

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

ARES TRADING S.A.,
Plaintiff,

v.

DYAX CORP.,
Defendant.

C.A. No. 19-02300-EJW

PUBLIC VERSION

DYAX CORP.,
Counterclaim Plaintiff,

v.

ARES TRADING S.A.,
MERCK PATENT GMBH,
Counterclaim Defendants.

MEMORANDUM OPINION and ORDER

John G. Day, Andrew Colin Mayo, ASHBY & GEDDES, Wilmington, DE; Isaiah L. Freeman, John Hanish, John Hintz, Kevin J. Culligan, MAYNARD, COOPER & GALE, P.C., New York, NY.

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Counsel for Defendant, Counterclaim Plaintiff.

February 21, 2022
Wilmington, Delaware

WALLACH, U.S. Circuit Judge, sitting by designation:

This matter is before the Court on a bench trial held from July 11, 2022, through July 14, 2022. Having considered the parties' pleadings, trial testimony, exhibits, post-trial briefing, proposed findings of fact and conclusions of law, and the applicable state and federal law governing the relevant issues, the Court makes the following Findings of Fact and Conclusions of Law. Based on its Findings of Fact and Conclusions of Law, the Court denies Plaintiff and Counterclaim Defendant Ares Trading S.A.'s Complaint in its entirety (Counts I–IV) and enters judgment in favor of Defendant and Counterclaim Plaintiff Dyax Corp. as to Counterclaim I, but denies Counterclaim II on the merits, and Counterclaims III–VI as moot.

The parties' primary dispute concerns the enforceability of a royalty provision in the Amended and Restated Collaboration and Licensing Agreement ("CLA"), which Ares Trading S.A. ("Ares" or "Ares Trading") and Dyax Corp. ("Dyax") entered into in 2006.

JURISDICTION

This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331, 1332(a)(2), 1338(a), and 2201(a), because the matter in controversy exceeds the sum or value of \$75,000, exclusive of interest and costs, the action is between a citizen of a State and a citizen or subject of a foreign state and Plaintiff and Counterclaim Defendant Ares Trading and Defendant and Counterclaim Plaintiff Dyax both seek a declaration of the rights and obligations of the parties.

The Court has personal jurisdiction over Defendant and Counterclaim Plaintiff Dyax, because Dyax is a citizen of the State in which this Court is located.

The Court has personal jurisdiction over Plaintiff and Counterclaim Defendant Ares Trading and Counterclaim Defendant Merck Patent GmbH because Ares Trading and Merck Patent GmbH have consented to the Court's personal jurisdiction for purposes of this action.

Venue is proper because Ares filed claims against Dyax in this Court arising from its contractual

relationship and dispute with Dyax, and Dyax's counterclaims against Ares Trading and Merck Patent GmbH arise from the same contractual relationship and dispute.

CLAIMS AND COUNTERCLAIMS

Ares Trading's Complaint contains four counts against Dyax:

I. Ares Trading seeks declaratory judgment that *Brulotte* renders the royalty obligations of Ares to Dyax for net sales of therapeutic antibody products, including Bavencio, for ten years after the first commercial sale of each such product, even though the last Cambridge Antibody Technology ("CAT") Valid Claim expired in the United States before the end of the ten-year period, as unenforceable. **DENIED** on the merits.

II. Ares Trading seeks reformation of the CLA under Section 10.6 of the CLA, in that *Brulotte* renders the royalty provisions of the CLA unenforceable. **DENIED** as moot.

III. Ares Trading seeks declaratory judgment that Ares Trading is entitled to a royalty reduction from Dyax based on the implied covenant of good faith and fair dealing, in that the royalties are unenforceable under *Brulotte*. **DENIED** on the merits.

IV. Ares Trading seeks declaratory judgment that Ares Trading does not have to pay royalties to Dyax because Ares Trading's sublicense of PD-L1 should be terminated, since *Brulotte* renders Dyax's PD-L1 license unenforceable. **DENIED** as moot.

Dyax's Answer, Defenses, and Counterclaims contains six counterclaims against Ares and Merck Patent GmbH:

I. Dyax claims *Brulotte* does not apply to Ares Trading's obligations to pay royalties for net sales of Bavencio or other therapeutic antibody products to Dyax under the CLA. **GRANTED.**

II. Dyax claims Merck Patent GmbH omitted Dyax inventors from U.S. Patent No. 9,624,298 and requests a correction of inventorship for this patent. **DENIED** on the merits.

III. If *Brulotte* applies, Dyax claims Ares Trading must agree to amend the CLA to restore the full royalty rate. **DENIED** as moot.

IV. If *Brulotte* applies, Dyax claims Ares Trading must agree to reform the CLA to restore the full royalty rate. **DENIED** as moot.

V. If *Brulotte* applies and the CLA must be modified to reduce the royalty rate, Dyax claims breach of contract by Ares Trading for failing to perform Section 10.10 of the CLA. **DENIED** as moot.

VI. If *Brulotte* applies and the CLA must be reformed with a stepped-down royalty rate, Dyax alleges breach of the covenant of good faith and fair dealing by Ares Trading for its refusal to pay the full royalty rate as negotiated in the original CLA. **DENIED** as moot.

FINDINGS OF FACT

I. The Parties

1. Defendant and Counterclaim Plaintiff, Dyax Corp. (“Dyax”), is a biotechnology research and development company that was founded in 1995. DTX-486 at 3; Day 3 PM Tr. (Magovcevic-Liebisch) at 14:16–23.

2. Shire plc (“Shire”) is a formerly independent biotechnology company that acquired Dyax in 2016. Day 4 Tr. (Gates) at 45:21–23; DTX-554.

3. Takeda Pharmaceutical Company Limited (“Takeda”) is Dyax’s current corporate parent after acquiring Shire in 2019. Day 4 Tr. (Gates) at 46:2–5; DTX-560.

4. Plaintiff and Counterclaim Defendant, Ares Trading S.A. (“Ares” or “Ares Trading”), is a subsidiary holding company of Serono S.A.. Day 1 Tr. (Eckhardt) at 9:15–25.

5. Serono S.A. or EMD Serono (“Serono”) is a formerly independent biotechnology company that is an indirect corporate parent of Ares Trading. Day 1 Tr. (Eckhardt) at 9:6–10:8.

6. Counterclaim Defendant, Merck Patent GmbH (“Merck Patent”), is an intellectual

property holding company and indirect subsidiary of Merck KGaA. Day 2 Tr. (Seemann) at 267:11–23.

7. Merck KGaA (“Merck”) is the current indirect corporate parent of Ares Trading, Merck Patent, and Serono. Day 1 Tr. (Eckhardt) at 7:23–10:8. It acquired Serono (and thus Ares Trading) in 2006. *Id.* at 9:6–10; DTX-638.

II. Dyax’s Antibody Phage Display Technology

8. Dyax pioneered and sought to perfect phage display to discover peptides and antibodies that could be developed into therapeutics. DTX-486 at 3; Day 3 PM Tr. (Magovcevic-Liebisch) at 14:10–23:22.

9. Dyax’s expertise in phage display led to important results. Dyax used its early phage display library to develop a drug called Kalbitor for treating hereditary angioedema (“HAE”). JTX-269 at 5; Day 3 PM Tr. (Magovcevic-Liebisch) at 17:14–24.

10. In 2018, Dyax used its more advanced antibody library—described in a seminal 2005 paper—to develop Takhzyro, also for treating HAE. Day 3 PM Tr. (Sexton) at 145:23–146:3, 149:24–150:10, 154:18–25; JTX-63; Day 3 PM Tr. (Magovcevic-Liebisch) at 21:5–22:21.

11. Dyax continues to perform antibody phage display today. Day 3 PM Tr. (Sexton) at 147:18–148:13.

A. Dyax Capitalized on Its Foundational Ladner Patents.

12. Dyax secured early patents on phage display broadly (the “Ladner Patents” after Dyax’s Dr. Bob Ladner) and on its later antibody phage display libraries, specifically. Day 3 PM Tr. (Magovcevic-Liebisch) at 17:14–20:10, 23:25–26:6, 52:5–53:4; Day 3 PM Tr. (Sexton) at 167:23–168:21.

13. Many other companies also claimed intellectual property rights over aspects of antibody phage display technology. Day 3 PM Tr. (Magovcevic-Liebisch) at 10:5–11 (describing the antibody phage display landscape as a “patent minefield”), 26:7–27:22. Those intellectual property rights covered

phage display libraries and methods of carrying out phage display broadly, and antibody phage display more specifically. Day 3 PM Tr. (Magovcevic-Liebisch) at 9:16–10:11, 54:4–16, 69:22–70:10; *see id.* at 24:3–18; JTX-82 at 6.

14. In order to build a business around doing antibody phage display, Dyax capitalized on the value of its early Ladner Patents to obtain freedom-to-operate in the phage display space via cross-licenses to phage display patents held by companies like Biosite, Genentech, Affimed, XOMA, Domantis, and Cambridge Antibody Technology (“CAT”), all of which needed access to Dyax’s phage display patents to have freedom-to-operate themselves. Day 3 PM Tr. (Magovcevic-Liebisch) at 24:3–29:3, 35:19–36:20, 54:4–16, 69:22–71:6; JTX-82 at 6.

15. These cross-licenses secured for Dyax freedom-to-operate to perform antibody phage display. Day 3 PM Tr. (Magovcevic-Liebisch) at 26:7–27:11, 95:19–96:21, JTX-82 at 6 (referring to “Gain[ing] Access to Other Antibody Phage Display IP”); JTX-83 at 9 (referring to “3rd party antibody phage IP in exchange for Dyax’s Ladner patents”). These cross-licenses did not secure freedom-to-operate for Dyax to commercialize the resulting antibodies, since other entities may have secured intellectual property covering particular targets, and patents could still be obtained on the resulting Fabs. Day 3 PM Tr. (Magovcevic-Liebisch) at 53:17–54:1 (“Funded Research” collaborators did not need Dyax’s Ladner Patents but would need the patent(s) on the binder(s)), 69:18–21 (CAT did not have patents on the binders that came from Dyax’s libraries).

16. The importance of Dyax’s intellectual property in the field of antibody phage display is demonstrated, in part, by the 1997 Dyax-CAT agreement, in which Dyax licensed the Ladner Patents to CAT in exchange for a royalty and covenant not to sue from CAT. JTX-4 at 3 (§ 2.1, the license), 5 [confidential rate] (§ 4.1.6, the royalty obligation), 12 (the [REDACTED] royalty rate), 3–4 (§ 2.3, CAT’s covenant not to sue). CAT recognized the importance of Dyax’s patents in the field of phage display. Day 3 PM Tr. (Magovcevic-Liebisch) at 25:23–27:22, 36:3–20.

B. Dyax's Licensing and Funded Research Program

17. In the early 2000s, Dyax understood that, as a single company, it could not take full advantage of its powerful phage display technology. Day 3 PM Tr. (Magovcevic-Liebisch) at 28:1–20. Consequently, Dyax partnered with others, licensing out its Ladner Patents and making its phage display libraries available directly (“Library License”) or via collaborations in which Dyax did the screening for others (“Funded Research”). Day 3 PM Tr. (Magovcevic-Liebisch) at 27:23–39:10; JTX-82 at 10–13. Dyax called these partnership options its Licensing and Funded Research Program (“LFRP”).

18. Because of its cross-licenses with other companies that had patents related to phage display, Dyax could provide freedom-to-operate under both its patents and the third parties' patents to its Library License partners—those of its LFRP partners that received Dyax's library to perform phage display. Day 3 PM Tr. (Magovcevic-Liebisch) at 36:21–38:1 (discussing JTX-82 at 10), 76:25–78:2, 138:11–24 (discussing JTX-83 at 10). For those Library License partners doing antibody phage display, Dyax was a “one-stop shop” for patent rights needed to perform antibody phage display. Day 3 PM Tr. (Magovcevic-Liebisch) at 36:21–37:22 (discussing JTX-82 at 10), 76:25–78:2, 136:18–137:25 (discussing JTX-83 at 10), 138:11–24 (discussing JTX-83 at 10), 141:16–21.

19. Securing freedom-to-operate under CAT's patents (the “CAT Patents”) came with a business cost to Dyax in the form of patent licensing royalties. To ensure that Dyax could cover such costs for as long as they existed, even where it was merely delivering then-unpatented antibody Fab fragments to a collaborator who was otherwise not practicing the CAT Patents at all, Dyax set the collaborator's royalty duration to be the same duration Dyax was facing on its upstream costs payable to CAT. Day 3 PM Tr. (Magovcevic-Liebisch) at 64:10–65:3, 111:9–117:14.

20. Dyax could have imposed a differently-structured royalty duration—it was under no contractual obligation from CAT to draft Section 4.9 in the precise way it did—but that would have opened Dyax to unnecessary financial risk it was not willing to undertake. Day 3 PM Tr. (Magovcevic-

Liebisch) at 64:10–65:15, 66:3–19, 113:19–114:20. Dyax structured its agreements with collaborators such as Ares Trading to reduce risk and cover its costs as a rational business actor amidst what was already a risk-heavy business. *Id.* at 39:11–40:8, 60:6–21, 113:19–114:20, 126:4–17; *see* Day 4 Tr. (Buthusiem) at 151:21–155:11.

21. Dyax’s choice to set its LFRP royalties to cover its costs to CAT was like a drug discovery company setting the price of its drug to account for significant costs owed for leasing laboratory and office space. While this company may use proceeds from drug sales to pay those leasing costs, the customer is paying “for” the drug, not “for” the company’s lease. Day 3 PM Tr. (Magovcevic-Liebisch) at 64:10–65:3.

22. Dyax’s LFRP was very successful. By 2004, Dyax had signed agreements with 75 companies, including many leading drug companies. Day 3 PM Tr. (Magovcevic-Liebisch) at 31:3–33:5, 37:23–38:1; DTX-486 at 3; JTX-82 at 9, 13. While others in the market offered antibody phage display services—including CAT and a company called MorphoSys—Dyax was frequently chosen (including by both Merck and Ares Trading) as the phage display library provider with the expertise to successfully discover high-affinity binders to challenging target proteins in their drug development projects. Day 1 Tr. (Eckhardt) at 37:21–39:13, 106:13–107:11; Day 2 Tr. (McKenna) at 17:15–20:10; Day 2 Tr. (Hofmeister) at 62:14–63:15, 71:5–23; Day 3 PM Tr. (Magovcevic-Liebisch) at 38:2–16.

