No. 19-1964

UNITED STATES COURT OF APPEALS
FOR THE FIRST CIRCUIT

TIM KARTH,
Plaintiff-Appellant

ABRAHAM KISWANI; RICHARD J. ERICKSON; RICHARD B. KING, JR.; TERRELL JACKSON,

Plaintiffs,

v.

KERYX BIOPHARMACEUTICALS, INC., RON BENTSUR, SCOTT A. HOLMES, GREGORY P. MADISON, and JAMES OLIVIERO,
Defendants-Appellees

On Appeal from the
United States District Court, District of Massachusetts
No. 1:16-cv-11745-DJC
Honorable Denise J. Casper, Presiding

APPELLANT'S OPENING BRIEF

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PUBLIC VERSION

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Request for Oral Argument

Appellants respectfuly request oral argument. The legal and factual issues presented by this appeal are complex, and while the law is well-established, appellants nonetheless believe that oral argument would assist the Court.

Jurisdictional Statement

The District Court had subject-matter jurisdiction under 15 U.S.C. § 78aa and 28 U.S.C. § 1331. This Court has jurisdiction over this appeal under 28 U.S.C. § 1291.

This is an appeal from a final order or judgment that disposed of all parties' claims. Judgment was entered on September 23, 2019. Plaintiff-Appellant Tim Karth ("Lead Plaintiff") timely filed his Notice of Appeal on September 24, 2019.

Statement of Issues Presented for Review

1.

A public company's generic risk disclosure warned investors that a loss of revenue *could* occur, *if* the company's product suppliers failed to meet quality control or delivery requirements. Did this risk disclosure cure prior misstatements where, at the time the risk disclosure was made, the company knew that a sole-source supplier was already experiencing significant, repeated, and ongoing production and quality control problems, putting the company on the brink of a product-supply interruption?

2.

Did the district court err in holding that Lead Plaintiff had not established loss causation for a single-day 36% stock price drop on the announcement of a supply interruption because the company had previously issued the generic risk disclosure warning that a loss of revenue *could* occur, *if* the company's product suppliers failed to meet quality control or delivery requirements?

Statement of the Case

This securities class action concerns Defendants'[1] public disclosures about their sole pharmaceutical product, Auryxia. Auryxia is a synthetic compound sold by Keryx for the treatment of hyperphosphatemia in patients on dialysis with chronic kidney disease. JA00881, JA00889 ¶¶1, 27. Auryxia was the only compound Keryx had FDA approval to market. JA00889 ¶27. Keryx did not create the active pharmaceutical ingredient ("API") that made up Auryxia nor did it convert the API into a finished tablet form. Instead, Keryx relied entirely on third parties to create the API and then convert the API into a finished drug tablet. Throughout the Class Period, Keryx relied on a single third party, Norwich Pharmaceuticals, Inc. ("Norwich"), to convert the API into a finished tablet.[2] JA00881, JA00889 ¶¶1, 24. We refer to Norwich as the tablet *supplier* (*i.e.*, not the manufacturers that created the API itself).

On August 1, 2016, Keryx revealed that, due to manufacturing problems at Norwich, it would experience a supply interruption for Auryxia. JA00922 ¶115. The Company expected it would be unable to resume distribution of the

[1] The Defendants are Keryx Biopharmaceuticals, Inc. ("Keryx"), Ron Bentsur (Former CEO), Scott A. Holmes (Former CFO), Gregory P. Madison (Former CEO), and James F. Oliviero (Former CFO).
[2] Keryx engaged other third parties to create the API.

drug until October 2016. During a conference call that day, Keryx admitted that it had only one tablet supplier, Norwich, and acknowledged that Norwich had been "experiencing difficulties" in manufacturing Auryxia "[i]n [the] past few months." JA00924 ¶117. Keryx shares fell 36% on that day. JA00885 ¶8.

Procedural History

The First Amended Complaint ("FAC") alleged that Defendants misled investors, prior to the corrective disclosure in August 2016, by (1) suggesting that Keryx had multiple tablet suppliers while failing to disclose that Keryx was, in fact, reliant on a single tablet supplier; and (2) making false and misleading statements when, in February and April 2016, Defendants Holmes and Madison represented that the "fundamentals of Auryxia were solid" and that Keryx was standing by its aggressive 2016 sales forecasts for Auryxia.

By Order dated July 19, 2018, the district court denied in part and granted in part Defendants' motion to dismiss the FAC.[3] The district court agreed that a reasonable investor could have been misled by Defendants' disclosures that Keryx relied on multiple tablet suppliers when, in fact, it relied on only one tablet supplier. The court dismissed the claim that Holmes

[3] During the pendency of the briefing on the Rule 12(b)(6) motion to dismiss, plaintiff sought to file a Second Amended Complaint which the district court denied.

and Madison misled investors as to the "fundamentals of Auryxia" finding that the FAC did not adequately allege "that any of the Defendants" who made the statements at issue "were aware at the time of the production problems at Norwich." JA00120.

After the motion to dismiss was denied, Defendants and non-parties produced over 275,000 pages of documents in pre-trial discovery.

On February 27, 2019, Defendants moved for judgment on the pleadings, arguing that (1) earlier misstatements about Keryx's supply chain were cured by disclosures in February and April 2016—which Defendants had not raised in their prior Rule 12(b)(6) motion or their motion for reconsideration—that Keryx "depend[ed] on a single supply source for Auryxia drug product" and (2) Lead Plaintiff had not purchased his Keryx shares until after those new curative disclosures and so could not have relied on the previously upheld misstatements or show that they caused his losses. JA00201-03.

On April 30, 2019, Lead Plaintiff moved for class certification. Defendants opposed arguing, among other things, that Lead Plaintiff was inadequate/atypical because of the timing of his purchase. JA01759-60.

On April 30, 2019, Lead Plaintiff timely sought leave to file a proposed Third Amended Class Action Complaint ("TAC"). Relying on documents obtained in discovery, the TAC alleged that Keryx knew Norwich was experiencing significant and repeated production and quality control issues as early as 2014 (before commercial sales of Auryxia commenced) and that the quality and production problems had become significantly more acute by 2016. These issues, ultimately, led to the supply interruption revealed on August 1, 2016. The TAC identified a number of new false and misleading statements regarding these ongoing manufacturing issues and the impending supply interruption. JA00874-79.

Lead Plaintiff is Appealing the District Court's Order Granting the Motion for Judgment on the Pleadings, Denying the Motion for Class Certification, and Denying the Motion for Leave to Amend

The district court ruled simultaneously on Lead Plaintiff's motion to certify the class, his motion to file the TAC, and Defendants' motion for judgment on the pleadings (which was directed to the FAC). JA00848-70.

The district court first denied Plaintiff's motion for class certification, finding that because Plaintiff purchased his Keryx stock in July 2016—*i.e.*, after the allegedly curative disclosures in February and April that Keryx "depend[ed] on a single supply source for Auryxia drug product"—he did not have standing and there was no loss causation for the August 1, 2016 stock

drop. JA00862-63.[4] The district court reasoned that because an FDA regulation refers to "drug product" as a tablet manufacturer, full and complete disclosure was therefore made that Keryx contracted with only one tablet supplier. JA00860-61.

The district court then granted Defendants' motion for judgment on the pleadings for the same reason. JA00868-69.

Finally—in just three cursory paragraphs—the district court denied, as futile, Plaintiff's motion for leave to file the TAC. The district court recognized that the proposed TAC sought to "present new legal theories … with respect to disclosures of risks from manufacturing interruptions" but held that all of the newly identified misstatements were cured by the following risk disclosure found in a Form 10-Q filed by Keryx on April 28, 2016: "**[i]f** any of our suppliers, including the source of Auryxia drug product, **were** to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we **could** experience a loss of revenue, which **could** materially and adversely impact our results of operations." JA00870 (emphasis added). Because of this risk disclosure, the district court concluded that Lead Plaintiff, who purchased

[4] Allowing Lead Plaintiff to file the TAC would have mooted this problem.

his stock in July 2016, could not establish loss causation or reliance. JA00870.

New Facts and Theories Alleged in the TAC

As noted above, the TAC expanded the theory of the lawsuit—consistent with the documents produced during discovery—to allege that Norwich was experiencing quality control and manufacturing problems converting Auryxia's API into finished tablets as early as 2014, even before commercial sales of the drug commenced. Discovery revealed—and the TAC alleged—that Norwich was consistently encountering manufacturing problems and production stoppages that were not properly disclosed to investors. The TAC alleged specific and ongoing quality control and production problems at Norwich as follows:

In May/June 2014, Norwich experienced the first, of what would be many, Auryxia production stoppages. JA00894 ¶¶43-45. On July 31, 2014 Defendant Bentsur, Keryx's then-CEO, was informed via email that Norwich had been ordered to "STOP all the production of [Auryxia] IMMEDIATELY until further notice" because of manufacturing deviations. JA00894 ¶46. Keryx hired a company called Parexel International to audit and prepare a "Keryx-Norwich PAI Readiness Report" (the "2014 Parexel-Norwich Report"). JA00894 ¶47. The report, dated August 22, 2014, and sent to

Defendant Bentsur, identified serious problems with Norwich's ability to manufacture Auryxia and concluded that "there is no assurance that Norwich will be able to control the manufacturing process for [Auryxia] tablets, 210 mg Ferric Iron, to consistently produce acceptable drug product which meets all of its pre-determined specifications." JA00894-95 ¶47. The report found:

- the [Auryxia] tablet validation process is not in full compliance with the 2011 FDA Guidance for Industry;
- It has not been demonstrated that the [Norwich] manufacturing process will consistently produce product that meet final specifications;
- The design of these "validations" simply shows the successful production of a drug product using only a single set of fixed parameters – any variation of any one of these parameters places the process in an unknown and un-validated state. This type of validation design is atypical in the pharmaceutical industry.
    - "Quality cannot be adequately assured merely by in-process and finished-product inspection or testing"
    - "Each step of a manufacturing process is controlled to assure that the finished product meets all quality attributes including specifications"
    - "Focusing exclusively on qualification efforts without also understanding the manufacturing

> process associated with variations may not lead to adequate assurance of quality"[5]

In early September 2014, Keryx's senior director of CMC manufacturing summarized that "Norwich has formulated 19 drug substance batches—based on foreign contamination Keryx is *not able to manufacture drug product to support its launch.*" JA00898 ¶50. In late October 2014, Keryx used API that was created *before* the FDA validated Auryxia. As was noted internally, "using an unvalidated batch is not cGMP[6]" and "using un-validated material is a big risk." JA00899-900 ¶¶52-53. By the end of November 2014, just before commercial launch, Norwich again stopped production [redacted] JA00900 ¶56.

