’s argument fails on this independent ground.

21 The second response is that this argument is a rehash of Sigma’s rejected argument in its
22 List of Proposed Motions that “Broad’s involved patents and applications are all AIA patents and
23 applications.” Opp. 1 at 37:27-38:7. Specifically, Sigma repeats the same rejected argument from

1 its Motions List that one application, P20, is subject to the AIA “because of the addition of
2 ‘wherein the gene product is a luciferase’ in the disclosure and claims.” Opp. 1 at 36:19-23. The
3 403 application does recite a separate § 119 benefit claim to P20 that is irrelevant to this AIA
4 argument because P20 is not part of the unbroken chain of benefit to Zhang B1 for claims 52-54,
5 which are fully supported by each application in that chain. Sigma wrongly argues, however, that
6 P20 contains “new matter” and that as a result *every application* that makes reference to P20,
7 whether or not the claims in those applications are supported by the pre-AIA Zhang B1 as well as
8 whether or not P20 is required for benefit, is subject to the AIA rules.

9 In denying authorization for Sigma’s Proposed Motion 1 on these grounds, the PTAB noted
10 that “Sigma does not articulate an argument why the interference was improperly declared.” Order
11 on Motions, Paper 27 at 9. In its Opposition 1, Sigma did not articulate any argument to show that
12 substituting Proposed Count 3 would create an improper interference. And Sigma does not point
13 to any authority for why its baseless allegation that the 403 application should be treated as an AIA
14 application based on P20 is otherwise relevant to whether the claims should be added. There is
15 none. Sigma’s argument can be rejected on this second, independent ground as well.

16 The third response is that Sigma’s argument that P20 includes new matter not present in
17 Broad’s pre-AIA filings is incorrect: the alleged “new matter” Sigma identifies is fully supported
18 by the disclosures in Zhang B1. Sigma’s sole basis for its argument is that Zhang B1 does not
19 contain the *specific* wording “wherein the gene product is luciferase” that is in P20, arguing “[t]his
20 disclosure is not set forth in any of Broad’s pre-AIA applications...” Opp. 1 at 37; Ex. 1518
21 (Cannon Supp. Dec.) ¶ 35. But a verbatim disclosure is not required in an earlier application to
22 avoid the charge of “new matter.” *Application of Anderson*, 471 F.2d 1237, 1244 (C.C.P.A. 1973)
23 (“The question, as we view it, is not whether ‘carrying’ was a word *used* in the specification as

1 filed but whether there is *support* in the specification for employment of the term in a claim....”)
2 (emphasis in original).

3 Instead, the proper test is whether the matter in question “changed the invention,” when
4 compared to the disclosure in Zhang B1. *See Commonwealth Scientific and Indus. Research*
5 *Organisation v. Buffalo Technology (USA), Inc.*, 542 F.3d 1363, 1380 (Fed. Cir. 2008). Prohibited
6 “new matter” is consistently defined as something added to the patent that has the effect of
7 “changing the invention.” *Giant Powder Co. v. Cali. Powder Works*, 98 U.S. 126, 138 (1878);
8 *Dart Industries, Inc. v. Banner*, 636 F.2d 684, 688 (D.C. Cir. 1980). The Federal Circuit has
9 emphasized the similarity of the new matter and written description inquiries, holding that, like
10 written description, the question for new matter is “whether the specification of the original
11 application contained a written description of the invention sufficient to allow persons of ordinary
12 skill in the art to recognize that the inventor invented the subject matter that is claimed in the
13 asserted claims.” *Commonwealth*, 542 F.3d at 1379.

14 Here, Sigma’s contention is that the “new matter” supposedly added to P20 is the phrase
15 “wherein the gene product is luciferase.” But, the question is whether adding those words
16 broadened or changed the invention. It did not because a POSA would understand that the
17 inventors possessed a CRISPR-Cas9 system wherein the targeted gene product is luciferase based
18 on the disclosures of Zhang B1. Luciferase was a well-known reporter gene target at the time, as
19 Sigma’s own expert admitted (Ex. 1549 (Cannon Supp. Dep.) at 21:20-23:13), and Zhang B1
20 ***expressly discloses*** introducing “reporter genes” including “luciferase” in a eukaryotic cell, as for
21 example, a fusion protein to the CRISPR enzyme. Ex. 2001 (Zhang B1) at [0069]. Zhang B1 also
22 discloses examples in which the luciferase gene is not fused to the Cas9 and thus would be
23 expressed as a separate, targetable reporter gene. *Id.* (Cas9 may include “any additional protein

1 sequence, and *optionally* a linker sequence between any two domains.”) (emphasis added). As Dr.
2 Cannon admitted at her deposition, a POSA in 2012 would have known how to design a luciferase
3 reporter experiment testing whether an endonuclease could cleave a DNA target. *Id.* at 23:14-24:9.
4 The combination of this basic knowledge with the express disclosure of “luciferase” reporter genes
5 in Zhang B1 demonstrates possession of the alleged “new matter”.

6 Thus, the invention was not *broadened* or *changed* in P20. Thus, there is no “new matter”
7 issue—rather, as is commonplace, a specific aspect of the original disclosure was spotlighted,
8 clarified, and claimed. *See, e.g. Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 334 F.3d 1294,
9 1302-04 (Fed. Cir. 2003); *Commonwealth*, 542 F.3d at 1381 (finding even broadening change to
10 range did not introduce new matter where “even in the original specification the references to
11 frequency range were not limited.”).