23. In total, four now-approved and marketed drugs were sourced from Dyax’s antibody phage display libraries: Cyramza, Portrazza, Bavencio, and Takhzyro. Day 3 AM Tr. (Hausman) at 67:7–10, 69:13–70:5; *see also* Day 3 PM Tr. (Magovcevic-Liebisch) at 117:15–118:24; Day 4 Tr. (Gates) at 74:1–6.

III. Ares Trading’s Options to Find Antibodies that Bind to PD-L1

24. In 2006, Ares Trading sought to identify an antibody that would bind to PD-L1, but lacked the technology to do so in-house, so it contracted with Dyax. Day 2 Tr. (Hofmeister) at 60:24–

63:18; Day 1 Tr. (Eckhardt) at 104:20–107:22.

25. Ares Trading could have located a binder to PD-L1 using techniques that do not involve phage display or the CAT Patents at all, such as hybridomas, transgenic mice, humanized mice, and ribosomal display. Day 2 Tr. (McKenna) at 17:6–14; Day 2 (Hofmeister) at 62:5–64:24.

26. Ares Trading could have worked with XOMA for access to phage display technology, but Ares Trading disregarded XOMA without investigating its ability to provide freedom-to-operate under the CAT Patents. DTX-614 (Weseloh Dep.) at 57:6–18, 58:2–6, 59:20–23; JTX-190.

27. Ares Trading could have had MorphoSys do antibody phage display work for Ares Trading in a Funded Research-type arrangement, similar to what it got instead from Dyax. Day 1 Tr. (Eckhardt) at 106:19–107:4; Day 2 Tr. (McKenna) at 17:15–18:3; Day 2 Tr. (Hofmeister) at 48:4–12, 62:25–63:9.

28. Ares Trading also could have contracted with CAT. At trial, Ares Trading attempted to suggest that Ares Trading was unable to finalize a deal with CAT because CAT “took its agreement with Serono off the table” following February 2006 emails (PTX-286 and JTX-173) showing that an Ares Trading employee had made changes to a draft agreement that would have to be discussed with CAT. Ares Trading’s Revised Opening Brief, D.I. 251 (“Ares Br.”) at 18; Day 1 Tr. (McKenna) at 268:19–270:4.

29. After Ares Trading provided those changes to CAT on March 2, 2006 (JTX-299), (1) CAT responded on March 24, 2006, accepting Ares Trading’s changes, (2) Ares Trading’s negotiator responded internally, “Here it is, at long last,” and (3) Ares Trading could have signed the agreement with CAT at that point. JTX-300; Day 2 Tr. (McKenna) at 3:18–7:16.

30. Ares Trading had multiple opportunities to sign a deal with CAT, which would have enabled Ares Trading to use CAT’s phage display libraries and included the necessary sublicense to Dyax’s broad phage display patents. PTX-286 at 26–27, § 3.1 (licensing the “Sublicensed Rights”); *id.*

at 21, § 1.1.89 (defining “Sublicensed Rights” to include the “Dyax Rights”); *id.* at 11, § 1.1.36 (defining “Dyax Rights” with reference to Schedule 4); *id.* at 71–73 (Schedule 4, listing Dyax’s patents); Day 2 Tr. (McKenna) at 8:19–12:17.

31. The draft agreement with CAT that Ares Trading could have signed was a Library License-type agreement, meaning that Ares Trading would have gotten access to CAT’s antibody phage display library and Ares Trading would have done the phage display work. Day 2 Tr. (McKenna) at 8:19–10:4 (discussing the draft CAT agreement in PTX-286).

32. In that context of doing antibody phage display, Ares Trading’s witnesses expressed a generalized interest in freedom-to-operate under the CAT Patents. Day 1 Tr. (McKenna) at 265:2–15 (explaining interest in a deal with CAT to get “freedom to operate from them to use their phage display to go generate antibodies to our prioritized targets”); Day 2 Tr. (Hofmeister) at 45:23–46:6 (discussing efforts to “get access to a phage display library”); Day 2 Tr. (Weseloh) at 150:1–4 (agreeing that in 2008 “it was important to obtain freedom to operate under the CAT patents”).

33. Ares Trading was not forced to work with Dyax. Ares Trading admits (1) it could have used methods that do not involve phage display, such as transgenic mice or ribosome display, and (2) it could have worked with other phage display companies such as CAT or MorphoSys, but (3) it chose to work with Dyax because of Dyax’s technical expertise, demonstrated success, and acceptable price. Day 2 Tr. (Hofmeister) at 62:5–65:18, 70:24–71:23; Day 1 Tr. (Eckhardt) at 106:9–107:22; Day 3 PM Tr. (Magovcevic–Liebisch) at 43:14–44:16, 117:15–119:13; Day 2 Tr. (McKenna) at 16:23–20:10.

IV. Dyax’s and Ares Trading’s Collaboration

A. The Amended and Restated Collaboration and License Agreement (“CLA”)

34. The parties executed the CLA (JTX-1) in 2006, a Funded Research agreement under which Dyax screened one of its antibody phage display libraries for binders to Ares Trading’s targets (including PD-L1), and provided to Ares Trading those binders and exclusive rights thereto. Day 1 Tr.

(Eckhardt) at 12:18–13:14; Day 2 Tr. (Hofmeister) at 70:15–73:17; Day 3 PM Tr. (Magovcevic-Liebisch) at 43:14–48:15; JTX-1 at 40 (“The focus of the project is to identify soluble Fab (sFab) binders from Dyax’s antibody library against . . . PDL-1 . . .”).

35. Dyax’s witness Dr. Magovcevic-Liebisch supervised Dyax’s negotiations of the CLA. Day 3 PM Tr. (Magovcevic-Liebisch) at 43:14–44:7. By contrast, none of the witnesses that Ares Trading called at trial for live testimony or via deposition designations were involved in negotiating the CLA for Ares Trading. Day 1 Tr. (Eckhardt) at 93:8–104:18.

36. Under the CLA, Ares Trading got what it wanted—high quality, exclusive, and patentable Fab binders—without infringing the CAT Patents. Ares Trading accepted the terms Dyax offered because Ares Trading wanted to secure the value it knew Dyax would provide. Day 2 Tr. (McKenna) at 19:19–20:10 (noting Ares Trading “chose to work with Dyax”); Day 2 Tr. (Hofmeister) at 63:6–15 (same). If Ares Trading wanted to commercialize a therapeutic antibody product free of Dyax’s terms, it could have looked to transgenic mice or humanized mouse models. Day 2 Tr. (McKenna) at 17:6–14.

37. The plan articulated in the CLA was explicit that Dyax, not Ares Trading, would perform the phage display work. JTX-1 at 9, §§ 2.1, 2.2, 40 (Research Plan: “Dyax will perform selections using the Dyax Fab310 (phagemid) library.”); DTX-607 (Eckhardt Dep.) at 58:15–59:6; DTX-615 (McKenna Dep.) at 158:4–9, 11–14; Day 1 Tr. (Eckhardt) at 133:15–20; Day 2 Tr. (Hofmeister) at 63:14–18.

38. Dyax did the work required of it under the CLA, delivering the Fabs Ares Trading wanted. Complaint, D.I. 2 at 2–3, ¶¶ 5–6, 10; Day 1 Tr. (Eckhardt) at 134:22–135:4; DTX-607 (Eckhardt Dep.) at 67:1–68:10, 68:14–15; Day 2 Tr. (Hofmeister) at 73:9–17; Day 3 PM Tr. (Magovcevic-Liebisch) at 46:15–21.

B. The Patents Licensed to Ares Trading

39. Dyax’s Funded Research collaborators (like Ares Trading) did not need freedom-to-

operate under patents covering antibody phage display because Dyax was doing the antibody phage display work under those Funded Research agreements. Day 3 PM Tr. (Magovcevic– Liebisch) at 38:2–22 (discussing JTX-82 at 11), 53:17–54:1. Consequently, Dyax did not include in Funded Research agreements all of its cross-licensed rights, though it elected to provide its collaborators with more rights than they would need (i.e., its own IP, CAT’s IP, and XOMA’s IP). *Id.* at 52:13–54:1, 101:23–102:10; *see, e.g.*, JTX-1 at 12–13, §§3.1(a)–(c), 16, §3.2(d).

i. Dyax Patent Rights

40. For a party interested in antibody phage display from Dyax’s libraries, having freedom-to-operate under Dyax’s patents—including the foundational Ladner Patents and Dyax’s later more specific patents directed to its libraries—would have been just as important as freedom-to-operate under the CAT Patents. Day 3 PM Tr. (Magovcevic-Liebisch) at 54:17–21.

41. Under the CLA, Ares Trading received research and commercial licenses to the “Dyax Patent Rights.” JTX-1 at 12–13, §§ 3.1(a)–(b). “Dyax Patent Rights” as defined in the CLA includes patents issuing from “patent application[s] . . . owned by Dyax as of the Effective Date during the term of this Agreement related to the use of the Dyax Libraries to conduct antibody phage display.” JTX-1 at 3, § 1.24.

42. U.S. Patent No. 8,557,743 (“the ’743 Patent,” JTX-270) is among the “Dyax Patent Rights” because it issued from Dyax’s application No. 10/656,350 (the “’350 Application”) (DTX-313) that was “owned by Dyax as of the Effective Date during the term of this Agreement related to the use of the Dyax Libraries to conduct antibody phage display.” JTX-1 at 1 (first paragraph, defining the “Effective Date”), 3, §§ 1.23–1.24), 4, § 1.31; JTX-63 at 1–2; JTX-162 at 3, 9; JTX-217 at 4, 11; JTX-82 at 4; JTX-269 at 5; DTX-313 at 1, 4–18, 367–369; DTX-308 (assignment records for the ’350 Application); Day 3 PM Tr. (Sexton) at 227:3–236:5; Day 3 PM Tr. (Magovcevic-Liebisch) at 62:18–23.

43. Ares Trading’s in-house counsel testified that Ares Trading is licensed to the ’743 Patent

(Day 1 Tr. (Eckhardt) at 181:21–182:13), which could only be true if it is among the “Dyax Patent Rights.”

44. The ’743 Patent expires January 15, 2028, which is after the ten-year royalty duration of Bavencio. DTX-587 at 9, No. 13 (admitting that the ’743 Patent will not expire before March 2027, assuming all maintenance fees are paid); Complaint, D.I. 2 at 5, ¶ 19 (alleging that the Bavencio royalty duration in the United States will end in March 2027); JTX-270 at 1, (22) (September 5, 2003 filing date); *id.* at 19 (Certificate of Correction noting that the ’743 Patent’s term was adjusted by 1,593 days pursuant to 35 U.S.C. § 154(b)); Maintenance Fee Details for U.S. Patent No. 8,557,743, U.S.P.T.O., <https://fees.uspto.gov/MaintenanceFees/fees/details?patentNumber=8557743&applicationNumber=10656350&caresActSelected=> (last visited Jan. 11, 2023).

45. U.S. Patent Nos. 9,670,481 and 10,577,598 issued from divisionals of the ’350 Application, and so are among the “Dyax Patent Rights” for the same reasons as the ’743 Patent. JTX-1 at 3, § 1.24 (defining “Dyax Patent Rights” to include patents issuing from divisionals of applications that meet its technical requirements); JTX-271 at 1, (62); JTX-272 at 1, (62).

ii. CAT Patents

46. Ares Trading never needed freedom-to-operate under the CAT Patents in a Funded Research agreement like the CLA, because under that agreement, Dyax was doing the antibody phage display. Day 3 PM Tr. (Magovcevic-Liebisch) at 38:2–22 (discussing JTX-82 at 11), 53:17–54:1. By contrast, Dyax needed a license to the CAT Patents to do its work under the CLA. Day 3 PM Tr. (Magovcevic-Liebisch) at 54:2–16.

47. While Ares Trading tried to suggest that it felt “leveraged” by the CAT Patents when negotiating the CLA, Ares Trading presented no testimony from anyone involved in negotiating the CLA on its behalf. Day 1 Tr. (Eckhardt) at 93:8–104:9. Further, Dyax itself was a mere non-exclusive

licensee; it did not own the CAT Patents and had no ability to sue on them. Day 1 Tr. (Eckhardt) at 192:15–193:7.

48. Despite not needing a license to the CAT Patents, Ares Trading wanted a license, and through Dyax, it got what it wanted. Day 1 Tr. (Eckhardt) at 146:17–147:17; JTX-2 at 6, § 2.1. Under the CLA, Ares Trading received a research license to the CAT Patents. JTX-1 at 12, § 3.1(a). That research license allowed Ares Trading “to use Dyax Research Materials and Research Results and to use, develop and make Dyax Antibodies, solely in the Research Field.” *Id.* However, “Dyax Research Materials” and “Research Results” expressly exclude use of the “Dyax Antibodies” that Ares Trading would have needed to perform antibody phage display. JTX-1 at 4, § 1.26, 7, § 1.67.

49. Pursuant to the terms of the CLA and at Ares Trading’s request, Dyax obtained a commercial license to the CAT Patents under the PD-L1 Product License. JTX-2 at 6, § 2.1. In the [confidential rate] PD-L1 Product License, Dyax agreed to pay █████ on sales of Bavencio for a license to the CAT Patents. JTX-2 at 8, § 6.1.2. Although the PD-L1 Product License terminates when Dyax’s royalty obligations end, a reduction of Dyax’s royalties under the PD-L1 Product License would not terminate the PD-L1 Product License. JTX-2 at 12–13, § 11.1.

50. To obtain the PD-L1 Product License, Dyax had to submit the PD-L1 target to CAT pursuant to the Gatekeeping Process as defined in the “Library License Agreement” (“Gatekeeping” or “Gatekeeping Process”). JTX-1 at 5; JTX-19 at 12–13, 35–36. Dyax’s partners’ willingness to work with Dyax despite Gatekeeping showed the value they saw in Dyax’s technology and expertise. Day 3 PM Tr. (Magovcevic-Liebisch) at 43:14–44:7, 73:7–74:13.

51. Subsequent to signing the CLA, Ares Trading had concerns with the Gatekeeping Process because CAT rejected several targets other than PD-L1. Day 2 Tr. (Weseloh) at 123:16–124:7, 247:20–248:7. Ares Trading could have mitigated the risks associated with the Gatekeeping Process, e.g., by submitting targets immediately after signing the CLA to reserve targets while beginning research, or by

working with CAT on side agreements allowing research and commercialization to continue even if the target failed Gatekeeping. Day 2 Tr. (Weseloh) at 247:20–250:14; DTX-614 (Weseloh Dep.) at 144:8–145:13, 145:16–146:15, 147:9–148:3, 148:6–150:2, 150:5–151:19; JTX-205; JTX-206; JTX-207; JTX-253; *see* Day 3 PM Tr. (Magovcevic-Liebisch) at 73:7–23. Ares Trading’s choice not to pursue those options saved it money but assumed the risk of CAT rejecting those targets during Gatekeeping. Notwithstanding those concerns about other targets, the Gatekeeping Process did not impede Ares Trading’s development of antibodies and Fabs that bind to PD-L1. Day 1 Tr. (Eckhardt) at 31:4–10; Day 2 Tr. (Hofmeister) at 86:10–17; Day 3 PM Tr. (Magovcevic-Liebisch) at 75:14–21.