The TAC alleges that, on February 27, 2015, Keryx issued its year-end 2014 Form 10-K (the "2014 10-K") in which it informed investors that the failure to achieve an adequate starting supply of Auryxia would have a

[5] In a 2015 internal email exchange, Keryx executives discussed the issues identified by Parexel in 2014 with the conclusion being there was no desire or ability to remedy any of those issues. JA00907 ¶¶75-78.

[6] "cGMP" refers to the FDA's requirements for Good Manufacturing Practices.

negative impact on its business.[7] But it failed to disclose that Keryx did not, in fact, have an adequate starting supply due to quality issues creating Auryxia. JA00972-73 ¶188.

The TAC also alleges that, beginning with the publication of the 2014 10-K Keryx misrepresented the actual quality control and manufacturing risks it was facing regarding Auryxia. In each of its subsequent 10-Ks and 10-Qs,[8] Keryx purported to warn its investors of specific potential manufacturing risks in creating Auryxia without revealing that those hypothetical manufacturing problems were, in fact, already occurring. JA00972-83 ¶¶186-225. As

[7] The disclosure stated that "given the large quantity of materials required for Auryxia production and the large quantities of Auryxia that will be required for commercial success, the commercial viability of Auryxia will also depend on adequate supply of starting materials that meet quality, quantity and cost standards and the ability of our contract manufacturers to produce the API and finished drug product on a commercial scale. Failure to achieve this level of supply can jeopardize and prevent the successful commercialization of the product." JA00972 ¶187.

[8] Although there are slight variations in the actual risk warnings in each 10-K and 10-Q, the gist of the disclosures is the same: "*A lack of process control can lead to increased deviations during the manufacturing process, out of specification test results, batch rejection and the possible distribution of drug products that do not conform to predetermined specifications*. . . . These risks become more acute as we scale up for commercial quantities, where a reliable source of active pharmaceutical ingredient, or API, and a qualified contract manufacturer become critical to commercial success. . . . [I]ssues that may arise in our scale-up and technology transfer of Auryxia may lead to significant delays in our development and commercial timelines."

discussed, these quality control issues became more acute over time, but the risk disclosure never changed.

In April 2015, after Defendant Madison replaced Bentsur as Keryx's CEO, Norwich notified [redacted] JA00902-03 ¶67. In April 2015 Norwich again stopped production due to [redacted] found in the finished Auryxia tablets," which Keryx's VP of Regulatory Affairs and Quality confirmed "is considered 'major[.]'" JA00903 ¶69.

In May 2015, Parexel prepared a "Quality Management System Report" (the "May 2015 Parexel Quality Report"), which was performed at Keryx's request, and represented a "health check of the Quality Management System (QMS) in place at the company with a view toward the future." JA00903-04 ¶70. The Executive Summary to the Report found, among other things:

> 1. Keryx's Quality System is **incomplete in certain respects**. The system needs further definition and structure, and development of policies and procedures for all GMP governed tasks performed currently. . . .
>
> 2. Standard Operating Procedures (SOPs) are missing for several GMP governed operations now being conducted by

> Keryx, for example, analytical method development and transfer, drug product logistics, responsibilities of the Quality Unit, vendor selection and management, quality agreement development, and others.
>
> a. SOPs need to be put in place for all GMP governed operations currently being performed, where such procedures do not now exist.
>
> 3. There is no formally established training system.
>
> * * *
>
> 5. Keryx is not adequately prepared to host an FDA or other health regulatory authority inspection at either the New York or Boston location.

JA00904-05 ¶71 (emphasis added). Defendant Madison received a copy of this report no later than June 29, 2015 and discussed it at a meeting on June 30, 2015. JA00905 ¶72.

By September 2015, Keryx was working on adding additional tablet manufacturers and knew that there was **"a gap at Norwich** (see attached [Parexel-Norwich Report][9]) based on their equipment train but something that **shouldn't be an obstacle at the new sites.**" JA00908 ¶79 (emphasis added). Between September 2014 and September 2015 Norwich experienced ***ten***

[9] This is in reference to the 2014 Parexel-Norwich Report.

major/critical deviations, including four "major deviations," and six "critical deviations" where multiple batches were rejected. JA00908-09 ¶81.[10]

In an email entitled "Quality Update" Keryx executives reported [redacted] The update also states, "50 count packaging run on hold until investigation is completed. Manufacturing has been stopped until the OOS investigation is closed." JA00910 ¶82.

An internal Keryx presentation dated October 22, 2015 concluded that if the FDA inspected Keryx, the company was at risk: "the overall appearance

[10] Below, Defendants conceded that "[t]he TAC identifies various manufacturing problems during the period from September 2014 through October 2015. . . . Some of the problems halted production for a day or two, while others caused longer stoppages." JA01012.

would be to the FDA that we **do not have our process under control. It would appear as if we manufacture to have it fit our needs and choose lots that meet specification."** JA00910 ¶83 (emphasis added).

By October 2015, it was readily apparent that Keryx was unable to manufacture sufficient quantities of Auryxia to meet supply demand and create a hoped-for three-month safety stock. JA00913 ¶87. Then-Board Chairman Michael Tarnok wrote to Defendant Holmes, on October 3, 2015 that "I have always pushed for safety stock *due to my concerns about our ability to qualify and manage multiple contract manufacturers. This concern was validated* when the API and D[P] dating issues surprised us last year." JA00913 ¶87. Holmes' reaction was to eliminate the requirement of including a safety stock in preparing Auryxia supply forecasts. JA00913-14 ¶88.

Keryx's Board of Directors and senior executives, including Madison and Holmes, received a presentation regarding the stock market's impression of the Company in September 2015. They were told that investors were disappointed with Auryxia's initial launch. Cowen & Co. stated that while "the fundamentals of the Auryxia launch are improving, . . . the primary focus for [their] clients is the script count every Friday." Others indicated there was "no need to buy right now" as investors were "waiting for turn in prescription

trends." While others expressed the Company lacked credibility due to the poor drug launch. JA00915-16 ¶¶94-96. At the same meeting, Holmes, Keryx's CFO, informed the Board that by year-end 2016 Keryx would have less than one quarter of cash on the books and additional financing was needed. JA00916 ¶97.

At the December 2015 Board meeting, attended by Madison and Holmes, the Board was told that relying on a "single source for finished drug product," Norwich, was risky and the potential impact was a "supply disruption" and "loss of credibility with customers." The response to this "risk" was to adopt a goal of finding additional tablet suppliers, which was deemed a "High priority[11]." JA00917 ¶99.

Yet, in the 2015 Form 10-K, Keryx told its investors that it believed it had "established contract manufacturing relationships for the supply of Auryxia to ensure that we will have sufficient materials for clinical trials and ongoing commercial sales." JA00980 ¶213. Norwich was one of those contract manufacturers and the Company knew it needed more tablet suppliers to avoid the very problem that did occur.

[11] A new tablet supplier needed FDA approval; so, adding additional suppliers involved more than just contracting with another company.

On January 20, 2016 Keryx identified another production issue at Norwich, concluding it was Norwich – not the API manufacturers – that was likely responsible for the problems "mainly in the manufacturing of tablets." JA00917 ¶100. By February 16, 2016, Keryx noted continued production problems at Norwich, noting that due to, among other reasons, manufacturing delays and "batch release delays" a "supply issue" was developing that was "VERY CRITICAL" to Keryx. The issue remained unresolved. JA00917-18 ¶101.

Despite this, Keryx and Madison proclaimed that "the fundamentals of Auryxia are solid, and we plan to build on that foundation to advance our launch in the U.S." JA00988 ¶240. On a conference call with investors that day, Defendant Holmes reiterated that "[w]e are encouraged with the solid fundamentals we see with Auryxia." And, the 2015 10-K contained the risk disclosure, relied on by the court below, that "**if**" a contract manufacturer were to "limit" production, it "could" affect revenues – despite that Norwich was already limiting its production due to quality control issues that was limiting available quantities of Auryxia.

On March 23, 2016 Norwich informed Keryx that it had [redacted] in the API it had received and opened an investigation. The

following day, Norwich informed Keryx that it observed the same issue in a second lot of API. As a result, "Norwich has stopped production based upon this investigation." JA00919 ¶106.

This production stoppage at Norwich ultimately led to the supply interruption. As Keryx admitted to the FDA in a letter dated July 29, 2016, "manufacturing deviations at the Auryxia drug product manufacturing site [Norwich] **have constrained supply**. For example, between March 22 and May 27, 2016, Keryx managed two manufacturing deviations at the drug product manufacturer." JA00928 ¶126 (emphasis added).

By March 30, 2016, Keryx executives were aware that, based on the Norwich production stoppage, "[w]e have about 2 weeks of supply on hand as of this morning." JA00919 ¶107. By mid-April 2016, Defendants understood that if Norwich did not solve its production problem, Keryx would experience a supply interruption by mid-May 2016. JA00920 ¶¶ 108-09.[12] Holmes approved a forecast assuming all production issues would be promptly resolved. JA00920 ¶110.

[12] Below, Defendants conceded that the mid-April 2016 "forecast suggested that a customer supply interruption could occur in May 2016 if Norwich was unable to resolve the [redacted] issue." JA01015.