12 **V. CONCLUSION**

13 For the foregoing reasons, if the PTAB grants Broad Motion 1 and re-declares the
14 Interference with Proposed Count 3, Broad respectfully requests the PTAB grant Broad Motion 2.

15
16

17 Dated: April 26, 2022

Respectfully submitted,

18
19
20
21
22
23
24
25
26
27

/Raymond N. Nimrod/
Raymond N. Nimrod
Reg. No. 31,987
Zachariah Summers (*pro hac*)
Quinn Emanuel Urquhart & Sullivan, LLP
51 Madison Avenue
New York, NY 10010
Telephone: 212-849-7000
raynimrod@quinnemanuel.com
zachsummers@quinnemanuel.com

28
29
30

Steven R. Trybus
Reg. No. 32,760
Locke Lord LLP

1
2
3
4
5

111 South Wacker Drive
Chicago, IL 60606
Telephone: (312) 443-0699
steven.trybus@lockelord.com

Counsel for Junior Party

APPENDIX A: LIST OF EXHIBITS CITED

Ex.	Description
Ex. 1518	Supp. Decl. of Paula M. Cannon, Ph.D., dated March 16, 2022
Ex. 1521	16-177,403 Miscellaneous Action, dated July 3, 2022
Ex. 1524	Sigma Application 61/734,256 (“Sigma P1”)
Ex. 1549	Deposition of Paula M. Cannon, Ph.D., dated April 13, 2022 (Cannon Supp. Dep.)
Ex. 2001	U.S. Application 61/736,527, Zhang et al., December 12, 2012.
Ex. 2075	U.S. Patent Application 16/177,403, Zhang et al., dated May 20, 2016 (the ’403 Application)
Ex. 2076	U.S. Patent Application 14/054,414, Zhang et al., dated October 15, 2013 (the ’414 Application)

1 **Response: Admitted**

2 **7.** After consideration, the Examiner entered the Amendments on November 15, 2021
3 and continued suspension of prosecution pending interference. *Id.*

4 **Response: Denied**

1 **SIGMA MATERIAL FACTS & BROAD RESPONSES**

2 **8.** The Board’s consideration of Broad Contingent Motion 2 is contingent upon the
3 grant of Broad Motion 1 (to change the count). Broad Cont. Mot. 2.

4 **Response: Admitted**

5 **9.** The Board authorized the filing of Broad Contingent Motion 2 only to the extent
6 that the Broad claims sought to be added had been determined to be allowable by the Examiner in
7 the prosecution of the ’403 application. Order Authorizing Motions (Paper 27) at 5 (Sept. 20,
8 2021).

9 **Response: Denied; the PTAB authorized Broad Motion 1 to the extent “the Broad**
10 **portion of the count reflects a patented or allowable claim” (Paper 27 at 4).**

11 **10.** Upon filing of Broad Contingent Motion 2 on December 3, 2021, the Examiner
12 had not stated that any of Claims 52-54 of the ’403 application had been determined to be
13 allowable. Ex. 2075; Ex. 1520.

14 **Response: Denied**

15 **11.** On October 5, 2021, before the filing of Broad Contingent Motion 2 on December
16 3, 2021, the Examiner suspended prosecution of the ’403 application for six months. Ex. 2075; Ex.
17 1520.

18 **Response: Admitted**

19 **12.** The prosecution of the ’403 application remains suspended at the time of the filing
20 of this Opposition to Broad Contingent Motion 2 on March 16, 2022.

21 **Response: Admitted**

22 **13.** In Broad Contingent Motion 2, Broad does not cite the one-way obviousness
23 analysis for evaluating whether a claim corresponds to the count. Broad Cont. Mot. 2.

1 **Response: Denied.**

2 **14.** In Broad Contingent Motion 2, Broad does not apply the one-way obviousness
3 analysis for evaluating whether a claim corresponds to the count. Broad Cont. Mot. 2.

4 **Response: Admitted but this was not required.**

5 **15.** In Broad Contingent Motion 2, Broad does not assert that Claim 53 of the '403
6 application would have been obvious in view of Proposed Count 3. Broad Cont. Mot. 2.

7 **Response: Admitted but this was not required.**

8 **16.** In Broad Contingent Motion 2, Broad does not assert that Claim 54 of the '403
9 application would have been obvious in view of Proposed Count 3. Broad Cont. Mot. 2.

10 **Response: Admitted but this was not required.**

11

1 **BROAD ADDITIONAL MATERIAL FACTS**

2 **17.** On March 7, 2022 the Examiner entered an office action expressly confirming
3 claims 52-54 of the 403 application are allowable. Ex. 1521 (March 7, 2022 Misc. Action) at 2
4 (“All claims are allowable.”).

5 **18.** Sigma filed its Opposition 2 on March 16, 2022. *See* Opp. 2.

CERTIFICATE OF FILING AND SERVICE

I hereby certify that on April 26, 2022, a true and complete copy of the foregoing **BROAD REPLY 2** is being filed and served by 8:00 pm ET via the Interference Web Portal (SO ¶ 105.3; Paper 27 at 11). By agreement, service copies are being sent by email by 11:00 pm ET to counsel for Senior Party as follows:

bbabock@loeb.com
dliu@loeb.com
bdach@loeb.com
BoxSigma133@loeb.com
benjamin.sodey@milliporesigma.com

/Raymond N. Nimrod /
Raymond N. Nimrod
Reg. No. 31,987
Quinn Emanuel Urquhart & Sullivan, LLP
51 Madison Avenue
New York, NY 10010
Telephone: 212-849-7000
raynimrod@quinnemanuel.com