52. Under the PD-L1 Sublicense (JTX-3) to the PD-L1 Product License (JTX-2), Ares Trading received a commercial sublicense to the CAT Patents. JTX-3 at 1, § 1; JTX-2 at 6, § 2.1; Day 1 Tr. (Eckhardt) at 31:4–36:21, 141:8–143:6. Under the terms of the CLA, upon Ares Trading receiving the PD-L1 Sublicense, Ares Trading could proceed to begin clinical trials of Bavencio. JTX-1 at 14, § 3.2(a)(i); Day 1 Tr. (Eckhardt) at 35:25–36:8, 101:15–102:1.

53. Even if the PD-L1 Sublicense terminates, Ares Trading still retains the research license to the CAT Patents under Section 3.1(a) of the CLA, which is the only license to the CAT Patents Ares Trading could use, given that CAT Patents do not cover commercialization of an antibody. JTX-1 at 12, § 3.1(a); Day 1 Tr. (Eckhardt) at 26:21–27:4, 178:17–22; DTX-587 at 8–9, Nos. 10, 11.

C. Dyax’s Compensation, Including the Royalty Provision

54. The terms of the CLA reflect Dyax’s and Ares Trading’s intent when entering the CLA. JTX-1 at 22–23, §§ 4.6, 4.9; Day 1 Tr. (Eckhardt) at 132:25–133:14; DTX-607 (Eckhardt Dep.) at 100:6–101:22, 102:11–103:14, 104:1–6.

i. Forms of Compensation

55. Under the CLA, Ares Trading agreed to pay Dyax “FTE” cost-reimbursement for its [confidential rate] scientists’ work, contingent milestone payments, and a [redacted] royalty on sales of any resulting drug, for at

least ten years from its launch. JTX-1 at 20–23, §§ 4.1–4.9. These forms of compensation were common in the pharmaceutical and biotechnology industries. Day 4 Tr. (Buthusiem) at 184:2–186:7; Day 3 PM Tr. (Magovcevic–Liebisch) at 60:3–61:6.

56. The FTE and milestone payments were below industry standards and not intended to fully compensate Dyax for its investment in phage display technology or the value it brought to the collaboration by providing the antibody binders upon which Bavencio is based and assigning associated IP rights to Ares Trading. Day 3 PM Tr. (Magovcevic-Liebisch) at 57:13–60:21, 109:3–110:9; Day 4 Tr. (Buthusiem) at 165:5–169:15, 171:8–175:9 (discussing DDX-4 at 24), 175:20–177:10.

57. Dyax was sensitive to the specific needs of its collaborators, each of which was differently situated, and balanced milestones and royalties, discounting each by the likelihood of receiving them, to create a total compensation package for its work. Day 4 Tr. (Buthusiem) at 184:2–188:3 (discussing JTX-30); Day 3 PM Tr. (Magovcevic-Liebisch) at 55:21–57:7, 60:6–61:6. No pharmaceutical company could or would pay the full cost of drug development up front when only a small fraction of candidates is successful. Day 1 Tr. (Eckhardt) at 126:25–128:18; DTX-607 (Eckhardt Dep.) at 85:18–86:20.

58. Since the CLA was premised on the parties sharing risk and reward, royalties were needed to fully compensate Dyax. Day 3 PM Tr. (Magovcevic-Liebisch) at 59:4–60:21; Day 4 Tr. (Buthusiem) at 165:5–169:15, 174:20–175:9 (discussing DDX-4 at 24), 175:20–177:10. Royalties were typically the largest source of compensation, but the least likely to come to fruition, and in this case the milestones were below market rates, indicating that Dyax was particularly dependent on the royalties to recoup its investment and make a profit. Day 4 Tr. (Buthusiem) at 183:4–184:1.

59. The use of royalties as a means of compensation shifts both the risk of failure and the benefit of success from the party paying for the services (i.e., Ares Trading) to the party being paid for the services (i.e., Dyax). Day 3 PM Tr. (Magovcevic-Liebisch) at 60:6–21. Providing Dyax with

deferred royalty compensation benefits drug companies like Ares Trading, which decline to pay all costs up front. Day 1 Tr. (Eckhardt) at 126:25–129:7.

60. Ares Trading’s payment of royalties under the CLA was deferred compensation to Dyax for its work in screening its phage display libraries for high-affinity binders, not for a license to the CAT Patents. Day 3 PM Tr. (Magovcevic-Liebisch) at 60:6–21, 61:7–63:18; *see also* Day 4 Tr. (Buthusiem) at 145:6–14, 181:19–183:3, 188:4–189:5, 222:10–223:2. Ares Trading’s in-house counsel admitted that “[r]oyalty payments, in [his] view, are always a way of deferred payment” and specifically that the CLA’s royalties are “deferred compensation to Dyax for doing its work.” Day 1 Tr. (Eckhardt) at 128:19–129:7; DTX-607 (Eckhardt Dep.) at 84:10–85:17 (the same witness admitting at deposition as Ares Trading’s Rule 30(b)(6) designee that royalties are commonly used as deferred compensation in agreements to develop therapeutic antibody products).

61. In the pharmaceutical and biotechnology industries, parties typically combine expertise and share risk via collaborations. Day 4 Tr. (Buthusiem) at 176:7–177:10; Day 3 PM Tr. (Magovcevic-Liebisch) at 60:22–61:6, 117:15–119:7; Day 2 Tr. (McKenna) at 20:11–19, 30:20–31:21; Day 2 Tr. (Hofmeister) at 70:2–71:23, 83:5–24 (discussing JTX-60). Telltale signs of such collaborations include defined roles working toward a common goal, assignment of intellectual property created during the collaboration, and a governance structure in which representatives of both parties can discuss what each is doing. The CLA had all of these characteristics. Day 4 Tr. (Buthusiem) at 177:11–180:13; JTX-1 at 9–10, § 2.3 (creating a Research Steering Committee); Day 2 Tr. (Hofmeister) at 55:3–22.

62. Ares Trading’s royalty obligation is in the CLA, not the PD-L1 Sublicense. JTX-3 at 2, § 2.3; D.I. 2 at 12, ¶¶ 56–58; Day 1 Tr. (Eckhardt) at 92:23–24. Nothing in the CLA conditions Ares Trading’s obligation on keeping the PD-L1 Sublicense. JTX-1 at 22, § 4.6; Day 1 Tr. (Eckhardt) at 19:17–24, 144:11–145:5; DTX-607 (Eckhardt Dep.) at 100:11–101:3, 111:2–7.

ii. Royalty Amount and Basis in the CLA

[confidential rate]

63. Ares Trading's [redacted] royalty obligation arises from § 4.6 of the CLA because, as Ares Trading admits, Bavencio is a "Therapeutic Antibody Product." Complaint, D.I. 2, ¶ 13; JTX-1 at 22, § 4.6; JTX-1 at 3, § 1.19, 8, § 1.76; Day 1 Tr. (Eckhardt) at 16:12–21, 136:9–138:14; DTX-607 (Eckhardt Dep.) at 92:20–93:6, 93:9–93:15.

64. Nothing in Ares Trading's royalty obligation in Section 4.6, or in any of the definitions that flow from it, refers to the CAT Patents or depends on using the CAT Patents. Day 1 Tr. (Eckhardt) at 138:15–139:1; DTX-607 (Eckhardt Dep.) at 93:16–18, 94:1–7, 94:9–15; Day 3 PM Tr. (Magovcevic-Liebisch) at 62:24–63:3, 67:9–11; Day 4 Tr. (Buthusiem) at 191:17–193:23. Using the CAT Patents does not incur any royalty obligation under the CLA. What matters is whether Ares Trading uses a Fab from Dyax. Day 1 Tr. (Eckhardt) at 140:25–141:5. Consequently, Ares Trading could sell a product covered by the CAT Patents without owing any royalty under the CLA, if that product was not developed using a Dyax antibody. Day 1 Tr. (Eckhardt) at 138:15–141:5.

[confidential rate]

65. The [redacted] royalty for Fabs from Dyax's library and assigned IP was low relative to comparable preclinical collaboration-type agreements in the pharmaceutical industry. Day 3 PM Tr. (Magovcevic-Liebisch) at 55:21–57:7, 61:7–63:18; Day 4 Tr. (Buthusiem) at 174:20–175:9 (referring to DDX-4 at 24); *see* JTX-123 at 2.

[confidential rate]

66. Ares Trading investigated and found no evidence of the [redacted] royalty having been considered unreasonable; indeed, its in-house counsel wrote in 2014 that [redacted] was "not that high," and he has seen antibody royalties up to 30%. DTX-180 at 1; Day 1 Tr. (Eckhardt) at 113:14–126:22; Day 4 Tr. (Buthusiem) at 171:8–175:9 (referring to DDX-4 at 24). Ares Trading's parent, Merck, [redacted] independently agreed to pay Dyax a [redacted] royalty in 2005 for an Antibody Library License Agreement. JTX-30 at 18, § 4.5.

67. The only fee associated with Ares Trading's sublicense under the CAT Patents is a [redacted] lump sum payment. JTX-1 at 21, § 4.3; Day 1 Tr. (Eckhardt) at 143:7–144:5.

iii. Royalty Duration in the CLA

68. The royalty duration in the CLA for “Therapeutic Antibody Products” is the longer of ten years from first commercial sale or the last CAT Patents to expire. JTX-1 at 22–23, § 4.9. A ten-year royalty duration was industry-standard. Day 1 Tr. (Eckhardt) at 129:8–130:19; Day 3 PM Tr. (Magovcevic-Liebisch) at 63:19–64:9.

69. The CAT Patents were mentioned solely to avoid any possibility of Dyax being liable for upstream royalties without being paid by Ares Trading for its work, delivery of Fabs, and associated exclusivity and assignment of IP. Day 3 PM Tr. (Magovcevic-Liebisch) at 64:10–65:10, 111:9–114:20. Other licensed patents were not also mentioned in Section 4.9 because such other patents did not present the same cost covering concerns. For example, there was no need to mention Dyax’s patents in Section 4.9, nor to make the royalty duration depend on the expiration of Dyax’s patents, because Dyax had no upstream cost to cover associated with those patents. Day 3 PM Tr. (Magovcevic-Liebisch) at 111:9–25.

70. In practice, the CAT Patents never came close to affecting the royalty duration as they expired in 2018, and the end of the ten-year royalty duration for Bavencio is in 2027. Day 1 Tr. (Eckhardt) at 183:18–185:22.

D. Other Provisions in the CLA

71. The CLA is governed by Massachusetts law. JTX-1 at 35, § 10.5.

72. Section 10.6 of the CLA provides that the CLA’s provisions should be construed to avoid any conflict with the law, but if a conflict is unavoidable, the provision of the CLA that conflicts with the law “shall be conformed and limited only to the extent necessary to bring it within the applicable legal requirements.” JTX-1 at 35, § 10.6. Ares Trading admits this language “requires the smallest change necessary to bring the agreement into conformance with legal requirements.” DTX-607 (Eckhardt Dep.) at 119:5–20.

73. Section 10.10 of the CLA provides: “[T]he Parties will use all reasonable efforts to replace” any provision of the CLA that the Court holds unenforceable with an “enforceable provision which insofar as practical implements the purposes hereof.” JTX-1 at 35–36, § 10.10; see Day 1 Tr. (Eckhardt) at 190:15–191:8 (admitting Section 10.10 means the parties must “try to fix it if possible”). The “purposes hereof” (i.e., the purposes of the CLA) include providing Dyax the compensation agreed-upon in the CLA. Day 1 Tr. (Eckhardt) at 133:12–14; DTX-607 (Eckhardt Dep.) at 100:6–10, 104:1–6.

74. Ares Trading repudiated that obligation to fix the CLA if any obligation is held unenforceable, by refusing to negotiate to “fix” the royalty rate or term if either were held unenforceable. DTX-607 (Eckhardt Dep.) at 122:15–123:14. If Ares Trading fails to negotiate as required by Section 10.10, Dyax can terminate the CLA. JTX-1 at 35–36, § 10.10.

75. By its terms, Section 10.10 applies only after a court holds a portion of the CLA unenforceable. *Id.*

76. Section 3.5 of the CLA provides that “Dyax hereby covenants and agrees that, following the delivery of Antibodies to Licensee under the Research Program, it will not deliver such Antibodies to any Third Party in connection with any future funded research activities.” *Id.* at 19, § 3.5. The CLA thus granted Ares Trading exclusivity to the Fabs delivered by Dyax to Ares Trading. Day 3 PM Tr. (Magovcevic-Liebisch) at 46:22–48:12; Day 4 Tr. (Buthusiem) at 189:7–190:7.

77. Section 5.1(a) of the CLA provides that “Licensee shall be the owner of all Dyax Antibodies that are identified, generated, developed, produced, optimized, or obtained by Dyax under this Agreement and that are delivered by Dyax to Licensee in connection with the Research Program.” JTX-1 at 26, § 5.1(a). Section 5.1(e) of the CLA provides that “Licensee shall own all inventions, discoveries and results made by or on behalf of Licensee in exercising its rights under this Agreement (collectively referred to as ‘Product Inventions’) . . . Dyax hereby grants and shall execute and deliver to Licensee, without charge, irrevocable assignments of all its right, title and interest in and to such Product

Inventions and any intellectual property rights thereto.” *Id.* at § 5.1(e). The CLA thus provided that Dyax would assign to Ares Trading any inventions made by Dyax’s scientists during the course of performing their work under the CLA. Day 3 PM Tr. (Magovcevic-Liebisch) at 48:16–49:3.

E. Dyax’s Work Under the CLA

78. The report concerning the collaboration between Dyax and Ares Trading (JTX-59) summarizes the major tasks that Dyax did to perform its work on PD-L1. Day 3 PM Tr. (Sexton) at 171:2–19; DTX-603 (Nixon Dep.) at 16:12–13, 16:17–17:14, 22:1–25. Dyax’s phage display work took about six months. Day 1 Tr. (McKenna) at 244:17–20; DTX-607 (Eckhardt Dep.) at 65:23–66:10.