By April 27, 2016 Keryx identified yet additional production problems at Norwich. Keryx general counsel Brian Adams emailed Keryx's Henry Le to catch up and understand all the details because Adams had a "1-1 [meeting] with Greg [Madison] at 10:00" on April 27, 2016. JA00920 ¶111.

On April 28, 2016 Madison told investors that "[w]e're off to a good start and with all the pieces in place, we continue to execute. . . . We established solid fundamentals for Auryxia" and "[w]ith these fundamentals in place . . . we are confident in our ability to achieve our net sales guidance." JA00990-91 ¶245. That same day, Keryx filed the Form 10-Q on which the district court relied, which included the anodyne, generic risk disclosure that ""**[i]f** any of our suppliers, including the source of Auryxia drug product, **were to limit** or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we **could** experience a loss of revenue, which **could** materially and adversely impact our results of operations." JA00870 (emphasis added).

At the time of these statements, however, these were not hypotethicals. Norwich had limited its production due to the five-week production stoppage and Keryx actively managing supply levels. Keryx knew it the ongoing manufacturing problems were not corrected by Norwich, Keryx would run out

of Auryxia supply by mid-May 2016. JA00983, JA00991 ¶¶224, 246. Any additional production stoppages during this time period by Norwich – which had encountered numerous production stoppages in just under two years - would cause a supply interruption which it ultimately did.

It was misleading for Madison to tell investors that Keryx was "off to a good start," that "all the pieces" were in place and that the "fundamentals of Auryxia were solid."

The Corrective Disclosure

On the morning of August 1, 2016, Keryx issued a press release withdrawing its 2016 financial guidance and stating that it was halting the distribution of Auryxia until at least October 2016 due to a production-related issue at Norwich. The relevant portion of the press release stated:

> **About the Supply Interruption**
>
> Keryx has determined that a supply interruption is going to occur due to a production-related issue in converting API to finished drug product at its contract manufacturer. This issue has resulted in variable production yields of finished drug product and, as a result, the company has exhausted its reserve of finished drug product. At this time, current inventories of Auryxia are not sufficient to ensure uninterrupted patient access to this medicine. The supply interruption does not affect the safety profile of currently available Auryxia. Keryx is working with its existing manufacturer to resolve the production-related issue and rebuild adequate supply. In addition, since approval of Auryxia in 2014, Keryx has been working to bring a

> secondary manufacturer online to supply finished drug product. The company recently filed for approval of this manufacturer with the U.S. Food and Drug Administration (FDA) and the FDA has assigned a Prescription Drug User Fee Act (PDUFA) action date of November 13, 2016. The company expects to restore adequate supply of Auryxia and to make Auryxia available to patients during the fourth quarter of 2016.

JA00922-23 ¶115. During an investor conference call on the morning of August 1, 2016, Madison provided additional information about the supply interruption:

> Now, let me go into a bit more detail on some of the key areas of the supply interruption and steps we are taking to rebuild supply. We currently have a single source drug product contract manufacturer, or CMO. This manufacturer turns active ingredients, or API, of Auryxia into tablets, and **they have been successfully producing commercial batches for approximately two years**.
>
> ***In [the] past few months***, we began experiencing difficulties converting active pharmaceutical ingredients, or API, to finish[ed] drug product, which resulted in variable yields, as compared to our historical rate. We had been manag[ing] supply levels efficiently even with increased demand by our field team in the second quarter.

JA00924 ¶117 (emphasis added). Keryx's stock price fell 36% on August 1, 2016 from its closing price of $7.36 per share on Friday July 29, 2016 to $4.72 on August 1, 2016.

Madison subsequently sought to downplay the production problems at Norwich. At a September 13, 2016 investor conference, in attempting to

expain the supply interruption, he said that Norwich "*all of a sudden* began to have trouble converting" the API and up until that time "Norwich had been producing commercial product for us for almost two years *without any type of incident.*" JA00927-28 ¶125 (emphasis added).

Summary of the Argument

A single syllogism forms the basis of the district's decision to deny Lead Plaintiff's motion for class certification, grant Defendants' motion for judgment on the pleadings, and deny Lead Plaintiff's motion for leave to amend the complaint:

1. By April 2016, Keryx had disclosed that (1) "[w]e currently depend on a single supply source for Auryxia drug product" (the "Single Source Disclosure") and (2) "[i]f any of our suppliers, including the source of Auryxia drug product, were to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we could experience a loss of revenue, which could materially and adversely impact our results of operations." (the "Risk Disclosure"). JA00860, JA00870.
2. These two disclosures "remedied [any] alleged prior misrepresentations and/or omissions." JA00870.
3. Because Lead Plaintiff purchased in July 2016—after the "curative" disclosures—he could not have relied on any prior misstatements and the corrective disclosure in August 2016 could not have caused his losses. JA00870.

That syllogism is fatally flawed. Even if the Single Source Dislosure cured prior misstatements relating to Keryx's reliance on a single tablet supplier, the second curative disclosure (the "Risk Disclosure") was, itself, misleading and cannot have cured the myriad misstatements alleged in the TAC relating to manufacturing problems.

"A statement of risk does not insulate the speaker from liability, particularly where it is generic and formulaic." *Hill v. Gozani*, 638 F.3d 40, 60 (1st Cir. 2011) (cleaned up). To the contrary, this Circuit has emphatically affirmed that a (metaphorical) hiker commits fraud if he warns "his … companion to walk slowly because there might be a ditch ahead [knowing] with near certainty that the Grand Canyon lies one foot away." *Tutor Perini Corp. v. Banc of Am. Sec. LLC*, 842 F.3d 71, 90 (1st Cir. 2016); *see also Wilson v. Merrill Lynch & Co., Inc.*, 671 F.3d 120, 130 (2d Cir. 2011) ("[c]autionary words about future risk cannot insulate from liability the failure to disclose that the risk has transpired."); *Rubinstein v. Collins*, 20 F.3d 160, 171 (5th Cir. 1994) ("To warn that the untoward may occur when the event is contingent is prudent; to caution that it is only possible for the unfavorable event to happen when they have already occurred is deceit."). Here, the TAC described, in detail, that "Grand-Canyon scenario, where a defendant sees disaster looming on the horizon but opts to whitewash reality." *Tutor Perini*, 842 F.3d at 91 (cleaned up).

Specifically, as the district court noted, Keryx disclosed that "**[i]f** any of our suppliers, including the source of Auryxia drug product, **were to limit** or terminate production, or otherwise fail to meet the quality or delivery

requirements needed to supply Auryxia at levels to meet market demand, we **could** experience a loss of revenue, which **could** materially and adversely impact our results of operations." JA00870 (emphasis added). But Defendants knew that Norwich had, in fact, already "limit[ed] or terminat[ed]" production on multiple occasions due to serious manufacturing difficulties. JA00894-918 ¶¶43-48, 50-58, 61-101. And those production stoppages had already led to supply shortages at Keryx that had already "materially and adversely impact[ed]" its operations. *Id.* Ten days before the February 2016 10-K was filed, with this disclosure included, internal Keryx documents were describing the "supply issue" as "VERY CRITICAL." JA00917-18 ¶101. Less than a month before the April 2016 10-Q was filed, with this disclosure included, Norwich had completely stopped production and Keryx was down to just two weeks of supply. JA00919 ¶¶106-107.

By April 2016 disaster loomed on the horizon for Keryx but Defendants whitewashed reality. In essence, they warned of the possibility of a ditch up ahead when they knew the Grand Canyon was a few feet away.

The district court's erroneous conclusion that the Risk Disclosure cured all of the prior misstatements alleged in the TAC had a cascading effect that

led the district court to the wrong conclusion on each of the three motions it decided.

First, because the Risk Disclosure was not accurate or curative, the motion for leave to file the TAC was not futile; so, the district court erred in denying that motion. Similarly, because the Risk Disclosure was not accurate or curative, the timing of Lead Plaintiff's purchases did not make him inadequate/atypical; so, the district court erred denying his motion for class certification on that basis. Finally, because the district court should have given Lead Plaintiff leave to amend the complaint, Defendants' motion for judgment on the pleadings was moot; so, the district court erred in granting it.

The lower court decision should be reversed as the Risk Disclosure did not cure the prior misrepresentations and were, themselves, misleading. The case should be remanded for the district court to consider whether the TAC pleads valid claims for relief with instructions that the Risk Disclosures did not cure any potentially prior misleading statements and were misleading themselves.

If this Court, however, is to consider whether the TAC pleads valid claims for relief, it should find that it does.

Standard of Review

This Court reviews *de novo* a district court's denial of leave to amend on futility grounds. *D'Agostino v. ev3, Inc.*, 845 F.3d 1, 6 (1st Cir. 2016); *Glassman v. Computervision Corp.*, 90 F.3d 617, 623 (1st Cir. 1996) (same). Similarly, the Court "review[s] the district court's judgment on the pleadings *de novo*." *Rezende v. Ocwen Loan Servicing, LLC*, 869 F.3d 40, 42 (1st Cir. 2017). Finally, where, as here, a district court's denial of class certification is predicated on a pure error of law, review is *de novo*. *Tardiff v. Knox Cty.*, 365 F.3d 1, 4 (1st Cir. 2004).

Argument

I. Keryx's February and April 2016 Risk Disclosures Did Not Adequately Warn Investors That Its Single Source Supplier Was Limiting Its Production

A. Keryx's February and April 2016 Risk Disclosures Were Generic and Formulaic and Failed to Adequately Warn Investors of Known Specific Facts That Were Already Occurring

In February 2016, Keryx warned that "[i]f any of our suppliers were to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we could experience a loss of revenue, which could materially and adversely impact our results of operations." JA00291. In April 2016, Defendants repeated this warning but specifically added the language "including the source of Auryxia drug product" after the reference to "any of our suppliers." JA00321 (emphasis added).

The district court held that these two risk disclosures adequately informed investors of a potential upcoming supply interruption and of prior and on-going quality control and production problems at Norwich. Not so.[13]

[13] This risk disclosure did not appear in the "Item 1A. Risk Factors" portion of Keryx's SEC filings which discussed manufacturing risks. Instead, it appeared in a footnote to the financial statements under a section discussing "concentrations of credit risk."

"A statement of risk does not insulate the speaker from liability, particularly where it is generic and formulaic." *Tutor Perini Corp. v. Banc of America Securities LLC*, 842 F.3d 71, 91 (1st Cir. 2016) (internal citations and quotations omitted); *see also In re Harman Int'l Indus., Inc. Sec. Litig.*, 791 F.3d 90, 102 (D.C. Cir. 2015) ("The requirement for 'meaningful' cautions calls for substantive company-specific warnings based on a realistic description of the risks applicable to the particular circumstances.") (citation omitted); *Lormand v. U.S. Unwired, Inc.*, 565 F.3d 228, 245 (5th Cir. 2009) (cited with approval in *Tutor Perini*) ("[I]n not one instance did this generic language amount to 'substantive' company-specific warnings based on a realistic description of the risks applicable to the particular circumstances") (some internal quotations and citations omitted); *Slayton v. Am. Express Co.*, 604 F.3d 758 (2d Cir. 2010) ("Cautionary language must be extensive and specific. A vague or blanket (boilerplate) disclaimer which merely warns the reader that the investment has risks will ordinarily be inadequate to prevent misinformation. To suffice, the cautionary statements must be substantive and tailored to the specific future projections, estimates or opinions, in the [disclosure] which the plaintiffs challenge.") (quoting *Inst. Investors Grp. v. Avaya, Inc.*, 564 F.3d 242, 256 (3d Cir. 2009)).

The risk disclosure relied on here is generic and formulaic. Numerous other biopharmaceutical companies have the same, or very similar, risk disclosures underscoring the boilerplate nature of these disclosures.[14]

Keryx's February and April risk disclosure did not reveal any "company specific warning." By February 2016, when the first risk disclosure was made,

[14] *See, e.g.,* Immunomedics, Inc. (IMMU) 2018 10-K at 21 ("If we, or any of our collaboration partners, or our or their contract manufacturers, cannot successfully and efficiently manufacture the compounds that make up our products and product candidates, our ability, and the ability of our collaboration partners, to sell products and conduct clinical trials will be impaired."); Karyopharm Therapeutics, Inc. (KPTI) 2018 10-K at 80-81 ("We contract with third parties for the manufacture of our drug candidates for . . . commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our drug candidates or drugs or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts."); Intercept Pharmaceuticals, Inc. (ICPT) 2018 10-K at 49-50 ("We rely entirely on third parties for the manufacture of our product . . . Our business could be harmed if our third-party manufacturers fail to provide us with sufficient quantities of drug product, or fail to do so at acceptable quality levels or prices, or we lose our relationships with our third-party vendors and CROs and our clinical trial or product development efforts are delayed as a result."); Heron Therapeutics, Inc. (HRTX) 2018 10-K at 25 ("We depend on third-party suppliers and contract manufacturers to manufacture SUSTOL, CINVANTI and HTX-011, and we expect to do the same for any future products that we develop; if our contract manufacturers do not perform as expected, our business could suffer.") *See* AD 25 for additional, similar pharmaceutical industry risk disclosures. The Court may take judicial notice of the foregoing risk disclosures and those contained in the Addendum. The risk disclsoures are contained in the various companies' filings with the SEC, and are not being offerred for their truth. *See* Fed. R. Evid. 201(b)(2).

Keryx deemed finding another tablet supplier to be a high priority; Keryx was unable to manufacture enough Auryxia to create a safety stock, underscoring the manufacturing problems plaguing the drug; and Keryx had already documented scores of production failures and stoppages due to various manufacturing deficiencies. JA00894-918 ¶¶47, 50-53, 56-58, 67-89, 99-101.

By April 2016, Norwich was in the middle of a 5-week production stoppage, and supply levels of Auryxia were dangerously low, to the point where by mid-April 2016 Keryx determined that a supply interruption would occur by mid-May 2016 if Norwich did not resume production; Keryx was actively managing its supply levels in the hopes of avoiding a supply interruption during this time period and pinned its hopes of the resumption of production on a manufacturer that had struggled with quality control issues for almost two years; and, Keryx ultimately informed the FDA that the supply interruption that did occur, began with the problems starting in March 2016. JA00918-20, JA00926 ¶¶104-111, 126.

Keryx concealed from investors these known existing problems and stuck with its boilerplate, industry-standard, warnings of future risks without revealing any company specific issues. Indeed, the risk disclosures relied on

by the district court could apply to any company that relies on any third-party to supply it any product. For example, the same risk disclosure could apply to Apple and the risk that if a third-party does not "meet quality or delivery requirements" for the production and delivery for the glass on its iPhones or iPads, it "could experience a loss of revenue."

As this Court found in *Tutor Perini*, "'[a] statement that discloses a level of risk may be so understated as to be misleading.' . . . [A] defendant could be on the hook for downplaying a 'near-certain[]' risk,—a concept that calls to mind the Grand-Canyon scenario, where a defendant sees 'disaster looming on the horizon' but opts to whitewash reality." 842 F.3d at 91 (internal citations omitted).

In *Tutor Perini* plaintiff sued defendant BAS for failing to make accurate disclosures about impending problems in the student-loan auction rate market. BAS argued that "because it disclosed the possible risks of auction failure and support-bid withdrawal, it did not have to identify the degree of risk." 842 F.3d at 91. This Court disagreed, finding that "BAS knew (but elected not to disclose) that the ARS market teetered on the brink of collapse when it encouraged Tutor Perini to snatch up more ARS." *Id.* This Court emphatically rejected the contention that BAS had no obligation to disclose

impending problems in the ARS market until the ARS market actually collapsed, citing "the classic 'Grand Canyon' situation—*i.e.*, a situation where the broker-dealer makes risk disclosures that, given the market's state, are akin to a hiker 'warn[ing] his … companion to walk slowly because there might be a ditch ahead when he knows with near certainty that the Grand Canyon lies one foot away." *Id.* at 90 (quoting *In re Prudential Sec. Inc. Ltd. P'ships Litig.*, 930 F. Supp. 68, 72 (S.D.N.Y. 1996)).

The same is true here. By February 2016, Keryx knew Norwich had been experiencing production problems since 2014 and was specifically told that Norwich would be unable "to control the manufacturing process for [Auryxia] tablets, 210mg Ferric Iron, to consistently produce acceptable drug product which meets all of its pre-determined specifications." JA00894-95 ¶47.

By April 2016, Keryx could plainly see "disaster looming on the horizon." *Tutor Perini*, 842 F.3d at 91. At the end of March 2016, Norwich was in the midst of a 5-week production stoppage because of quality control issues, supply levels were dangerously low—with only a two-week supply as of early April—and Defendants knew that if full production did not resume within April, a supply interruption would occur by mid-May. JA00918-20 ¶¶104-111. In fact, Norwich continued to have manufacturing problems

throughout March, April, May, June and July of 2016 which directly led to the announced supply interruption. JA00921-22, JA00926 ¶¶112-14, 126.

Defendants' April 2016 addition of the parenthetical specifically referring to Norwich does not help them. To public investors, the addition was meaningless because it remained vague and forward-looking. But when read in conjunction with contemporaneous, non-public internal communications, the addition of the specific reference to Norwich shows a guilty conscience: Defendants knew there were already serious problems at Norwich, so they added a bland, generic risk disclosure that there might, in future, be problems at Norwich. They did nothing to adequately warn investors in April that manufacturing problems at Norwich were already occurring. Defendants concealed and misrepresented these known risks in both Keryx's 2015 Form 10-K and First Quarter 2016 10-Q.

B. The February and April 2016 Risk Disclosures Did Not Warn of Norwich's Prior and Ongoing Production Problems

As discussed above, to be effective, a risk disclosure must warn of company-specific problems. Here, neither the February nor April 2016 risk disclosures made *any* mention of *any* prior production problems involving Auryxia. In fact, at no time did Keryx ever disclose that it was experiencing or

had ever experienced *any* production related issues of any kind prior to the corrective disclosure on August 1, 2016.

This case is similar to *Berenson v. Applied Signal Technology, Inc.*, 527 F.3d 982 (9th Cir. 2008). There the company derived about 80% of its revenue from government agencies and if those agencies issue a "stop work order", the company was to immediately cease work on those contracts. Applied Signal received stop work orders but published its work order backlog which included revenue from the stop-work order contracts the company received. *Id.* at 984. Plaintiffs sued claiming the backlog numbers were misleading because the backlog included revenue from the contracts subject to the stop work order, and because stop work orders eventually lead to order cancellations, there was a heightened risk the company would never earn the revenue. *Id.* The district court dismissed, relying in part, on defendants' risk warning that "[o]ur backlog . . . consists of anticipated revenues from the *uncompleted portions of existing contracts* . . ." so, the court found Applied Signal adequately warned investors that the backlog could include uncompleted contracts. *Id.* at 985-86 (emphasis in original.) Defendants further argued that "[b]ecause a stop-work order doesn't actually cancel the contract, the contract continues to 'exist[ ]'; and because stopped work is perforce 'uncompleted,' it still counts as backlog,

even though Applied Signal may never get to complete it." *Id.* at 986. The Ninth Circuit reversed holding that the purported risk disclosure "speaks entirely of as-yet-unrealized risks and contingencies. Nothing alerts the reader that some of these risks may already have come to fruition, and that what the company refers to as backlog includes work that is substantially delayed and at serious risk of being cancelled altogether." *Id.*

The same can be said of Keryx's risk disclosures here, which spoke to "unrealized risks and contingencies": **if** Keryx's suppliers "fail to meet the quality or delivery requirements needed to supply Auryxia" Keryx **could** experience a loss of revenue. But these risk disclosures did not warn investors that Keryx's suppliers ***were already*** *struggling at the time* to meet demand, had in fact already limited production, and Keryx was **already** at serious risk of a supply interruption, rendering the risk disclosures themselves materially misleading.