79. Dyax’s work on PD-L1 was done by Dyax scientist Dr. Hayet Ammar in Liege, Belgium. Day 3 PM Tr. (Sexton) at 174:4–12 (discussing JTX-59), 178:4–179:7, 199:17–201:21. Dr. Ammar’s work included the following steps of the antibody phage display process:

- a. Dr. Ammar did the selections and prescreening described in Sections III and IV of the PD-L1 report (JTX-59 at 4–5). Day 3 PM Tr. (Sexton) at 171:20–172:8, 174:9–12, 175:21–176:9, 178:4–18, 187:8–193:8; JTX-106 at 3–4 (noting Dr. Ammar’s prescreening work in Jobs 10599, 10600, 10601, 10602, 10664, and 10665); DTX-441 at 3–8 (Jobs 10599, 10600, 10601, 10602, 10664, and 10665); DTX-430 at 3–8 (noting Dr. Ammar’s work on the selections for the PD-L1 project); *see also* DTX-603 (Nixon Dep.) at 116:24–121:7, 121:9–128:14, 130:2–140:17, 141:7–142:12.
- b. Dr. Ammar did the high throughput screening described in Section V of the PD-L1 report (JTX-59 at 6). Day 3 PM Tr. (Sexton) at 178:19–179:7, 193:9–199:15; JTX-106 at 3–4 (noting Dr. Ammar’s high throughput screening work in Jobs 11146 and 11190); DTX-437 at 3 (Job 11146); DTX-438 at 3 (Job 11190); DTX-407 at 2 (Dr. Ammar’s analysis that was used in the report); *see also* DTX-603 (Nixon Dep.) at 142:13–148:4.

c. Dr. Ammar did the screening to confirm that each Fab binds to PD-L1 shown in Figure 1 of the PD-L1 report (JTX-59 at 7). Day 3 PM Tr. (Sexton) at 179:8–16, 199:17–201:21; JTX-106 at 11–13 (noting Dr. Ammar’s confirmatory screening work in Jobs 11810 and 11811); DTX-440 at 5–6 (Jobs 11810 and 11811); JTX-93 at 244–45 (Dr. Ammar’s analysis that was used in the PD-L1 report); *see also* DTX-603 (Nixon Dep.) at 155:15–158:2, 158:7–160:21, 161:2–162:2, 162:16–163:18.

80. Dr. Ammar’s work to find binders to PD-L1 is memorialized by the Webphage documents. Webphage is a database (“Webphage”) that Dyax created as an adjunct to its laboratory notebooks and used to store data related to its antibody phage display work electronically. Day 4 Tr. (Sexton) at 28:21–29:12, 34:4–35:1. Dyax’s standard practice was for its scientists to indicate who did the work when entering data into Webphage, although the Webphage entries could be incomplete or ambiguous. Day 3 PM Tr. (Sexton) at 175:21–177:14, 181:18–183:11; *see also* JTX-162 at 15, 22–24 (presentation to Ares Trading); JTX-217 at 17, 24–26 (same).

81. Dr. Ammar’s work required some “expertise” because each step of the process required the scientist doing such work “to be analyzing, interpreting data and making changes to experiments in order to get the phage display process to work.” Day 3 PM Tr. (Sexton) at 202:8–203:4; DTX-603 (Nixon Dep.) at 124:24–127:24. The research plan alone was not sufficient for Dr. Ammar to do this work; it was a starting point for Dr. Ammar’s work, and the work of others. *Id.* at 206:16–23; Day 4 Tr. (Sexton) at 14:14–16:13.

82. Dyax provided Ares Trading with 167 binders to PD-L1, and Ares Trading created a drug called Bavencio from one of the binders (i.e., the F02 Fab). Day 2 Tr. (McKenna) at 22:4–27:19.

F. Ares Trading’s Use of the F02 Fab that Dyax Discovered

83. Dyax’s work resulted in 167 anti-PD-L1 antigen binding fragments (“Fabs”) that Dyax provided to Ares Trading. Day 3 PM Tr. (Sexton) at 207:24–208:20 (discussing the PD-L1 report, JTX-

59). Ares Trading selected one Fab from the binders Dyax provided to it, known as “562A-M0100-F02” (the “F02 Fab”), as the lead candidate. JTX-139 at 12; Day 2 Tr. (McKenna) at 23:11–26:1.

i. Ares Trading’s Optimization of the F02 Fab

84. Ares Trading performed a technique called affinity maturation to attempt to improve the binding of the F02 Fab with the PD-L1 target, but the F02 Fab already bound so strongly that affinity maturation turned out to be unnecessary. Day 1 Tr. (McKenna) at 248:13–249:9; Day 2 Tr. (McKenna) at 28:11–20; Day 3 PM Tr. (Magovcevic-Liebisch) at 22:3–21; JTX-162 at 7; JTX-217 at 9.

85. Ares Trading separately sought to “optimize” the F02 Fab manually by changing certain amino acids in the F02 Fab’s sequence that affect the Fab’s stability *in vivo*. Day 2 Tr. (McKenna) at 26:8–27:4. The amino acids that affect stability were known, as were the techniques Ares Trading used to adjust them. Day 2 Tr. (McKenna) at 26:8–27:4; Day 2 Tr. (Hofmeister) at 84:7–20; DTX-615 (McKenna Dep.) at 109:6–10.

86. Ultimately, Ares Trading changed five amino acids, 2% of the 230 amino acids in the F02 Fab’s variable regions. Day 2 Tr. (McKenna) at 26:23–25; DTX-615 (McKenna Dep.) at 124:11–125:1; Day 3 PM Tr. (Sexton) at 208:25–209:4; JTX-273 at 39–40 (sequences of A09-188-1); DTX-586 at 10, No. 37 (admitting that A09-188-1 has the F02 Fab).

ii. Ares Trading’s Prosecution of the ’298 Patent

87. Ares Trading obtained U.S. Patent No. 9,624,298 (the “’298 Patent”) on a genus of sequences encompassing the F02 Fab that Dyax discovered. JTX-273 at 48; Day 3 PM Tr. (Sexton) at 212:6–215:18. Ares Trading did not identify Dr. Ammar as a joint inventor of the ’298 Patent. JTX-273 at 1, (72); Day 3 PM Tr. (Sexton) at 209:17–210:6.

88. Claims 1 and 7 of the ’298 Patent cover a genus of “isolated anti-PD-L1 antibody or antigen binding fragment[s]” with certain sequences. JTX-273 at 48. Ares Trading admits that the F02 Fab is a species encompassed within the claimed genus. DTX-587 at 15, No. 26 (admitting that claim 1

of the '298 Patent covers the F02 Fab); DTX-586 at 12, No. 41 (admitting that claim 11 (which depends on claim 9, which both depend on claim 7) of the '298 Patent covers the F02 Fab); *id.* at 12, No. 42 (admitting that claim 19 of the '298 Patent, which depends on claim 18, covers the F02 Fab); Day 2 Tr. (McKenna) at 32:1–34:7.

89. Dr. Sexton reached the same conclusion by comparing the F02 Fab's sequences to those claimed in the '298 Patent's claims 1 and 7. Day 3 PM Tr. (Sexton) at 208:25–209:16 (discussing the F02 Fab's sequences, *see* DTX-449 at 3, 7; DTX-453 at 3–5; DTX-463 at 3–7; DTX-464 at 3–7), 212:6–215:9; DDX-3 at 15–24.

90. Dyax's conception of the claimed F02 Fab species enabled Ares Trading to develop the rest of the claimed genus. Day 2 Tr. (McKenna) at 27:8–19 (acknowledging that Dyax's F02 Fab was a "necessary precursor" to Ares Trading's optimization). The "Experimental Section" of the '298 Patent's specification describes how the claimed genus was determined, beginning with "phage Fab display libraries." JTX-273 at 27, col. 33, ll. 20–28; Day 3 PM Tr. (Sexton) at 216:4–11.

91. An antibody referred to as "A09-188-1" was made from the F02 Fab. JTX-273 at 27, col. 33, ll. 26–38; DTX-586 at 10, No. 37 (admitting that A09-188-1 has the F02 Fab); Day 3 PM Tr. (Sexton) at 216:24–217:10. The rest of the genus of sequences in claims 1 and 7 were derived from the A09-188-1 antibody. JTX-273 at 27, col. 33, ll. 37–67; Day 3 PM Tr. (Sexton) at 217:25–220:17; *see also* Day 2 Tr. (McKenna) at 22:23–34:7; DTX-615 (McKenna Dep.) at 43:7–44:10, 44:24–46:22 (discussing JTX-159); JTX-160.

92. Ares Trading's in-house European patent attorney decided the inventorship of the '298 Patent using emails from the named inventors, a method he does not recall using in any other instance, and his standard was whether Dyax's work was challenging. Day 2 Tr. (Seemann) at 303:8–304:15, 308:15–309:20. He made the inventorship decision concerning the '298 Patent without reviewing the report describing the work Dr. Ammar performed (JTX-59) or investigating what work Dyax's scientists

had done. Day 2 Tr. (Seemann) at 284:4–285:22, 299:21–303:7 (concerning JTX-140).

93. Ares Trading does not claim to have discovered the PD-L1 target, and it did not name its scientist who selected the PD-L1 target as an inventor. Day 2 Tr. (Hofmeister) at 60:10–61:25; JTX-273 at 1, (72). The named inventors’ contributions related exclusively to making the genus from the F02 species provided by Dyax; none were listed as selecting the F02 Fab from the 167 Fabs. DTX-585 at 27–29, No. 20. Rather, Ares Trading’s in-house European patent attorney named several of Ares Trading’s scientists as inventors because they “contributed a sequence which is covered by the claims.” Day 2 Tr. (Seemann) at 305:10–307:5.

94. The ’298 Patent covers Bavencio, Ares Trading’s royalty-bearing product, meaning that Ares Trading practices the ’298 Patent and pays royalties for that use. Day 2 Tr. (McKenna) at 33:7–21.

95. The ’298 Patent will not expire before Bavencio’s ten-year royalty duration. DTX-587 at 12, No. 19.

G. Use of the CAT Patents

96. Dyax and Ares Trading knew the CAT Patents relate to phage display libraries and methods of using them. DTX-615 (McKenna Dep.) at 161:13–19; DTX-603 (Nixon Dep.) at 45:21–24, 46:3–4, 46:10–21; Day 3 AM Tr. (Hausman) at 61:13–15; Day 3 PM Tr. (Magovcevic-Liebisch) at 54:6–16. At trial, Ares Trading never claimed to have used the CAT Patents in connection with Bavencio; indeed, Ares Trading’s in-house counsel, who oversees the lawsuit for Ares Trading, does not know what the CAT Patents cover, let alone whether Ares Trading used them. Day 1 Tr. (Eckhardt) at 90:10–13, 91:17–23.

97. Ares Trading admits that neither it “nor its affiliates Merck KGaA or EMD Serono, practiced subject matter claimed in the CAT Patents in connection with the research, development, testing, identification, approval, commercialization, manufacture, distribution or sale of Bavencio.” DTX-587 at 3–4, No. 1; Day 3 AM Tr. (Hausman) at 79:15–22, 83:12–14. Likewise, Ares Trading

admits that neither it “nor its affiliates Merck KGaA or EMD Serono, practiced subject matter claimed in the CAT Patents in connection with applications for approval of Bavencio® from the U.S. Food and Drug Administration or marketing authorization for Bavencio® from the European Commission.” DTX-587 at 8, No. 10. And Ares Trading admits “that the manufacture and sale of Bavencio® does not practice subject matter claimed in the CAT Patents.” *Id.* at 8–9, No. 11.

98. Ares Trading also admits that if anyone (i.e., Dyax) did use the CAT Patents, that use occurred exclusively before the CAT Patents expired. DTX-587 at 7, No. 8 (admitting that if Dyax did use the CAT Patents, Dyax “did such work before the September 18, 2018 expiration of the Last CAT Valid Claim in the U.S.”); *id.* at 7–8, No. 9 (same for Ares Trading and its affiliates).

H. The Value of What Dyax Provided Ares Trading

99. Ares Trading received good value from Dyax under the CLA, including the Fab that was the foundation for Bavencio, which earns it and [non-party] [estimated sales revenue] about [redacted] per year. Ares Trading also secured the ability to develop another potential drug—a second-generation drug again built off the Fab that Dyax provided to Ares Trading.

100. Ares Trading continues to enjoy all of the value it received from Dyax. Dyax used its expertise, leading scientists, state-of-the-art libraries, and proprietary trade secrets and “Know-How” to do the work Ares Trading wanted, which resulted in the Fabs that Dyax provided to Ares Trading. Day 2 Tr. (McKenna) at 19:19–20:10; Day 3 PM Tr. (Magovcevic-Liebisch) at 19:8–20:10, 23:3–24:2 (explaining Dyax’s expertise in antibody phage display); Day 4 Tr. (Buthusiem) at 162:5–23, 245:1–10; JTX-7 at 6 (referencing Dyax’s “Know-How”). Dyax gave Ares Trading exclusivity to those Fabs—the best Fabs it found for the target—and assigned to Ares Trading all rights to the inventions of those Fabs. Day 3 PM Tr. (Magovcevic-Liebisch) at 46:12–48:15; Day 4 Tr. (Buthusiem) at 188:4–191:13, [estimated sales revenue] 202:3–203:10. One of those Fabs is the basis for Bavencio, earning about [redacted] per year. Day 2 Tr. (McKenna) at 22:4–27:19; Day 3 AM Tr. (Hausman) at 69:25–70:2; *see* PTX-112. Ares Trading

received a license to unexpired “Dyax Patent Rights.” JTX-1 at 12–13, §§ 3.1(a)–(b); DTX-607 (Eckhardt Dep.) at 68:17–69:19; Day 1 Tr. (Eckhardt) at 26:21–29:5, 178:13–179:1; Findings of Fact Nos. 40–45. All of that value remains unchanged after expiration of the CAT Patents.

V. Dyax’s Agreements With Other Parties

A. Dyax’s 2003, 2006, and 2007 Agreements with CAT

101. Dyax had several agreements with CAT, including one that was signed in 2003, JTX-5 (“2003 CAT Agreement”), one that was signed in 2006, JTX-6 (“2006 CAT Agreement”), and another signed in 2007, JTX-7 (“2007 CAT Agreement”). Day 3 AM Tr. (Hausman) at 15:10–16:18; 50:5–15.