C. The February and April 2016 Risk Disclosures Did Not Warn of a Potential Supply Interruption

Nor were the risk disclosures equivalent to the ultimate corrective disclosure. On August 1, 2016 Keryx informed investors that "due to a production-related issue in converting API to finished drug product" it would experience a "supply interruption." JA00922-23 ¶115. Neither the February

nor April 2016 risk warnings mention the possibility of a "supply interruption." They merely warn that "if" their drug product suppliers did not meet quality and delivery requirements, Keryx "could experience a loss of revenue."

This risk disclosure, fairly read, informed investors of the unremarkable proposition that if Keryx's suppliers did not make enough Auryxia, Keryx could not sell as much product, which could result in a revenue reduction.

Instead, the real risk facing Keryx was a "supply interruption" which for a pharmaceutical company is more significant than just reduced product supply to sell.[15] A supply interruption forces patients to look for other drugs to replace Auryxia and shakes physician's confidence in prescribing that drug. As J.P. Morgan's stock market analyst aptly noted "the supply hiccup is likely to have a significant impact on [Keryx's] commercial momentum . . ." JA00926 ¶122.

By April 2016, Keryx was facing more than just a generic risk that "if" a supplier did not perform, revenues might be affected. The April 2016 risk

[15] A supply interruption for a drug is more severe than just running out of widgets to sell. As stock market analyst Cowen & Co. opined "the interruption [is] detrimental to a new brand that is working to build confidence with health care professionals and patients alike." JA00926-27 ¶ 122.

disclosure failed to adequately warn investors of the actual risk facing Keryx at that time: a supply interruption which put both short-term and long-term sales at serious risk. Again, as this Court said in *Tutor Perini*, "'[a] statement that discloses a level of risk may be so understated as to be misleading'" and "a defendant could be on the hook for downplaying a 'near-certain' risk[.]" 842 F.3d at 91 (internal citations omitted).

Here, Keryx was careening toward the Grand Canyon, but instead merely warned its investors that there might be some ditches up ahead.

II. The TAC Adequately Pleads Loss Causation for the August 1, 2016 Drop Due to the Misrepresentations and Material Omissions Concerning the Ongoing Production Problems at Norwich

The district court found that Lead Plaintiff's "theory as to ongoing manufacturing issues at Norwich thus suffers the same infirmities with respect to loss causation and reliance as his theory as to the number of contract manufacturers and further amendment would be futile." JA00870. This finding was in error, as the TAC adequately pleads loss causation for the misrepresentations and material omissions concerning the manufacturing problems at Norwich.

In denying class certification, the district court found that Lead Plaintiff purchased his Keryx stock after Keryx cured its prior misrepresentations. The court found that because any prior misstatements had been cured by April

2016, the losses incurred in the August 2016 stock drop could not have been caused by the prior misstatements. The district court, however, erred in finding, as a matter of law, that there is no loss causation for the stock drop on August 1, 2016.

August 1, 2016 was the first time Keryx ever revealed that Norwich was, in fact, experiencing any manufacturing problems or even that any Keryx supplier was experiencing any manufacturing problems of any kind in creating Auryxia. In essence, the district court held that because Keryx disclosed that "**[i]f** any of our suppliers, including the source of Auryxia drug product, **were** to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we **could** experience a loss of revenue, which **could** materially and adversely impact our results of operations," the stock market was fully informed that Norwich was **in fact** experiencing manufacturing issues, so the drop on August 1, 2016 could not have been caused by this disclosure. JA00870 (emphasis added).

In *Mass. Ret. Sys. v. CVS Caremark Corp.*, 716 F.3d 229, 239 (1st Cir. 2013) this Court reversed the dismissal of a securities class action in similar circumstances. There, defendants argued that because CVS had previously

disclosed the loss of three large customers, the market already knew of these problems when CVS's stock dropped, so the drop could not have been caused by this information. In reversing, this Court found that plaintiffs alleged that "during the November 5 call, the market learned for the first time the real reason for the loss [of those customers]: the failed integration of CVS and Caremark. *That* information, not the loss of the contracts themselves, is the corrective disclosure at the heart of the [plaintiffs'] claims." *Id.* at 242 (emphasis added) (footnote omitted).

Here, the stock market learned *for the first time* that Norwich was experiencing production problems which is ultimately what led to the supply interruption. Neither the February nor April 2016 risk disclosures mention any production problems at Norwich, or that Keryx was—or had been—experiencing any production problems of any kind in manufacturing Auryxia. The production problems are what led to the supply interruption and the stock drop on August 1, 2016. It was error for the district court to find, as a matter of law, that loss causation was not adequately pled.

III. The TAC Adequately Pleads Securities Fraud Claims

Because the district court improperly concluded that Lead Plaintiff had not pled reliance or loss causation, it never considered whether the TAC

otherwise stated valid claims for relief. As we discuss, Lead Plaintiff did plead valid securities fraud claims in the TAC.[16]

A. Keryx Misled Investors as to the Ongoing Manufacturing Problems that Norwich Was Experiencing During 2015 and 2016

Keryx informed its investors of very specific issues that could affect the manufacturing process for Auryxia. Having undertaken to discuss a very specific topic, Keryx created a duty to make full disclosure about that topic and not omit material facts that rendered what it did say, misleading. *See In re Genzyme Corp. Sec. Litig.*, 754 F.3d 31, 41 (1st Cir. 2014) ("A duty to disclose information earlier omitted arises . . . when affirmative statements were made and the speaker 'fail[ed] to reveal those facts that are needed so that what was revealed would not be so incomplete as to mislead.'") (quoting *In re Boston Sci. Corp. Sec. Litig.*, 686 F.3d 21, 27 (1st Cir. 2012)) (alteration in original); *Roeder v. Alpha Indus., Inc.*, 814 F.2d 22, 26 (1st Cir. 1987) ("'[i]f ... a company chooses to reveal relevant, material information even though it had

[16] For a Rule 10b-5 claim, Plaintiffs must allege "(1) a material misrepresentation or omission by the defendant; (2) scienter; (3) a connection between the misrepresentation or omission and the purchase or sale of a security; (4) reliance upon the misrepresentation or omission; (5) economic loss; and (6) loss causation." *Matrixx Initiatives, Inc. v. Siracusano*, 563 U.S. 27, 37-38 (2011).

no duty to do so, it must disclose the whole truth.'") (quoting *Grossman v. Waste Mgmt., Inc.*, 589 F. Supp. 395, 409 (N.D. Ill. 1984)).

Here, Keryx informed investors in its 2014 10-K that "given the large quantity of materials required for Auryxia production and the large quantities of Auryxia that will be required for commercial success, the commercial viability of Auryxia will also depend on adequate supply of starting materials that meet quality, quantity and cost standards and the ability of our contract manufacturers to produce the API and finished drug product on a commercial scale. Failure to achieve this level of supply can jeopardize and prevent the successful commercialization of the product." JA00972 ¶187.

Yet, in 2014, prior to commercial launch, Keryx was already experiencing Auryxia shortages and did not have an adequate supply of starting materials.[17] By specifically discussing the required levels of Auryxia necessary to achieve commercial success, Keryx created a duty to disclose all material facts about its starting supply levels, but misled by omitting to

[17] Keryx informed Norwich in the fall of 2014: "[w]e are aware of the current API shortage . . ." and that "[w]ith the above noted shortage we realize that you will not be able to meet the short term requirements" and planned to "catch up" on the production needed in "the following months." JA00901 ¶¶57-58. Plus, Keryx used API produced before FDA validation because it would not have a sufficient supply of API, which violated FDA regulations. JA00899-900 ¶¶52-53.

disclose that Keryx was struggling to manufacture enough Auryxia to support its launch.

Plus, Auryxia's commercial kick-off was not a success. The Company, including Madison and Holmes, received specific feedback that investors viewed Auryxia's commercial launch as disappointing. JA00915-16 ¶¶94-98.

In its First Quarter 2015 Form 10-Q, and in each SEC filing thereafter, Keryx purported to warn its investors about **potential** manufacturing risks:

> Significant scale-up of manufacturing may result in unanticipated technical challenges and will require validation studies that are subject to FDA inspection. Scale-up/technology transfer activities can be complex, and insufficient process knowledge can result in a poorly scaled up process with inadequate process control. *A lack of process control can lead to increased deviations during the manufacturing process, out of specification test results, batch rejection and the possible distribution of drug products that do not conform to predetermined specifications*. . . . These risks become more acute as we scale up for commercial quantities, where a reliable source of active pharmaceutical ingredient, or API, and a qualified contract manufacturer become critical to commercial success. For example, given the large quantity of materials required for Auryxia production and the large quantities of Auryxia that will be required for commercial success, the commercial viability of Auryxia will also depend on adequate supply of starting materials that meet quality, quantity and cost standards and the ability of our contract manufacturers to produce the API and finished drug product on a commercial scale. Failure to achieve this level of supply can jeopardize and prevent the successful commercialization of the product. Moreover, issues that may arise in our scale-up and technology transfer

> of Auryxia may lead to significant delays in our development and commercial timelines.

JA00958-59, JA00974 ¶¶161, 193 (emphasis added).

Keryx purported to warn investors of specific problems that might occur in the manufacturing process—lack of process controls, out of specification test results and batch rejection. By choosing to refer to specific processes in the manufacture of its drug, Keryx undertook a duty to disclose information about those processes and could not withhold material information that would render its statements misleading.