102. In 2003, Dyax obtained options to dozens of royalty-bearing licenses to the CAT Patents from two allocations (“Initial Licence Allocation” and “Additional Licence Allocation”), and Dyax agreed to pay a royalty on commercial sales of any therapeutic antibody product that was discovered by Dyax or any Dyax sublicensee practicing the CAT Patents. JTX-5 at 15–16, § 3.1, 30, § 8.2.2. In the 2003 CAT Agreement, Dyax’s royalty for the products licensed under the Additional Licence Allocation [confidential rate] was [REDACTED]. *Id.*

103. In 2007, CAT itself wanted to obtain Dyax’s state-of-the-art antibody phage display libraries for its own drug development work, and so the parties amended the 2003 CAT Agreement to include a “Library License” from Dyax to CAT. *See* JTX-7 at 29, §11.1. Dyax provided CAT with the Library License and did not perform funded research as it did under the CLA, meaning CAT did not get the benefit of Dyax’s scientists’ work, delivery of binding fragments, exclusivity to those fragments, or assignment of inventions. JTX-7 at 11–12, §2.2; Day 3 AM Tr. (Hausman) at 49:11–22, 58:12–14.

104. As compensation for this Library License, CAT agreed to compensate Dyax in several [confidential rate] ways. One form of compensation was that CAT agreed to pay a [REDACTED] royalty to Dyax on any commercial sales of a therapeutic antibody product sourced from Dyax’s libraries and developed by CAT. JTX-7 at 35, § 13.3; Day 3 AM Tr. (Hausman) at 52:25–53:14; PDX-1 at 9.

105. As an additional form of compensation for the Library License from Dyax to CAT, CAT change [confidential rate][confidential rate] also agreed to [redacted] Dyax's [redacted] royalty to [redacted]. JTX-7 at 22–23, § 8.2.2. Importantly, CAT agreed to reduce Dyax's royalties across all of Dyax's product licenses with CAT from the Additional Licence Allocation. *Compare* JTX-6 at 22, § 8.2.2, *with* JTX-7 at 22–23, § 8.2.2; Day 3 AM Tr. (Hausman) at 15:10–16:6; 54:21–55:13. Consequently, the total value of what CAT paid to get the Library License [confidential rate] [confidential rate] from Dyax was far more than just [redacted] on sales of a single product like Bavencio. Rather, it would be [redacted] [confidential rate] [confidential rate] [confidential rate] on Bavencio, plus [redacted] on Cyramza, plus [redacted] on Portrazza, plus [redacted] on every other potential future product from the Additional Licence Allocation.

106. At the time of the 2007 CAT Agreement, CAT already had a license to Dyax's patents by way of a 2006 CAT Agreement, meaning the only additional right CAT received in the 2007 CAT Agreement—the one thing for which the change in the royalty rate could indicate value—was physical access to Dyax's libraries, which was one thing that Ares Trading did not receive under the CLA. Day 3 AM Tr. (Hausman) at 74:4–18. Since the 2007 CAT Agreement included the Library License from Dyax to CAT, the transfer of Dyax's antibody phage display library was accompanied by a license to Dyax's "Know-How," which related to "the subject matter of the Dyax Patent Rights and Dyax Antibody Libraries." JTX-7 at 6, § 1.1 (defining "Dyax Know-How").

B. Dyax's 2000 Agreement with ImClone

107. Dyax had an agreement with ImClone signed in 2000 ("2000 ImClone Agreement"), in [confidential rate] which ImClone agreed to pay Dyax a [redacted] royalty. JTX-12 at 5, § 4.3.5; Day 3 AM Tr. (Hausman) at 14:20–15:4.

108. The 2000 ImClone Agreement licensed to ImClone an older antibody phage display library than the one used by Dyax under the CLA. JTX-12; JTX-1 at 40 (noting the use of the 310 phagemid library); Day 3 AM Tr. (Hausman) at 41:4–10; Day 3 PM Tr. (Sexton) at 168:13–169:24 (explaining that the new libraries improved the chance of finding high-affinity Fabs).

109. The 2000 ImClone Agreement was a library license agreement rather than a funded research agreement like the CLA, meaning that ImClone did not get the benefit of Dyax’s scientists doing the phage display work and delivering the highest quality binding fragments as the product of this work. *Compare* JTX-12 at 3, § 2.1, *with* JTX-1 at 9–12, §§ 2.1–2.4.; Day 3 AM Tr. (Hausman) at 42:25–43:20, 47:1–11, 58:12–21. Likewise, ImClone did not get exclusivity to the fragments it identified or the assignment of inventions made by Dyax’s scientists on the project. *Compare* JTX-12 at 6–7, § 5.1, *with* JTX-1 at 19, § 3.5, 26, § 5.1; Day 3 AM Tr. (Hausman) at 47:21–48:9. ImClone did not get a license to the same Dyax patents as Ares Trading received under the CLA. *Compare* JTX-12 at 2, § 1.6, *with* JTX-1 at 3, § 1.24, 84–85 (Appendix E).

VI. Dyax’s Disputes Regarding Royalty Reductions

A. Ares Trading First Learned of *Brulotte* in 2013, and First Applied It to the CLA in 2014, but Waited Until 2017 to First Raise the Issue with Dyax.

110. Ares Trading admits it learned of *Brulotte* in January 2013 from the same lawyers who represent it in this litigation, yet it waited almost five years, until late 2017, to mention *Brulotte* to Dyax. JTX-37; Day 1 Tr. (Eckhardt) at 73:12–18, 75:12–76:7, 169:4–170:14, 172:3–11; Day 2 Tr. (Weseloh) at 158:13–159:4.

111. Ares Trading considered *Brulotte*’s applicability to the CLA in 2014 as part of “Project Royal,” in which senior legal and Alliance Management personnel at Ares Trading were willing to pay [confidential amount] Dyax [REDACTED] to buy out part of Ares Trading’s royalty obligation, and considered using *Brulotte* solely as a negotiating tool rather than as a reason why the royalty obligation was not enforceable after expiration of the CAT Patents. JTX-36; Day 1 Tr. (Eckhardt) at 151:19–169:6.

112. Dyax provided its position in writing on October 26, 2017, responding to Ares Trading just as it argues now—Dyax did the phage display work and provided the binder that became Bavencio, Dyax’s patents are not expired, and inventorship of the ’298 Patent should be corrected. JTX-186 at 1–

2. Ares Trading did not respond to Dyax at that time.
a Third Party Engaged in Confidential Negotiations.

B. In 2017, Dyax and [REDACTED]

[REDACTED]

113. Dyax and a third party engaged in confidential negotiations.
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Day 4 Tr. (Gates) at 55:11–58:19; JTX-18.

The third party
114. [REDACTED] was in a substantively different position than Ares Trading. For example, [REDACTED]
the third party was situated differently with regards to certain agreement terms.

[REDACTED]

[REDACTED]

[REDACTED] Day 4 Tr. (Gates) at 75:13–
the third party was subject to different terms.

23. Unlike Ares, [REDACTED]

See id.

115. Nevertheless, Dyax was willing to [REDACTED] take certain actions in the confidential negotiations
with the third party.

[REDACTED]

[REDACTED]

[REDACTED] Day 4 Tr. (Gates) at 56:11–22, 65:25–67:25, 69:10–70:4. Dyax and [REDACTED] the third party
agreed to take certain confidential actions.

[REDACTED] Day 4 Tr.

(Gates) at 123:5–124:5.

116. Dyax raised the issues regarding [REDACTED] the confidential negotiations.

[REDACTED]

[REDACTED] Day 4 Tr. (Gates) at 53:20–54:21, 55:19–56:9;

JTX-97 at 10–16, 30.

C. Ares Trading Restarted Negotiations in 2019.

117. Meanwhile, after Dyax provided its position on October 26, 2017, Ares Trading went silent until January 2019. JTX-186 at 1–2; JTX-37. Ares Trading’s primary negotiator, Dr. Ruediger Weseloh, testified as a witness under Rule 30(b)(6) of the Federal Rules of Civil Procedure that he did not know why Ares Trading waited until 2019 to respond to Dyax. DTX-614 (Weseloh Dep.) at 182:1–13. At trial, Dr. Weseloh claimed the delay was due to Ares Trading’s review of other agreements for *Brulotte*-type issues. Day 2 Tr. (Weseloh) at 158:19–159:4. Specifically, Dr. Weseloh testified, “there was an internal [*Brulotte*] review after that ongoing at that moment in time.” *Id.* Without any other supporting evidence, the Court finds this reason insufficient to reasonably explain that delay.

118. Despite the unexplained delay, Dyax quickly engaged with Ares Trading, agreeing to a meeting the very next month, in February 2019. JTX-186; PTX-540. At that February 2019 meeting, [confidential rate] Dyax explained its position as to why Ares Trading continued to owe a [redacted] royalty, and Ares Trading requested that Dyax reduce its explanation to writing, which Dyax promptly did. Day 4 Tr. (Gates) at 47:15–49:12; PTX-542 at 3–4. Dyax then agreed to a second meeting in March 2019, during which Ares Trading’s counsel, Msrs. Culligan and Hanish, conveyed their legal views and proposed that Ares Trading’s royalty to Dyax be reduced from [confidential range] [redacted]. Day 4 Tr. (Gates) at 50:8–51:5.

119. Dyax did not accept this. Dyax did not know if CAT would agree to a reduction, so Ares Trading’s proposal would have put Dyax at risk of losing all compensation for its work on PD-L1. *Id.* at 51:6–18. The only way Dyax could then have remained whole would have been to obtain a complete cessation of its upstream royalty to CAT. *Id.* at 63:23–64:15. However, in its [redacted] [details related to confidential negotiations] [redacted] *Id.* at 70:13–71:20. Dyax could not just give Ares Trading a reduction because of the risk that CAT would not agree to a reduction, potentially leaving Dyax without compensation for its work or leaving it facing a loss. *Id.* at 50:18–51:18, 63:16–65:22.

120. Conversely, Dyax could not seek a reduction from CAT without an agreement from Ares Trading to limit its reduction to a share of the reduction from CAT, because Ares Trading might later demand a larger reduction than Dyax secured from CAT, again potentially leaving Dyax without compensation or leaving it facing a loss. Dyax [REDACTED]

[REDACTED]. *Id.* at 123:5–124:5.

121. At the time of these Spring 2019 meetings, Dyax was [REDACTED] engaged in related confidential negotiations. [REDACTED] *Id.* at 51:23–52:5, 53:17–

55:9. Due to a confidentiality obligation, Dyax could not reveal details to Ares Trading, but said it was involved in related confidential negotiations. [REDACTED] *Id.*

122. Dyax did not lead or allow Ares Trading to believe that Dyax was seeking a reduction of other related confidential negotiations its royalty to CAT on Bavencio. Dyax explained that [REDACTED] might affect Dyax’s ability to come to a future agreement with Ares Trading. *Id.* at 51:19–52:5. Dyax explained that it was not under pressure from its dozens of other LFRP partners. *Id.* at 52:6–25. Dyax never committed to negotiate with CAT over Bavencio. *Id.* at 58:25–59:4; Day 2 Tr. (Weseloh) at 257:13–260:4. Indeed, Ares Trading’s negotiator admitted that Dyax did not expressly say it would seek such a reduction for Bavencio. Day 2 Tr. (Weseloh) at 259:24–260:4; *see* Day 4 Tr. (Gates) at 58:25–59:4 (confirming the same).

123. Though he admits Dyax never explicitly said it would go upstream to discuss a royalty reduction on Bavencio, Ares Trading’s negotiator testified that he took Dyax’s explanation to mean Dyax was already discussing a royalty reduction regarding Bavencio with CAT. Day 2 Tr. (Weseloh) at 174:19–175:12, 257:13–260:4. Ares Trading’s negotiator incorrectly concluded that Dyax had “agreed” to take on all the risk and cost of a dispute with CAT over Bavencio without an agreement with Ares Trading. *Id.* at 257:13–19. However, Ares Trading does not assert that Dyax knew of Ares Trading’s misunderstanding.

124. At the conclusion of the March 2019 meeting, Ares Trading did not ask Dyax to raise a dispute, nor did Dyax commit to doing so, but Dyax left open the possibility of a future agreement with Ares Trading. Day 4 Tr. (Gates) at 51:19–52:5, 58:25–59:4.

Engaged in Confidential Negotiations With a Third Party

D. Dyax

Dyax engaged in confidential negotiations with a third party.

125. After several months of delay

JTX-97 at 10–16; Day 4 Tr. (Gates) at 53:20–54:21, 55:19–56:9. Upon meeting with a third party the confidential issues.

, Dyax raised several arguments regarding

Day 4 Tr. (Gates) at 68:19–70:4.

The third party made several arguments in response.

Id. at 70:13–71:20; JTX-18 at 6 (referencing CAT’s

“know how”).

the third party discussed possible resolutions.

126. Through its negotiations, Dyax and

Id. at 71:22–72:5; JTX-97 at 32. Dyax took certain actions based on the confidential negotiations.

Day 4 Tr. (Gates) at 73:11–25.

E. Dyax Continued Negotiations with Ares Trading, but Ares Trading Chose to Litigate

Instead.

Dyax sought to offer terms to Ares Trading based on certain confidential agreements.

127.

Day 1 Tr. (Eckhardt) at 202:10–209:12; Day 4 Tr. (Gates) at 59:10–60:19, 95:17–96:8;

PTX-535.

128. Far from being unfair to Ares Trading, Dyax's [REDACTED] offered terms that were consistent with terms Dyax had offered before.

[REDACTED] Findings of Fact Nos. 113–15.

129. Ares Trading's negotiator, Dr. Weseloh, conceded that Dyax never explicitly told him that it would seek a reduction of its royalty on Bavencio. Day 2 Tr. (Weseloh) at 259:24–260:4. Nevertheless, by November 7, 2019, he was purportedly "shocked" to learn Dyax had not secured for Ares Trading a reduction. *Id.* at 178:2–21. Dr. Weseloh's portrayal of victimization is directly contradicted by Mr. Gates' testimony that he explained Dyax's concerns about losing money vis a vis CAT and Dr. Weseloh responded "that was [Dyax's] problem." Day 4 Tr. (Gates) at 63:22–65:22. The Court observed the demeanor and recollection of both witnesses and finds the specific memory of events of Mr. Gates much more credible.

130. Ares Trading could not have reasonably thought in November 2019 that Dyax had already obtained that reduction. No evidence in the record suggests Dyax was even aware of Ares Trading's misunderstanding. Rather, Dyax was seeking Ares Trading's cooperation so that Dyax could raise a dispute with CAT to obtain such a reduction.