Yet, the very manufacturing and process problems that Keryx purported to warn its investors **might** happen were **already** occurring.[18] By warning about

[18] Norwich was never able to convert sufficient API to provide Keryx with an adequate back-up supply of the tablets. JA00905-06, JA00908-14 ¶¶73-74, 81-89, 104-08. Keryx was specifically informed, in August 2014, that Norwich would likely "not be able to control the manufacturing process for" Auryxia; the Auryxia validation process was "not in full compliance" with FDA guidance; and the manufacturing process would likely not "consistently produce product the [met] final specifications." JA00894-96 ¶47. By October 2015 Keryx documented that [redacted] JA00909-10 ¶82. By October 2015, Keryx realized it could not achieve a three-month supply of safety stock of Auryxia due to manufacturing problems. JA00913-14 ¶¶87-88.

potential problems that might arise in the manufacturing process without informing investors that such problems were already occurring, Keryx misled investors into believing that all was fine with the manufacture of Auryxia, when it was not. *See, e.g., Godinez v. Alere, Inc.*, 272 F. Supp. 3d 201, 216-17 (D. Mass. 2017) (risk disclosure warning that "discovery of problems with a product" may result in a recall or withdrawal was misleading as the "statement does not make the market fully aware of the failure rate associated with" the product); *In re Snap Inc. Sec. Litig.*, No. 2:17-cv-03679-SVW-AGR, 2018 WL 2972528, at *6 (C.D. Cal. June 7, 2018), motion to certify appeal denied, No. 2:17-cv-03679-SVW-AGR, 2018 WL 3816764 (C.D. Cal. Aug. 8, 2018) ("hypothetical risk disclosures—*e.g.*, Instagram Stories 'may be directly competitive,' . . .—do not absolve Defendants of their duty to disclose known material adverse trends currently affecting Snap's user growth and" that Instagram stories were negatively affecting Snap); *In re Facebook, Inc. IPO Sec. and Deriv. Litig.*, 986 F. Supp. 2d 487, 516 (S.D.N.Y. 2013) ("a company's purported risk disclosures are misleading where the company warns only that a risk may impact its business when that risk has already materialized."); *In re Van der Moolen Holding N.V. Sec. Litig.*, 405 F. Supp. 2d 388, 400 (S.D.N.Y. 2005) ("Here it is alleged that at the time [defendant] was

warning investors about regulatory risk, it knew or was recklessly ignorant of the fact that [defendant's subsidiary's] employees were violating NYSE rules. Therefore, [defendant's] cautionary statements concerning the risks associated with the misconduct of its employees are actionable pursuant to Section 10(b).")[19]

Furthermore, Keryx's risk disclosures stayed remarkably similar throughout the class period. While Defendants were continuing to learn of repeated and ongoing manufacturing problems at Norwich, their warnings to investors remained remarkably consistent. This further supports that the

[19] The SEC recently sued Facebook for misrepresenting a risk as hypothetical when the facts had already occurred. In announcing the charges, Stephanie Avakian, Co-Director of the SEC's Enforcement Division, stated: "Public companies must accurately describe the material risks to their business, . . . As alleged in our complaint, Facebook presented the risk of misuse of user data as hypothetical when they knew user data had in fact been misused." Press Release, SEC, Facebook to Pay $100 Million for Misleading Investors About the Risks It Faced From Misuse of User Data (July, 24, 2019), https://www.sec.gov/news/press-release/2019-140. And Mylan N.V. agreed to pay a $30 million fine to the SEC because "Mylan's 2014 and 2015 risk factor disclosures that a governmental authority may take a contrary position on Mylan's Medicaid submissions, when CMS [Centers for Medicare and Medicaid Services] had already informed Mylan that EpiPen was misclassified, were misleading." Press Release, SEC, Mylan to Pay $30 Million for Disclosure and Accounting Failure Relating to EpiPen (Sept. 27, 2019), https://www.sec.gov/news/press-release/2019-194.

warnings were materially misleading. *See, e.g., Slayton v. Am. Express Co.*, 604 F.3d 758, 772-73 (2d Cir. 2010) ("The consistency of defendants' [cautionary] language over time despite the new information they received in early May 2001 belies any contention that the cautionary language was 'tailored to the specific future projection.'") (citation omitted); *Plymouth Cnty. Ret. Ass'n v. Advisory Bd. Co.*, 370 F. Supp. 3d 60, 93, n.21 (D.D.C. 2019) (Safe harbor not met when "'[c]ompany's cautionary statements remain unchanged' throughout the Class Period, 'despite a significant change in circumstances of material importance.'") (quoting *In re Harman Int'l Indus., Inc. Sec. Litig.*, 791 F.3d 90, 107 (D.C. Cir. 2015)).

B. Defendants Misled Investors that Keryx Had Sufficient Contract Manufacturers

In its 2015 10-K, Keryx represented that "[w]e believe that we have established contract manufacturing relationships for the supply of Auryxia to ensure that we will have sufficient material for clinical trials and ongoing commercial sales." JA00980 ¶213.

While this statement may be considered an opinion statement—"we believe,"—it is still actionable. In *Omnicare, Inc. v. Laborers Dist. Council Constr. Indus. Pension Fund*, 135 S.Ct. 1318 (2015), the Supreme Court held that opinion statements are actionable where a corporate disclosure omits to

disclose material facts necessary to make the statement not misleading. "[A] reasonable investor may, depending on the circumstances, understand an opinion statement to convey facts about how the speaker has formed the opinion—or, otherwise put, about the speaker's basis for holding that view. And if the real facts are otherwise, but not provided, the opinion statement will mislead its audience." *Id.* at 1328. As *Omnicare* explains:

> The Restatement of Torts, for example, recognizes that "[a] statement of opinion as to facts not disclosed and not otherwise known to the recipient may" in some circumstances reasonably "be interpreted by him as an implied statement" that the speaker "knows facts sufficient to justify him in forming" the opinion, or that he at least knows no facts "incompatible with [the] opinion." . . . "[I]t has been recognized very often that the expression of an opinion may carry with it an implied assertion, not only that the speaker knows no facts which would preclude such an opinion, but that he does know facts which justify it." . . . .
>
> . . . For that reason, literal accuracy is not enough: An [executive] must as well desist from misleading investors by saying one thing and holding back another. . . .
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> . . . .
>
> . . . The investor must identify particular (and material) facts going to the basis for the issuer's opinion—facts about the inquiry the [executive] did or did not conduct or the knowledge it did or did not have—whose omission makes the opinion statement at issue misleading to a reasonable person reading the statement fairly and in context.

Id. at 1330-32 (internal citations omitted).

Keryx's statement was materially misleading as, at the December 2015 Board meeting, Keryx's directors were informed that it was a "high priority" to secure additional tablet suppliers. JA00917 ¶99. The Board was informed that reliance on a "single source for finished product" could lead to a "supply disruption" and "loss of credibility with customers"—exactly what occurred. JA00917 ¶99.

Defendants therefore knew, or recklessly disregarded, that Keryx did not have enough contract manufacturers to ensure that it had sufficient quantities of Auryxia for ongoing sales and omitted to disclose the material fact that Keryx was working to secure another tablet supplier to avoid a supply interruption.

C. Defendants' Statements About the "Fundamentals of Auryxia" Were False Statements of Present Fact

On February 25, 2016 Keryx stated in its year-end press release that "[a]s we enter 2016, the fundamentals of Auryxia are solid[.]" JA00988¶240. On a conference call that same day Holmes reiterated that "[w]e are encouraged with the solid fundamentals we see with Auryxia[.]" JA00988 ¶241. On April 28, 2016 Madison stated on a conference call that "[w]e're off to a good start and with all the pieces in place, we continue to execute. . . ." and that "[w]e are pleased to report that the fundamentals of

Auryxia continue to remain strong . . . With these fundamentals in place . . . we are confident in our ability to achieve our net sales guidance." JA00990-91 ¶245.

These statements were false and materially misleading when made. As an initial matter, statements concerning the "fundamentals of Auryxia" are actionable statements of then-present fact. Representations are being made about the then status of Keryx's only drug product. There is no forward or future looking aspect to these statements.

These are also not opinion statements. In *Omnicare,* the Court distinguished a statement of opinion from one of fact:

> A company's CEO states: "The TVs we manufacture have the highest resolution available on the market." Or, alternatively, the CEO transforms that factual statement into one of opinion: "I *believe*" (or "I think") "the TVs we manufacture have the highest resolution available on the market." The first version would be an untrue statement of fact if a competitor had introduced a higher resolution TV a month before—even assuming the CEO had not yet learned of the new product. The CEO's assertion, after all, is not mere puffery, but a determinate, verifiable statement about her company's TVs; and the CEO, however innocently, got the facts wrong.

135 S.Ct. at 1326.

Since none of the statements about "the fundamentals of Auryxia being solid" are prefaced with any qualifiers "I believe" or "I think," they are not statements of opinion.

In context, a representation about Auryxia's "fundamentals" being solid was a false statement and omitted to disclose material facts necessary to make the statement not misleading. Auryxia is a synthetic compound and the ability to properly manufacture it, along with market acceptance, was critical to its success. A reasonable investor would therefore understand, that Auryxia's fundamentals related both to its efficacy and its ability to be created.

Plus, Madison and Holmes received investor feedback at a September 16, 2015 Board meeting. They were told that institutional investors were "[n]ot happy with launch trajectory; trying to understand why launch is going so slowly," and "Most [are] waiting for turn in prescription trends." JA00916 ¶96. Plus, they were told that the Company needed to "build credibility" with investors with increased sales. JA00915-16 ¶¶94-98.

Madison and Holmes both knew, or recklessly disregarded, that if they revealed production problems with Auryxia, or that the Company faced a possible supply interruption, given its history with investors, the news would

not be well-received. And, the Company needed to access public financing as Holmes informed the Board that Keryx "would end 2016 with less than one quarter of cash on the books," and the Board needed to explore all available options to secure additional financing. JA00916 ¶97. A one-product company with problems manufacturing that product would not be a highly attractive investment option.