131. Neither its lead negotiator, Dr. Weseloh, nor its in-house counsel, Mr. Jens Eckhardt, who details regarding Dyax's confidential negotiations oversaw this case, knew the [REDACTED], and thus neither was in a position to say that Dyax treated Ares Trading unfairly compared to [REDACTED] a third party. Mr. Eckhardt was authorized to receive prior confidential information under the Protective Order, and could have been informed of Dyax's [REDACTED] confidential negotiations [REDACTED], but he never obtained that information. Day 1 Tr. (Eckhardt) at 198:17–202:9, 209:13–210:16; Day 2 Tr. (Weseloh) at 262:23–263:25.

132. Ares Trading demanded a royalty reduction; it never asked Dyax to negotiate upstream with CAT. Dyax repeatedly offered Ares Trading [REDACTED] certain confidential terms [REDACTED], but Ares

Trading declined and sued instead. Day 4 Tr. (Gates) at 59:14–60:12, 63:16–65:23, 80:9–23, 97:17–98:9, 130:17–132:2; Day 1 Tr. (Eckhardt) at 202:10–210:16; Day 2 (Weseloh) at 253:18–254:9; PTX-535.

133. At trial, Ares Trading’s in-house counsel—the person “overseeing” the litigation—testified that “Ares Trading is not seeking a declaration that it owes no royalties under the CLA.” Day 1 Tr. (Eckhardt) at 90:10–91:16.

F. Dyax’s Negotiations Regarding [REDACTED] a Confidential Issue
A confidential issue

134. [REDACTED] presented different circumstances than those involving Ares Trading, since the issue involved different facts.

[REDACTED] Day 4 Tr. (Gates) at 75:24–76:15. With respect to Dyax itself, what Dyax received from CAT was effectively a bare patent license. *Id.* at 76:13–78:4. Dyax raised [REDACTED] arguments related to the confidential issue.

[REDACTED], after Ares Trading had already rejected the framework that Dyax proposed. *Id.* at 75:24–76:15. Nevertheless, Dyax was willing to [REDACTED] take certain actions for Ares [REDACTED] certain confidential terms.

[REDACTED], if Ares Trading had agreed to [REDACTED]

Id. at 80:9–18.

135. The Product License [REDACTED] involved in Dyax's negotiations does provide royalties for use of the CAT Patents, because that is how it defines the royalty-bearing products. JTX-103 at 34, § 6.1.2 (requiring Dyax to pay royalties on “Therapeutic Antibody Products”), 32, § 1.1 (defining “Therapeutic Antibody Product[s]” with reference to “MedImmune Licensable Antibody”), 29, § 1.1 (defining “MedImmune Licensable Antibody” with reference to the CAT Patents). Dyax’s 2012 umbrella agreement with CAT also provides for royalties for using the CAT Patents, but is not limited to any particular target. JTX-8 at 23, § 8.1.2 (requiring Dyax to pay royalties on “Therapeutic Antibody Product[s]”), 10, § 1.1 (defining “Therapeutic Antibody Product[s]” with reference to a “MedImmune Licensable Antibody”), 8, § 1.1 (defining “MedImmune Licensable Antibody” with reference to the CAT Patents).

Dyax engaged in confidential negotiations with a third party.

136.

[REDACTED] Day 4
[REDACTED] certain terms as a result of the confidential negotiations.

Tr. (Gates) at 78:9–80:8. Dyax obtained [REDACTED]

[REDACTED] JTX-9 at 4–7; JTX-2 at 8, § 6.1.2; Day 4 Tr. (Gates) at 79:21–80:8.
other confidential terms as a result of the confidential negotiations.

Dyax also obtained [REDACTED]

JTX-9 at 4; Day 4 Tr. (Gates) at 79:21–80:8.

137. That agreement is the only agreement presented in this case with [REDACTED]

certain confidential terms.

[REDACTED] Day 4 Tr. (Gates) at 76:8–80:8; Day 3 AM Tr. (Hausman) at 65:22–66:4.
agreements contain other related terms.

Dyax’s other [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] JTX-7 at 30, § 11.3; JTX-97 at
32–35; Day 4 Tr. (Gates) at 56:11–57:23, 68:19–69:19, 71:22–72:14, 75:1–12, 108:9–19.

Dyax and the third party came to a resolution based on certain arguments.

138.

[REDACTED]

[REDACTED] Day 4 Tr. (Gates) at 76:13–15; Day 4 Tr. (Buthusiem) at 213:22–216:18.
there were circumstances with the third party that led to an appropriate resolution.

Further, [REDACTED]

[REDACTED]

certain positions in certain negotiations,

139. Although Dyax has argued [REDACTED]

[REDACTED], Dyax has never achieved that result. Day 4 Tr. (Gates) at 78:9–80:8 ([REDACTED]
[confidential agreement terms] [confidential agreement terms] The third party
[REDACTED]), 71:22–72:5 ([REDACTED]). [REDACTED] has always maintained [REDACTED]
certain confidential arguments related to the negotiations.

[REDACTED]. *Id.* at 70:13–71:20.

140. Section 5.1(e) of the CLA states:

“Ownership by Licensee. [Ares] shall own all inventions, discoveries and results made by
or on behalf of [Ares] in exercising its rights under this Agreement (collectively referred

to as ‘Product Inventions’), including but not limited to (i) any Dyax Antibodies, (ii) any methods of manufacture and/or use of Dyax Antibodies, (iii) any Research Results, and any intellectual property rights to the foregoing. Dyax hereby grants and shall execute and deliver to [Ares], without charge, irrevocable assignments of all of its right, title and interest in and to such Product Inventions and any intellectual property rights thereto and shall take all other actions as may reasonably be requested by [Ares] to vest in [Ares] all right, title and interest in such Product Inventions and any intellectual property rights thereto. [Ares] shall have the sole right to prepare, file, prosecute, maintain, defend, and enforce patent applications and patents arising therefrom claiming Product Inventions.”

Joint Fact No. 39; JTX-1 at 26, § 5.1(e).

141. The inventions claimed in U.S. Patent No. 9,624,298 are Product Inventions as defined in Section 5.1(e) of the CLA. Joint Fact No. 40.

142. Under Section 5.1(e) of the CLA, Dyax granted to Ares Trading an irrevocable assignment of all of its right, title and interest in and to U.S. Patent No. 9,624,298. JTX-1 at 26, § 5.1(e).

143. U.S. Patent No. 9,624,298 is not included in the “Dyax Patent Rights” as defined in Section 1.24 of the CLA. Joint Fact No. 38.

144. Merck Patent GmbH owns U.S. Patent No. 9,624,298. Joint Fact No. 37.

145. The inventors named on the face of U.S. Patent No. 9,624,298 are Horacio G. Nastri, Christel Iffland, Olivier Leger, Qi An, Mark Cartwright and Sean D. McKenna. Joint Fact No. 36; JTX-273, cover page.

146. Dr. Hayet Ammar is the only Dyax employee that Dyax contends should be named as an inventor on U.S. Patent No. 9,624,298. *See* D.I. 198, Joint Pretrial Order, 19–20, ¶ 56.

147. Dyax did not offer any testimony from Dr. Ammar, either in person at trial or by deposition, about what she did in relation to the PD-L1 project. Day 3 PM Tr. (Sexton) at 191:9–16. Dyax made a tactical decision “of relying on the documentary evidence” rather than taking Dr. Ammar’s deposition. Day 4 Tr. (Sexton) at 33:23–34:1.

148. Dyax's expert, Dr. Sexton, testified about his opinion regarding Dr. Ammar's contributions to the PD-L1 project, but he never talked with Dr. Ammar about the work she did on the PD-L1 project. Day 4 Tr. (Sexton) at 4:10–13.

149. Dr. Sexton testified that he came to his conclusions about Dr. Ammar's work based on Dr. Sexton's review of Dyax's Webphage database that Dyax's scientists used to enter information about the work they did at Dyax. Day 3 PM Tr. (Sexton) at 175:21–176:9.

150. Dr. Sexton testified on cross-examination that “in this situation, there's a lot of information that's missing, and it's relevant information” Day 4 Tr. (Sexton) at 34:14–19. Dr. Sexton explained that he would have expected the information that is missing from Dyax's Webphage system to be included in a laboratory notebook (*see id.* at 34:20–35:1), but Dyax did not offer any of Dr. Ammar's laboratory notebooks into evidence at trial even though Dyax would have maintained those lab notebooks. *See* Day 3 PM Tr. (Sexton) at 175:7–9 (“THE COURT: Would Dyax maintain those lab notes [of Dr. Ammar]? THE WITNESS: They would.”); *see also* Day 4 Tr. (Sexton) at 7:21–23 (“I don't know where Dr. Ammar's notebook is.”).

151. Dr. Sexton could only assume that Dr. Ammar did certain work on the PD-L1 project because her name, in full or in the abbreviated form “HAMM,” *see* Day 3 PM Tr. (Sexton) at 189:12–17, is associated with certain entries in Dyax's Webphage system. *See, e.g.,* Day 4 Tr. (Sexton) at 9:10–16. Dr. Sexton testified on cross examination and in response to a question from the Court that there are aspects of the PD-L1 work for which he does not know who made what decisions or even who entered the information in Webphage. *See id.* at 11:21–12:11 (regarding alternating between human and mouse forms); *id.* at 20:13–17 (“THE COURT: . . . [I]s there any way to tell from reviewing the documents in the original system who makes those entries? THE WITNESS: There's not.”).

152. Dyax relies on entries in the Webphage system (Dyax Op. Br. at 41), many of which include Dr. Ammar's name, but none of the entries—or any other evidence—provides clear and

convincing evidence of any inventive act by Dr. Ammar. Moreover, the evidence shows the involvement of many people, making it far from clear and convincing that Dr. Ammar should be a named inventor as opposed to or in addition to anybody else.

153. Dyax's expert Dr. Sexton testified that Dr. Ammar's manager, Dr. Ricarda Finnern, was involved in choosing selection strategies for the PD-L1 project. Day 4 Tr. (Sexton) at 21:2–6. Dr. Sexton also testified that the name of Dr. Ammar's colleague, Henk Pieters, was a member of the "core team" for Dyax working on the PD-L1 project although Dr. Ammar was not, *see* JTX-92 at 3; Day 4 Tr. (Sexton) at 13:18–14:9, is identified along with Dr. Ammar in some of the entries in the Webphage system. Day 3 PM Tr. (Sexton) at 191:20–193:8; Day 4 Tr. (Sexton) at 13:13–17, 35:24–36:2; *see* DTX-441 at 3–6 (noting "selection done by Hayet and Henk" for selections 562A-SC-002-SR-002, 562A-SC-002-SR-003, 562A-SC-003-SR-003, 562A-SC-003-SR-004, 562A-SC-004-SR-002, and 562A-SC-004-SR-003).

154. For entries in the Webphage system that contained the names of both Dr. Ammar and Henk Pieters, Dr. Sexton testified that he did not know which of them made the entry. Day 4 Tr. (Sexton) at 19:25–20:3.

155. Ares Trading and Dyax formed the Research Steering Committee defined in the CLA consisting of Ares Trading representatives and Dyax representatives, and that Committee worked on the Research Campaign for Ares Trading's PD-L1 target and for Ares Trading's other targets included in Research Campaign 1 under the CLA. *See* JTX-230 at 1–2; Day 2 Tr. (Hofmeister) at 55:3–25. Dyax issued a "final report" about work done in connection with the Research Campaign for PD-L1 that includes Dyax's delivery of 167 Fabs to Ares Trading. JTX-59. The final report indicates that Dyax did some work on the project and Ares Trading's affiliate Serono also did some work on the project. *See, e.g.*, DTX-603, Nixon Dep. Tr. at 24:23–25:18, 164:12–165:9, 165:20–23 (testifying that Table IV of the final report was generated by Serono).

156. Dyax contends that “[u]ltimately, it was Dr. Ammar’s choices that resulted in the F02 Fab” and that Dr. Ammar “discovered the F02 Fab.” Dyax Op. Br. at 42.

CONCLUSIONS OF LAW

I. Legal Standard: Ares Trading Has the Burden of Proof, and It Must Provide “Clear Evidence” to Establish that *Brulotte* Applies.

1. Massachusetts law governs the CLA. Finding of Fact No. 71; JTX-1 at 35, § 10.5. According to Massachusetts law, Ares Trading has the burden of proof on its claims, including its argument that its royalty obligation under the CLA is unenforceable. *Kendall v. Hyannis Restorations Int’l Sales, Inc.*, 805 N.E.2d 91, *5 (Mass. App. Ct. 2004) (“[T]he party seeking to avoid a contract bears the burden of establishing illegality.”) (citing *Hastings Assocs., Inc. v. Loc. 369 Bldg. Fund, Inc.*, 675 N.E.2d 403, 412–13 (Mass. App. Ct. 1997) (applying in the context of lease agreements)); Ares Trading’s Revised Response Brief, D.I. 252 (“Ares Resp.”) at 24 (acknowledging that it has the burden of proof on its claims); Pretrial Order, D.I. 198 at 13, ¶ 39 (acknowledging that it has the burden of proof on its claims).

2. Ares Trading must show “clear evidence” of the factual elements of its claim that *Brulotte* preempts Massachusetts contract law, which would otherwise enforce Ares Trading’s royalty obligation under the CLA. *Aronson v. Quick Point Pencil Co.*, 440 U.S. 257, 262 (1979) (explaining that federal patent law operates through preemption); *Wyeth v. Levine*, 555 U.S. 555, 571 (2009) (demonstrating that a party asserting preemption has the burden to establish the predicate facts with “clear evidence”); *Geier v. Am. Honda Motor Co.*, 529 U.S. 861, 885 (2000) (explaining that “a court should not find pre-emption too readily in the absence of clear evidence of a conflict”).

II. *Brulotte* Does Not Render Ares Trading’s Royalty Obligation Unenforceable. [Ares Trading’s Count One; Dyax’s Counterclaim One]

A. *Brulotte* Does Not Apply, Since Ares Trading’s Royalties Are Not for Use—Let Alone

Post-Expiration Use—of the CAT Patents.

3. The rule in *Brulotte* concerns license agreements that use royalties to project restrictions on the use of the patented technology beyond the patent term set by Congress. *Brulotte*, 379 U.S. at 29–31 (“The right to make, the right to sell, and the right to use ‘may be granted or conferred separately by the patentee.’ But these rights become public property once the 17-year period expires.”), 33–34 (“The exaction of royalties for use of a machine after the patent has expired is an assertion of monopoly power in the post-expiration period when, as we have seen, the patent has entered the public domain [A]fter expiration of the last of the patents incorporated in the machines ‘the grant of patent monopoly was spent’ and [] an attempt to project it into another term by continuation of the licensing agreement is unenforceable.”); *Kimble v. Marvel Ent., LLC*, 576 U.S. 446, 451–52 (2015) (“Patents endow their holders with certain superpowers, but only for a limited time. In crafting the patent laws, Congress struck a balance between fostering innovation and ensuring public access to discoveries This Court has carefully guarded that cut-off date, just as it has the patent laws’ subject-matter limits *Brulotte* was brewed in the same barrel.”).

4. For the royalties to extend the term of the licensed patents the royalties must be for practicing the licensed patents after they have expired. *Brulotte*, 379 U.S. at 31 (“The royalty payments due for the post-expiration period are by their terms for use during that period, and are not deferred payments for use during the pre-expiration period. Nor is the case like the hypothetical ones put to us where non-patented articles are marketed at prices based on use. The machines in issue here were patented articles”), 32 (“The sale or lease of unpatented machines on long-term payments based on a deferred purchase price or on use would present wholly different considerations.”); *Kimble*, 576 U.S. at 449 (“In *Brulotte* . . . , this Court held that a patent holder cannot charge royalties for the use of his invention after its patent term has expired.”), 453 (“In the *Brulotte* Court’s view, contracts to pay royalties for such use continue ‘the patent monopoly beyond the [patent] period,’ even though only as to the

licensee affected And in so doing, those agreements conflict with patent law’s policy of establishing a ‘post-expiration . . . public domain’ in which every person can make free use of a formerly patented product.”); *Zenith Radio Corp. v. Hazeltine Rsch., Inc.*, 395 U.S. 100, 136 (1969) (explaining that in *Brulotte*, “the post-expiration royalties were not for prior use but for current use, and were nothing less than an effort by the patentee to extend the term of his monopoly beyond that granted by law”).

5. Agreements that do not charge royalties for post-expiration use of licensed patents do not extend the term of those patents and so do not implicate *Brulotte*. *Brulotte*, 379 U.S. at 31–32 (distinguishing contracts that provide for “deferred payments for use during the pre-expiration period” or “unpatented machines on long-term payments based on a deferred purchase price or on use”); *Kimble*, 576 U.S. at 453–54 (“Yet parties can often find ways around *Brulotte*, enabling them to achieve those same ends. To start, *Brulotte* allows a licensee to defer payments for pre-expiration use of a patent into the post-expiration period; all the decision bars are royalties for using an invention after it has moved into the public domain.”), 454 (“And parties have still more options when a licensing agreement covers either multiple patents or additional non-patent rights. Under *Brulotte*, royalties may run until the latest-running patent covered in the parties’ agreement expires. . . . Finally and most broadly, *Brulotte* poses no bar to business arrangements other than royalties—all kinds of joint ventures, for example—that enable parties to share the risks and rewards of commercializing an invention.”).

6. Consequently, to establish that *Brulotte* renders its royalty obligation in the CLA unenforceable, Ares Trading has the burden of proving that its royalties are for post-expiration use of the licensed patents. *Kimble*, 576 U.S. at 459 (“The [*Brulotte*] decision is simplicity itself to apply. A court need only ask whether a licensing agreement provides royalties for post-expiration use of a patent. If not, no problem; if so, no dice.”); *Bayer AG v. Housey Pharms., Inc.*, 228 F. Supp. 2d 467, 472 (D. Del. 2002) (finding no violation of *Brulotte*: “In *Brulotte*, the Supreme Court held that patent misuse occurs when a licensing agreement ‘allows royalties to be collected which *accrued* after the last of the patents . . . [has]

expired.’ 379 U.S. at 30 . . . (emphasis added). In the case at bar, the royalties to be paid after the expiration of the patent are for the use of the subject invention prior to the expiration of the patent. Royalties are collected based on later pharmaceutical sales, but the royalties are being *accrued* as the invention is practiced during the research phase.” (emphasis original)).

7. Ares Trading has not met its burden to show that its royalties are for post-expiration use of the licensed patents for several reasons. First, under the CLA, the parties agreed that Dyax would do the antibody phage display work that the expired CAT Patents cover. Findings of Fact Nos. 34, 37, 38, 46, 96. Consequently, as Ares Trading admitted in response to Dyax’s Request for Admission, it never practiced the expired CAT Patents to develop Bavencio. Finding of Fact No. 97. According to Rule 36(b) of the Federal Rules of Civil Procedure, this admission creates a fact that is “conclusively established” for the purposes of this litigation. *Airco Indus. Gases, Inc. v. Teamsters Health & Welfare Pension Fund*, 850 F.2d 1028, 1036 (3d Cir. 1988). Since Ares Trading did not use the expired CAT Patents, its royalties cannot be for post-expiration use of those patents, and *Brulotte*’s requirements are not met.

8. Second, Ares Trading has not met its burden to show that its royalties are for post-expiration use of the licensed patents because, even though Dyax did likely use the CAT Patents, that use was entirely before expiration. Findings of Fact Nos. 96, 98. Again, Ares Trading admitted this fact in Dyax’s Request for Admission, making it “conclusively established” for the purposes of this litigation. Fed. R. Civ. P. 36(b); *Airco Indus. Gases, Inc.*, 850 F.2d at 1036. Ares Trading never identified a case where the licensor’s use of the expired patents could invoke *Brulotte*; in *Brulotte* and *Kimble* it was the licensee’s obligation to pay royalties for their own use that mattered. *Brulotte*, 379 U.S. at 30; *Kimble*, 576 U.S. at 450. Nevertheless, the Court need not address whether *Brulotte* can be extended to royalties paid by a licensee when it is the licensor that uses the expired patents, because here, all such use of the expired patents occurred before expiration. Consequently, again, Ares Trading’s royalties cannot be for

post-expiration use of those patents, and *Brulotte*'s requirements are not met.

9. Third, Ares Trading has not met its burden to show that its royalties are for post-expiration use of the licensed patents because Ares Trading's royalty obligation in the CLA does not turn on whether it uses the CAT Patents. Finding of Fact No. 64. Rather, under the CLA, royalties are paid on sales of "Therapeutic Antibody Products," which are defined by whether the product was made from a Fab identified from Dyax's antibody display library. Findings of Fact Nos. 63–64. Indeed, any use of the CAT Patents by Ares Trading, before or after their expiration, would not have incurred any royalty obligation to Dyax under the CLA. Finding of Fact No. 64. Consequently, the CLA does not "provide[] royalties for post-expiration use of a patent." *Kimble*, 576 U.S. at 459.

10. *Brulotte* does not apply to Ares Trading's royalty obligations because that obligation is for something different than post-expiration use of the CAT Patents. Ares Trading entered into the CLA because it wanted Dyax to do certain work with its antibody phage display library. Findings of Fact Nos. 24, 33. The royalties were deferred compensation for that work, which benefitted Ares Trading because it had to pay compensation only if and to the extent that the Dyax work succeeded. Findings of Fact Nos. 56–60. In this case, the royalties were a means for the parties to share the risk and reward of their collaboration. Findings of Fact Nos. 20, 58–59, 61. As the Supreme Court has made clear repeatedly, *Brulotte* does not prohibit using royalties as deferred compensation for pre-expiration work or to share the risk of a collaboration. *Brulotte*, 379 U.S. at 31–32 (distinguishing contracts that provide for "deferred payments for use during the pre-expiration period" or "unpatented machines on long-term payments based on a deferred purchase price or on use"); *Kimble*, 576 U.S. at 453–54 (explaining that "*Brulotte* allows a licensee to defer payments for pre-expiration use of a patent into the post-expiration period" and arrangements "that enable parties to share the risks and rewards of commercializing an invention"); *Zenith Radio*, 395 U.S. at 136; *Housey*, 228 F. Supp. 2d at 472–73.

B. Even if *Brulotte* Did Apply, Ares Trading Did Not Meet Its Burden of Proof.

11. Although *Brulotte* does not apply to the CLA royalties at issue here, Ares Trading also fails to meet its burden of proof of providing clear evidence that the CLA royalties extend past the expiration of the licensed patents at issue.

12. Ares Trading argues that *Brulotte* does not require that the royalties be for post-expiration use of the licensed patents. Rather, Ares Trading argues that it is enough that the expired patents were licensed and the royalties extend past their expiration. *See, e.g.*, Ares Resp. at 27 (“Dyax misses the point—there were patents licensed in *Brulotte*, and the Supreme Court was distinguishing a patent license from licenses that do not relate to patents . . .”). However, the only unexpired patent implicated in *Brulotte* was one that was licensed but unused. *Brulotte*, 379 U.S. at 30 n.2.

13. If Ares Trading were correct that *Brulotte* does not require the royalties be for post-expiration use of the licensed patents, *Brulotte* would not render Ares Trading’s royalty obligation unenforceable because the CLA also licensed the “Dyax Patent Rights.” Findings of Fact Nos. 40–45, 100. Among the “Dyax Patent Rights” is the ’743 Patent, which will not expire until January 15, 2028. Findings of Fact Nos. 42–44. That date is after the end of Ares Trading’s ten-year royalty obligation to Dyax on sales of Bavencio. Finding of Fact No. 44. Since “[u]nder *Brulotte*, royalties may run until the latest-running patent covered in the parties’ agreement expires,” *Kimble*, 576 U.S. at 454, *Brulotte* would not apply until the ’743 Patent expires, and thus *Brulotte* would not apply until after Ares Trading’s royalty obligation ended.

14. Ares Trading argues that the ’743 Patent or the “Dyax Patent Rights” do not delay *Brulotte*’s application because, it asserts, the royalties on Bavencio are paid for the license to the CAT Patents only. Ares Resp. at 36. Ares Trading cites no authority for this interpretation of *Brulotte*. On the contrary, if that were the rule, *Brulotte* would have needed to consider whether the royalties at issue there were paid “for” the one unexpired patent that was also licensed in that case. Instead, *Brulotte* distinguished the unexpired patent only on the basis that it was not used. *Brulotte*, 379 U.S. at 30 n.2.

15. Further, Ares Trading has not met its burden to prove that the royalties were paid for the license to the CAT Patents. The only evidence it cites is that Section 4.9 of the CLA, which sets the royalty duration, mentions the CAT Patents. Ares Resp. at 34–35. However, that mention of the CAT Patents is in alternative language that never applied and so never affected the royalty duration for Bavencio. Finding of Fact No. 70. Further, the language mentioning the CAT Patents was included to ensure that Dyax covered its costs to CAT, not to limit what the royalties are paid for. Findings of Fact Nos. 20, 69. Consequently, even under Ares Trading’s interpretation of *Brulotte*, it has not met its burden to show that its royalty obligation to Dyax is unenforceable.

III. Even if *Brulotte* did apply, Ares Trading’s Evidence for a Reduction in Royalty Rates is Unpersuasive and Insufficient to Support Reformation to a Lower Royalty Rate. [Ares Trading Count Two]

16. Although *Brulotte* does not apply to this case and Ares Trading’s Count Two is therefore moot, for a complete record, the Court will comment on the evidence offered by the parties regarding appropriate reduced royalty rates.

17. Ares Trading’s proposed reformed royalty turns exclusively on the testimony of their expert, Professor Jerry Hausman. But Professor Hausman’s analysis—purportedly based on “nearest neighbor” comparisons—relied upon inspection of two very different Dyax agreements that have low royalty rates for different benefits Dyax provided beyond those Ares Trading received in the CLA. Neither agreement was comparable to the CLA. Findings of Fact Nos. 101–109. Despite available [confidential rate] data on what Dyax itself agreed to pay for a license to the CAT Patents—the very element of the [redacted] royalty sought to be extracted due to expiration—Professor Hausman ignored those data points. Finding of Fact No. 49. Since CAT did the antibody phage display work that the CAT Patents cover, unlike Ares Trading, Dyax’s [redacted] [confidential rate] royalty under the PD-L1 Product License with CAT should have set an upper limit on the value the CAT Patents would have had to Ares Trading. Findings of Fact Nos. 46, 96–98.

18. Professor Hausman did not attempt to value the royalty portion associated with the CAT Patents. Instead, he looked only at two other data points, what he referred to as “access to Dyax antibody phage display technology” and a “license to Dyax IP.” Day 3 AM Tr. (Hausman) at 13:5–18, 14:15–19. He assumed that these two items are the only value that remains of Dyax’s contributions under the CLA [confidential rate] for which Dyax should be compensated. However, Professor Hausman did not include in the [redacted] royalty much of what led Ares Trading to seek Dyax out to begin with: (1) Dyax’s expertise, which was the reason Ares Trading selected Dyax; (2) technical work Dyax performed under the CLA; (3) 167 delivered binding fragments; (4) exclusivity to those binding fragments Dyax provided; or (5) assignment of all inventions discovered by Dyax’s scientists. *Id.* at 47:1–49:2, 49:11–51:9, 57:18–59:16, 64:21–65:12; Findings of Fact Nos. 33, 36, 69, 82–83, 100.

[confidential rate]

19. Instead, in assessing the value of the portion of the [redacted] royalty not attributable to the CAT Patents, Professor Hausman considered only two prior agreements involving Dyax and unrelated third parties. Day 3 AM Tr. (Hausman) at 39:5–7. These were not “nearest neighbors.” Neither data point was materially similar to the value and apportionment of value represented in the CLA, including because they describe library license agreements rather than funded research agreements like the CLA, meaning that Dyax’s licensees in those agreements did not get any of the value that Ares Trading received under the CLA. Findings of Fact Nos. 101–109.

20. Further, the royalty rates that Professor Hausman derived from these agreements are ^{changed} unsupported by the evidence. For example, the 2007 CAT Agreement [redacted] Dyax’s royalty to CAT [confidential rate] by [redacted] across many product licenses, including some worth far more to Dyax than the PD-L1 Product License under which Dyax pays royalties on Bavencio. Finding of Fact No. 105. However, Professor ^{change} Hausman treated that [redacted] as if it was worth only the [redacted] ^[confidential rate] for just the PD-L1 Product License. Day 3 AM Tr. (Hausman) at 54:21–55:5. Adding up the value that Dyax received with the ^{changed} [redacted] rate on each of those product licenses shows that CAT paid far greater value for Dyax’s antibody

phage display libraries than Professor Hausman credited. Professor Hausman likewise ignored that the 2000 ImClone Agreement concerned an older version of Dyax library, yet used that royalty rate as the cap of the value of Dyax's newer, improved libraries. *Id.* at 41:4–10, 58:18–21.

[confidential rate]
21. Ultimately, the CLA's [REDACTED] royalty represented deferred compensation to Dyax for the significant value it provided to Ares Trading in the discovery and development of its cancer therapeutic, Bavencio. Findings of Fact Nos. 36, 38, 55–56, 59–60, 64, 82, 99, 100.