By February 2016, Holmes and Madison both knew, but failed to reveal, that Norwich had been, and was continuing to have, difficulties producing Auryxia on a consistent basis. Norwich's production problems were causing a shortage in 50-count Auryxia sample bottles. By February 16, 2016 this "supply issue" that was "VERY CRITICAL" remained unresolved. JA00917-18 ¶101. Plus, Holmes eliminated forecasting using a back-up supply because Norwich could not consistently produce the tablets and Keryx could not achieve its forecasted inventory levels when it also required a back-up

supply.[20] Both knew of consistent and repeated production stoppages due to manufacturing deviations involving the API.[21] Both knew that Keryx had been unable to obtain FDA approval for another tablet manufacturer and Keryx's forecasts repeatedly assumed that new tablet suppliers would be FDA approved and would begin producing Auryxia by the summer of 2016.[22]

Madison also knew, before his statement in April 2016, that Norwich had stopped production in March and April 2016, and knew that achieving the 2016 sales forecast was dependent on Norwich solving the production issues. Indeed, Keryx itself admitted to the FDA that the production stoppage that began in March 2016 "constrained supply" of Auryxia. JA00928 ¶126. Thus,

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[20] Keryx's then-Chairman of the Board Michael Tarnok emailed Holmes on October 3, 2015 that he had "always pushed for safety stock due to my concerns about our ability to qualify and manage multiple contract manufacturers. This concern was validated when the API and [Drug Product] dating issues surprised us last year." JA00913 ¶87. Thereafter, Holmes and the Sales and Operations team "agreed upon to keep the safety stock out of the forecast and monitor the months of supply . . . to achieve the desired stock levels." JA00913 ¶88. Holmes clearly knew of Keryx's trouble producing adequate supplies of Auryxia.

[21] An internal Keryx analysis, dated October 22, 2015, which provided a "Summary of Commercial Manufacturing" concluded that "the overall appearance would be to the FDA that we do not have our process under control. It would appear as if we manufacture to have it fit our needs and choose lots that meet specification." JA00910-12 ¶¶83-85.

[22] By September 2015 Keryx was expecting new tablet suppliers Patheon and Halo to receive FDA approval so by June 2016 Norwich would produce 30% of the Auryxia tablets, Patheon 40% and Halo 30%. JA00914-15 ¶93.

by late April 2016 the only thing standing between Keryx and a supply interruption was the hope that Norwich, which had been consistently having troubles producing Auryxia, would solve all its problems and encounter no additional production or quality control issues.

Madison's representations that "we're off to a good start" and "with all the pieces in place, we continue to execute" (JA00990 ¶245) were materially misleading. Norwich was struggling to manufacture Auryxia at the time, supply levels were low and another production problem or stoppage would cause a supply interruption making these statements materially misleading. JA00991-92 ¶246.

By omitting to disclose the material facts concerning (a) the consistent production problems at Norwich, (b) the risk that if the production problems were not solved a supply interruption could occur and (c) supply itself was "constrained" as of March 2016, Defendants omitted material facts which rendered their statement that the "fundamentals of Auryxia were solid," we're "off to a good start," "all the pieces were in place" and that they "continued to execute" materially misleading.

D. A Strong Inference of Scienter Can Be Inferred

To plead scienter under the PSLRA, a complaint must "state with particularity facts giving rise to a strong inference that the defendant acted

with the required state of mind." 15 U.S.C. § 78-u4(b)(2)(A). "Scienter is a 'mental state embracing intent to deceive, manipulate or defraud.'" *City of Dearborn Heights Act 345 Police & Ret. Syst. v. Waters Corp.*, 632 F.3d 751, 757 (1st Cir. 2011) (quoting *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 193 n.12 (1976)). An inference of scienter is "strong" if "a reasonable person would deem [it] cogent and at least as compelling as any opposing inference one could draw from the alleged facts." *Tellabs, Inc. v. Makor Issues & Rights, Ltd.*, 551 U.S. 308, 324 (2007).

"When there are equally strong inferences for and against scienter, the draw is awarded to the plaintiff. Scienter should be evaluated with reference to the complaint as a whole rather than to piecemeal allegations. There is no set pattern of facts to establish scienter; it is a case-by-case inquiry." *Fire & Police Ass'n of Colorado v. Abiomed, Inc.,* 778 F.3d 228, 241 (1st Cir. 2015) (internal citations and quotations omitted).

"[T]he fact that the defendants published statements when they knew facts suggesting the statements were inaccurate or misleadingly incomplete is classic evidence of scienter." *Aldridge v. A.T. Cross Corp.,* 284 F.3d 72, 83 (1st Cir. 2002). Scienter will be established where "plaintiffs specifically cited reports and documents presented to defendants at relevant times that

were inconsistent with the defendants' public statements." *Serabian v. Amoskeag Bank Shares, Inc.*, 24 F.3d 357, 365 (1st Cir. 1994); *Boston Sci. Corp. Sec. Litig.*, 686 F.3d 21, 31 (1st Cir. 2012) (noting that Court has found scienter pled where complaints "contain[ed] clear allegations of . . . internal records . . . suggesting that at the time [defendants] made the statements . . . [they] were aware that they were withholding vital information[.]")

The TAC pleads numerous internal documents that show Defendants were aware of facts that suggest that their public statements were either untrue or they were withholding vital information.

Internal documents, pled in the TAC, showed that Keryx was unable to manufacture enough Auryxia to support its product launch, and that the launch was not well received by investors. The 2014 10-K, signed by Bentsur, purported to inform investors that an adequate supply of starting material was necessary for commercial success of Auryxia, but withheld the material information that, in fact, Keryx was unable to manufacture enough starting material.

Internal Keryx documents establish that it was having significant manufacturing problems creating Auryxia, including out of specification test results, rejected batches and a host of other manufacturing issues. JA00894-

914 ¶¶43-47, 50-53, 57-58, 64-89. When the Company's SEC filing referred to these potential manufacturing problems as hypotheticals, they were misleading as the specifically identified manufacturing issues were actually occurring. Madison and Holmes were aware of these issues. JA00989 ¶242.

In late 2015 the Board, Madison and Holmes were told that it was a high priority to find another tablet supplier. JA00917 ¶99. Yet, in the 2015 10-K, Keryx represented that it had enough contract manufacturers, including tablet suppliers, to meet demand and for commercial success. JA00980 ¶213. Madison and Holmes signed the 2015 10-K. JA00982 ¶221.

When Holmes called the "fundamentals of Auryxia solid," he did so knowing of the problems manufacturing the drug, including that not enough drug could be produced to even achieve Keryx's safety stock goal because of those problems. JA00913-14 ¶¶87-89. Holmes also knew that investors were taking a skeptical, wait-and-see, approach to Keryx, wanting to see actual sales results before investing. JA00915-16 ¶¶94-96. Knowing that Keryx needed additional financing or it would have about 90 days of operating cash by year-end 2016, Holmes knew, or recklessly disregarded, that anything other than positive statements about Auryxia would be negatively viewed by investors and hurt the stock price. JA00916 ¶97.

By late April 2016, when Madison said "we're off to a good start," "with all the pieces in place, we continue to execute" and that the "fundamentals were solid" to allow Keryx to achieve its 2016 sales forecasts, he did so knowing that Norwich was in the midst of a 5-week production stoppage, supply of Auryxia was constrained, Keryx was actively managing supply levels and if Norwich was unable to produce more product, a supply interruption would occur. JA00991-92 ¶246. Madison could see disaster looming on the horizon but chose to whitewash reality.

Like Holmes, Madison knew investors were looking for a sales turnaround from Keryx and if he informed investors of the possibility of a supply interruption, the stock price would likely crash. JA00915-16 ¶¶94-98. He and the Company clearly hoped to manage the Norwich production issue with the hope that it would not lead to a supply interruption and no one would be the wiser.

The Court can also infer that the individual Defendants were receiving regular oral updates about problems communicated to lower-level employees, given that this was a single drug company and the reports related to the most serious risk facing the company. *Nathenson v. Zonagen Inc.*, 267 F.3d 400, 425 (5th Cir. 2001) (inference of scienter strengthened where misstatements

related to product to which "[s]ubstantially all of the Company's efforts and expenditures" were directed).

With its extensive citation to contemporaneous documents and communications, a strong inference of scienter emerges from the TAC.

Conclusion

Appellant respectfully asks this case to be be remanded for the district court to consider whether the TAC pleads valid claims for relief, with instructions that the Risk Disclosures did not cure any potentially prior misleading statements, and were misleading themselves.

December 16, 2019

Respectfully submitted,

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Certificate of Service

I hereby certify that on the 30th day of December 2019, I filed this copy of Plaintiff-Appellant's Opening Brief with the Clerk of the Court, and served a copy on counsel for Defendants-Appellees via their counsel, Laurence Schoen, Mintz Levin, One Financial Center, Boston, MA 02111 via hand delivery.

/s/ Jeffrey C. Block
Jeffrey C. Block

Certificate of Compliance

This brief complies with the type-volume limitations of Federal Rules of Appellate Procedure 32(a)(7)(B) because it contains 12,336 words, as determined by the word-count function of Microsoft Word, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(f).

This brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type style requirements of Federal Rule of Appellate Procedure 32(a)(6) because it has been prepared using 14-point Century Supra T4 font using Microsoft Word.

/s/ Jeffrey C. Block
Jeffrey C. Block

Addendum

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

TIM KARTH, on behalf of himself and others similarly situated,	
Plaintiffs,	
v.	
	Civil Action No. 16-11745-DJC
KERYX BIOPHARMACEUTICALS, INC. et al.,	
Defendants.	

MEMORANDUM AND ORDER

CASPER, J. **September 23, 2019**

I. Introduction

Named Plaintiff Tim Karth ("Karth") has filed this putative class action against Defendants Keryx Biopharmaceuticals, Inc. ("Keryx"), and certain of Keryx's former and current executives and directors (the "Individual Defendants" and, together with Keryx, "Defendants") alleging violations of § 10(b) of the Exchange Act and Rule 10b-5 promulgated thereunder (Count I) and § 20(a) of the Exchange Act (Count II). Karth has moved for class certification. D. 112. Defendants have moved for judgment on the pleadings. D. 96. Karth has additionally moved for leave to file a third amended complaint. D. 115. For the reasons stated below, the Court DENIES Karth's motion for class certification, D. 112. The Court ALLOWS Defendants' motion for

judgment on the pleadings, D. 96. The Court DENIES Karth's motion for leave to amend the complaint, D. 115.