22. Professor Hausman ignored all of the evidence noted above in assessing a reformed royalty, and his analysis is entitled to no weight. In addition, the Court observed the demeanor and manner of this witness on direct and cross examination, and during direct questioning by the Court. The Court observes that at times Professor Hausman was evasive or uncertain in his answers, and that his explanations of inconsistencies were unpersuasive.

IV. Since the Court Finds That the CLA's Royalties Are Not Unenforceable Under *Brulotte*, Dyax's Counterclaims to Amend or Reform the CLA and Restore the Royalty Are Moot. [Dyax Counterclaim Counts Three and Four]

23. Dyax asserted its Counterclaim Counts Three and Four to amend or reform the CLA, respectively, in order to restore the royalty to its original rate in the event the Court found the CLA royalty unenforceable under *Brulotte*.

24. Since the Court finds *Brulotte* does not apply to the royalty provision of the CLA, Dyax's Counterclaim Counts Three and Four are moot.

V. Since the Court Finds That the CLA's Royalties Are Not Unenforceable Under *Brulotte*, Dyax's Counterclaims of Breach of Contract and Breach of the Covenant of Good Faith and Fair Dealing Are Moot. [Dyax Counterclaim Counts Five and Six]

25. Dyax asserted its Counterclaim Counts Five and Six to claim breach of contract and breach of the covenant of good faith and fair dealing in the event the CLA royalty was found unenforceable

under *Brulotte* and Ares Trading refused to reform the CLA to restore the royalties per Section 10.10 of the CLA.

26. Since the Court finds *Brulotte* does not apply to the royalty provision of the CLA, Dyax's Counterclaim Counts Five and Six are moot.

VI. Dyax Has Not Breached the Implied Covenant of Good Faith and Fair Dealing, Nor Would Dyax Breach by Holding Ares Trading to the CLA. [Ares Trading's Count Three]

A. The Implied Covenant Does Not Impose on Dyax New Obligations to Seek a Reduction of Its Royalty or to Reduce Ares Trading's Royalty.

27. Massachusetts law governs the CLA. Finding of Fact No. 71; JTX-1 at 35, § 10.5. Under Massachusetts law, the implied covenant "concerns the manner of performance" of a contract's existing obligations, and "may not . . . be invoked to create rights and duties not otherwise provided for in the existing contractual relationship." *Uno Rests., Inc. v. Bos. Kenmore Realty Corp.*, 805 N.E.2d 957, 964 (Mass. 2004). No implied covenant breach occurs where "neither party injures the rights of another to reap the benefits prescribed by the terms of the contract." *Id.*; see also *Lanza v. Fin. Indus. Regul. Auth.*, 953 F.3d 159, 164–65 (1st Cir. 2020) (affirming dismissal of an implied covenant claim because the plaintiff sought relief contrary to the contract's terms: "It is clear beyond hope of contradiction that the implied covenant of good faith and fair dealing 'does not create rights or duties beyond those the parties agreed to when they entered into the contract.' *Bos. Med. Ctr. Corp. v. Sec'y of Exec. Office of Health & Human Servs.*, 463 Mass. 447, 974 N.E. 2d 1114, 1126–27 (2012).").

28. Ares Trading's implied covenant claim seeks to impose new obligations on Dyax that are not in the CLA. Ares Trading has not pointed to any existing obligation in the CLA that Dyax has performed unfairly or without good faith by not (a) seeking a reduction from CAT of Dyax's royalty on sales of Bavencio, (b) sharing such a reduction with Ares Trading, or (c) simply giving Ares Trading a reduction regardless of whether Dyax obtains a reduction from CAT. Without such "benefits prescribed

by the terms of the contract,” Dyax’s unwillingness to do so in the circumstances or manner that Ares Trading wants does not breach the implied covenant. *Uno Rests., Inc.*, 805 N.E.2d at 964, 967 (entering judgment against an implied covenant count); *Blue Hills Off. Park LLC v. J.P. Morgan Chase Bank*, 477 F. Supp. 2d 366, 376 (D. Mass. 2007) (rejecting the plaintiff’s argument that the implied covenant required the defendant to “meet[] and cooperat[e]” despite no such obligation being in the contract).

29. Ares Trading seeks to imply a covenant allowing it to pay a royalty less than the [confidential rate] ■■■■■ royalty expressly required in the CLA. However, those implied covenants would be “flatly inconsistent with the plain language” of the CLA. *Merriam v. Demoulas Super Markets, Inc.*, 985 N.E.2d 388, 396 (Mass. 2013) (rejecting an implied covenant claim that would have inserted an obligation that the parties did not include); *see also McAdams v. Mass. Mut. Life Ins. Co.*, 391 F.3d 287, 302 (1st Cir. 2004) (dismissing implied covenant claim: “As *UNO Restaurants* makes clear, the covenant cannot be used to contradict clear contractual terms.”); *Lanza*, 953 F.3d at 164 (“[I]t is clear that a party cannot weaponize the implied covenant in a manner that contradicts the plain terms of a contract.”); *Boston Medical Center Corp.*, 974 N.E.2d at 1126 (holding the state “cannot be found to have acted in bad faith or to have dealt unfairly by failing to provide reimbursement at higher rates” when the claimant hospital “agreed in the contract to accept the rates of payment . . .”).

B. Dyax Has Treated Ares Trading Fairly and With Good Faith at Every Stage of Their Negotiations.

30. Ares Trading has not proven that Dyax has any obligation to negotiate with Ares Trading, and consequently, the manner in which Dyax did is not relevant to the implied covenant. Nevertheless, on review of the evidence, Dyax negotiated fairly with Ares Trading. Although the parties seem to disagree about what was said, the Court found more credible Mr. Gates’ specific recollections in Finding of Fact 129, and there is no evidence that Dyax misled Ares Trading, withheld any information that it would have otherwise been able to share with Ares Trading, agreed to do anything that it did not do, or

was even aware that Ares Trading possessed a different understanding of the situation. Findings of Fact Nos. 121–124, 127–132. Rather, the evidence shows that Dyax sought a resolution of Ares Trading’s concerns about *Brulotte* that would have been advantageous to both Ares Trading and Dyax. Findings of Fact Nos. 117–124, 127–132. Ares Trading was not willing to agree to Dyax’s framework proposal and chose instead to litigate the issue. Finding of Fact No. 132. There is no evidence of unfairness by Dyax in these negotiations.

VII. Ares Trading’s Sub-License from Dyax Has Not Terminated Since Ares Trading Has Not Proven the Underlying Product License Between Dyax and CAT Should Be “Deemed Terminated.” [Ares Trading’s Count Four]

31. Ares Trading’s argument in its Count Four rests on the following sequences of arguments: (1) Dyax’s royalty obligation to CAT under the PD-L1 Product License, JTX-2, is unenforceable under *Brulotte* and so should be “deemed terminated,” (2) as a consequence, the PD-L1 Sublicense between Dyax and Ares Trading, JTX-3, should also be deemed terminated, (3) which means Ares Trading “is no longer obligated to pay royalties to Dyax under the CLA in return for the rights to the CAT Patents granted under the Sublicense Agreement.” Pretrial Order, D.I. 198 at 16–17, ¶ 47; Ares Br. at 46–47; Ares Resp. at 58–61.

32. Ares Trading’s post-trial brief seeks an order “declaring that Ares no longer has to pay royalties to Dyax on Ares Trading’s sales of Bavencio.” Ares Br. at 48. However, at trial, Ares Trading disavowed that it was seeking that relief. Ares Trading’s in-house counsel—the person “overseeing” the litigation—testified that “Ares Trading is not seeking a declaration that it owes no royalties under the CLA.” Finding of Fact No. 133.

33. In the first step in Ares Trading’s argument, it asks that the PD-L1 Product License between Dyax and CAT be “deemed terminated” because the royalty is entirely unenforceable under *Brulotte*. Pretrial Order, D.I. 198 at 16–17, ¶ 47. Finding the PD-L1 Product License entirely

unenforceable, and not just reforming it as it seeks with the CLA, is critical to Ares Trading’s argument, because Ares Trading’s basis for “deem[ing]” the PD-L1 Product License terminated is that there are no royalties due whatsoever. *Id.* (citing JTX-2 at 12–13, § 11.1, requiring a complete end to Dyax’s royalty for the agreement to terminate). Although Dyax has [REDACTED]

[REDACTED] engaged in confidential negotiations. [REDACTED] certain confidential results. [REDACTED] Dyax has never achieved [REDACTED]

[REDACTED] Findings of Fact Nos. 126, 136, 139. [REDACTED] In the confidential negotiations, Dyax and the third parties have argued certain positions. [REDACTED]

[REDACTED] in its confidential negotiations [REDACTED] Findings of Fact Nos. 125, 139. Consequently, [REDACTED] Dyax obtained [REDACTED] certain confidential results.

[REDACTED] Ares Trading has not proven that if Dyax challenged its [details regarding confidential term] royalty obligation under the PD-L1 Product License [REDACTED] Since a reduction of Dyax’s royalties under the PD-L1 Product License would not terminate that agreement, Ares Trading has not proven the first element of its argument. Ares Trading provides no other basis for the relief it seeks.

VIII. Dyax Did Not Meet Its Burden in Support of Its Counterclaim for Correction of Inventorship. [Dyax’s Counterclaim Count Two]

34. “Whenever through error a person is named in an issued patent as the inventor, or through error an inventor is not named in an issued patent, the Director [of the United States Patent and Trademark Office] may, on application of all the parties and assignees, with proof of the facts and such other requirements as may be imposed, issue a certificate correcting such error.” 35 U.S.C. § 256(a).

35. “The error of omitting inventors or naming persons who are not inventors shall not invalidate the patent in which such error occurred if it can be corrected as provided in this section. The court before which such matter is called in question may order correction of the patent on notice and hearing of all parties concerned and the Director [of the United States Patent and Trademark Office] shall issue a certificate accordingly.” 35 U.S.C. § 256(b).

36. “Inventorship is a question of law with underlying factual issues.” *Checkpoint Sys., Inc. v. All-Tag Sec. S.A.*, 412 F.3d 1331, 1338 (Fed. Cir. 2005).

37. “The inventors as named in an issued patent are assumed to be correct.” *Hess v. Advanced Cardiovascular Sys., Inc.*, 106 F.3d 976, 980 (Fed. Cir. 1997) (quoting *Amax Fly Ash Corp. v. United States*, 514 F.2d 1041, 1047 (Ct. Cl. 1975)).

38. “Because the issuance of a patent creates a presumption that the named inventors are the true and only inventors . . . the burden of showing misjoinder or nonjoinder of inventors is a heavy one and must be proved by clear and convincing evidence” *Bd. of Educ. v. Am. BioSci., Inc.*, 333 F.3d 1330, 1337 (Fed. Cir. 2003) (citations omitted).

39. “The general rule is that a party alleging misjoinder or non-joinder of inventors must meet the heavy burden of proving its case by clear and convincing evidence . . . and must provide evidence to corroborate the alleged joint inventor’s conception” *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1358 (Fed. Cir. 2004) (citing *Hess*, 106 F.3d at 980; *Garrett Corp. v. United States*, 422 F.2d 874, 880 (Ct. Cl. 1970); *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1461 (Fed. Cir. 1998)); *see also Fina Oil Chem. Co. v. Ewen*, 123 F.3d 1466, 1474 (Fed. Cir. 1997) (“Like conception of the entire invention, a contribution to conception is a mental act which cannot be accurately verified without corroboration.”) (citing *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993); *Linkow v. Linkow*, 517 F.2d 1370, 1373 (CCPA 1975)).

40. Consequently, Dyax bears the burden of showing by clear and convincing evidence that its former employee, Dr. Ammar, should be named as an inventor on Merck Patent’s U.S. Patent No. 9,624,298.

41. “An inventor ‘may use the services, ideas, and aid of others in the process of perfecting his invention without losing his right to a patent.’” *Shatterproof Glass Corp. v. Libbey–Owens Ford*

Co., 758 F.2d 613, 624 (Fed. Cir. 1985) (quoting *Hobbs v. U.S. Atomic Energy Comm'n*, 451 F.2d 849, 864 (5th Cir. 1971)).

42. “Conception is the touchstone to determining inventorship.” *Fina Oil*, 123 F.3d at 1473 (citing *Sewall v. Walters*, 21 F.3d 411, 415 (Fed. Cir. 1994)).

43. “The case law thus indicates that to be a joint inventor, an individual must make a contribution to the conception of the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention.” *Fina Oil*, 123 F.3d at 1473.

44. “The basic exercise of the normal skill expected of one skilled in the art, without an inventive act, also does not make one a joint inventor.” *Id.* (citing *Sewall*, 21 F.3d at 416); *see also Am. Biosci., Inc.*, 333 F.3d at 1341 (“Much of FSU’s appeal brief is devoted to extolling Holton’s scientific accomplishments, the implication being that he must be an inventor of the three claimed compounds FSU’s arguments . . . fall short of meeting the clear and convincing evidence standard”); *Nartron Corp. v. Schukra U.S.A. Inc.*, 558 F.3d 1352, 1359 (Fed. Cir. 2009) (“Benson is not entitled to co-inventorship by simply posing the result to Nartron and leaving it to Nartron to figure out how to accomplish it.”).

45. While Dyax contends that ultimately it was Dr. Ammar’s choices that resulted in the F02 Fab and that Dr. Ammar “discovered the F02 Fab,” Finding of Fact 156, Dyax did not present any conclusive testimony detailing Dr. Ammar’s choices or inventive acts. *Id.* at 147–55. Dr. Ammar did not testify at trial, and Dyax’s expert witness was only able to testify as to entries in the Webphage database where Dr. Ammar contributed to PD-L1 activities in addition to, and sometimes alongside, other scientists and other Ares and Dyax representatives. *Id.* at 147–49, 152–55. The Dyax expert witness admitted that the Webphage database lacked complete information to determine the relevant activities and contributions of each scientist, and that those additional details would likely be found in laboratory notebooks that were not admitted as evidence. *Id.* at 150–51. The evidence at trial does not distinguish

which activities constituted the inventive acts for the F02 Fab, nor clearly establish that Dr. Ammar was the primary or sole contributor to those activities, much less that Dr. Ammar's contributions were "significant" when "measured against the dimension of the full invention." *Id.*; *Fina Oil*, 123 F.3d at 1473.

46. Dyax therefore did not meet its burden of proving by clear and convincing evidence at trial any conception or inventive act by Dr. Ammar that would make her an inventor of the subject matter of any of the claims of U.S. Patent No. 9,624,298.