II. Standard of Review

A. Class Certification

A class action may be certified only if "(1) the class is so numerous that joinder of all members is impracticable; (2) there are questions of law or fact common to the class; (3) the claims or defenses of the representative parties are typical of the claims or defenses of the class; and (4) the representative parties will fairly and adequately protect the interests of the class." Fed R. Civ. P. 23(a); see In re New Motor Vehicles Canadian Export Antitrust Litig., 522 F.3d 6, 18 (1st Cir. 2008). Where, as here, Named Plaintiff has moved to certify a class under Fed. R. Civ. P. 23(b)(3), the Court must also determine whether "questions of law or fact common to class members predominate over any questions affecting only individual members, and that a class action is superior to other available methods for fairly and efficiently adjudicating the controversy." Fed R. Civ. P. 23(b)(3); see New Motor Vehicles, 522 F.3d at 18.

"[T]he district court must undertake a 'rigorous analysis' to determine whether plaintiffs me[e]t the four threshold requirements of Rule 23(a) (numerosity, commonality, typicality, and adequacy of representation) and Rule 23(b)(3)'s two additional prerequisites." In re Nexium Antitrust Litig., 777 F.3d 9, 17 (1st Cir. 2015) (quoting Comcast Corp. v. Behrand, 569 U.S. 27, 33 (2013)); see Smilow v. Sw. Bell Mobile Sys., 323 F.3d 32, 38 (1st Cir. 2003). The Named Plaintiff bears the burden of proving that class certification is justified. Makuc v. Am. Honda Motor Co., Inc., 835 F.2d 389, 394 (1st Cir. 1987). When "plaintiffs have made their initial showing, defendants have the burden of producing sufficient evidence to rebut the plaintiff's showing." Nexium, 777 F.3d at 27.

B. Judgment on the Pleadings

Rule 12(c) allows a party to move for judgment on the pleadings at any time "[a]fter the pleadings are closed—but early enough not to delay trial." Fed. R. Civ. P. 12(c). A motion for judgment on the pleadings pursuant to Fed. R. Civ. P. 12(c), is "ordinarily accorded much the same treatment" as a Rule 12(b)(6) motion. Aponte-Torres v. Univ. of P.R., 445 F.3d 50, 54 (1st Cir. 2006). To survive a motion for judgment on the pleadings, therefore, a plaintiff must plead "enough facts to state a claim to relief that is plausible on its face." Bell Atl. Corp. v. Twombly, 550 U.S. 544, 570 (2007). Because a motion for judgment on the pleadings "calls for an assessment of the merits of the case at an embryonic stage," the Court "view[s] the facts contained in the pleadings in the light most favorable to the nonmovant and draw[s] all reasonable inferences therefrom" in their favor. Pérez-Acevedo v. Rivero-Cubano, 520 F.3d 26, 29 (1st Cir. 2008) (citation omitted).

On a Rule 12(c) motion, unlike a Rule 12(b) motion, the Court considers the pleadings as a whole, including the answer. See Aponte-Torres, 445 F.3d at 54-55. Those assertions in the answer that have not been denied and do not conflict with the assertions in the complaint are taken as true. See Santiago v. Bloise, 741 F. Supp. 2d 357, 360 (D. Mass. 2010). In addition, "[t]he court may supplement the facts contained in the pleadings by considering documents fairly incorporated therein and facts susceptible to judicial notice." R.G. Fin. Corp. v. Vergara-Nuñez, 446 F.3d 178, 182 (1st Cir. 2006).

C. Leave to Amend

Fed. R. Civ. P. 15(a) "mandates that leave to amend is to be 'freely given when justice so requires' . . . unless the amendment 'would be futile, or reward, *inter alia*, undue or intended delay.'" Steir v. Girl Scouts of the USA, 383 F.3d 7, 12 (1st Cir. 2004) (quoting Fed. R. Civ. P.

15(a)(2) and Resolution Trust Corp. v. Gold, 30 F.3d 251, 253 (1st Cir. 1994)). Rule 15(a)'s "liberal amendment policy . . . does not mean that leave will be granted in all cases." Acosta-Mestre v. Hilton Int'l of P.R., 156 F.3d 49, 51 (1st Cir. 1998) (quoting 6 Charles Alan Wright, Arthur R. Miller & Mary Kay Kane, Federal Practice and Procedure § 1487, at 611 (2d ed. 1990)).

III. Factual Background

Keryx sells Auryxia, an FDA-approved drug for the treatment of patients with chronic kidney disease. D. 25 ¶¶ 1, 27. Auryxia is the only drug compound that Keryx has FDA approval to market. D. 25 ¶ 27. The manufacture of Auryxia is a two-step process; production of active pharmaceutical ingredient ("API") and the conversion of API into tablet form as Auryxia. D. 25 ¶¶ 33-34. The company engages a third-party manufacturer to convert the active ingredient in Auryxia into tablet form. D. 25 ¶ 1. It is undisputed that Norwich Pharmaceuticals, Inc. ("Norwich") was the only contract manufacturer approved by the FDA that Keryx engaged for this purpose during the relevant class period. D. 25 ¶ 1, 28, 34.

The Court will not recite all facts previously considered in deciding Defendants' motion to dismiss, see D. 50, but incorporates the entirety of same by reference here. The Court summarizes the timeline of relevant public disclosures, drawn from the operative, first amended complaint, D. 25, which remains the operative complaint,[1] as follows.

In March 2013, in its 10-K form, Keryx disclosed that it would initially rely on a single contract manufacturer to produce Auryxia and then would seek to engage additional contract manufacturers. D. 25 ¶¶ 33, 34. Plaintiffs do not dispute the accuracy of this particular disclosure.

[1] Since the Court considered Defendants' motion to dismiss the first amended complaint, D. 38, at the same time as it considered Karth's motion for leave to file a second amended complaint, D. 43, it considered the allegations in the first amended complaint as well as the allegations in the proposed second amended complaint, but denied that amendment finding such amendment futile. D. 50 at 11.

Id. On May 8, 2013, however, Keryx released a 10-Q form which stated that "[w]e rely on third parties to manufacture and analytically test our drug candidate. If these third parties do not successfully manufacture and test our drug candidate, our business will be harmed." D. 25 ¶ 35. The disclosure contained other references to "third parties" and "manufacturers," including the statement that "[o]ur ability to conduct clinical trials and commercialize our drug candidate will depend on the ability of such third parties" and "issues that may arise in our current transition to commercial batch sizes with our third party manufacturers [] can lead to delays." Id. This 10-Q form did not specifically indicate that Keryx did not, at the time, have contracts with multiple contract manufacturers. D. 25 ¶ 36.

Keryx made similar statements referencing multiple manufacturers or third parties in its August 2013 10-Q form, its November 2013 10-Q form, its January 2014 Final Prospectus Supplement, its March 2014 10-K form, its May 2014 10-Q form, its June 2014 presentation during the Goldman Sachs Global Healthcare Conference, its August 2014 10-Q form, its November 2014 10-Q form, its January 2015 Prospectus Supplement, its February 2015 10-K, its May 2015 10-Q form, its August 2015 10-Q form, its October 2015 10-Q form and its February 2016 10-K form. D. 25 ¶¶ 37-65, 69-72.

As alleged by Karth, Keryx's material misrepresentations and omissions regarding multiple contract manufacturers for conversion of API into Auryxia drug product was not corrected until August 1, 2016. See D. 25 ¶¶ 7, 10-11, 102. On August 1, 2016, Keryx released a press release indicating that it was halting the distribution of Auryxia until at least October 2016 due to a production issue with its contract manufacturer. D. 25 ¶ 80. In that press release, it also stated that it was withdrawing its 2016 financial guidance. Id. In an investor conference call the same day, Keryx acknowledged that it only had one contract manufacturer and stated that "[i]n [the]

past few months," it had been "experiencing difficulties" in the manufacturing process. D. 25 ¶ 81. Over the course of that day, August 1, 2016, the values of the shares of Keryx's stock fell by 36%. D. 25 ¶ 101.

Both to challenge class certification and to seek judgment on the pleadings, Defendants now rely upon Keryx's 2015 10-K, issued on February 26, 2016, and its 10-Q form, dated April 28, 2016, both of which state, in relevant part, "we currently depend on a single supply source for Auryxia drug product." D. 98-1 at 107, 176, D. 98-2 at 15, 52, 67. The April 28, 2016 10-Q also noted that "[i]f any of our suppliers, including the source of Auryxia drug product, were to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we could experience a loss of revenue, which could materially and adversely impact our results of operations." D. 98-2 at 15, 52, 67. Both of these public filings were referenced in the still operative first amended complaint, D. 25 ¶¶ 69, 72, 76, and are properly before the Court not only as to class certification but also as to Defendants motion for judgment on the pleadings, even as such statements apparently were not briefed or addressed by either side in connection with Defendants' motion to dismiss and the Court did not address same in its earlier decision regarding that motion. D. 97 at 6; see D. 39; D. 42; D. 44. As a result of these statements, Defendants allege that Karth, an investor who purchased stock after both such statements, is not an adequate class representative and that the claims of a class that span the period before and after these disclosures do not present typical claims under Fed. R. Civ. P. 23(a) and Defendants are entitled to judgment on the pleadings since Karth cannot satisfy at least two of the essential elements of securities fraud claims. D. 97 at 4-5.

The Court considers Defendants' arguments as to two bases of the securities fraud claims that survived the earlier motion to dismiss: 1) that it was a material misrepresentation or omission

to suggest that Keryx had more than one manufacturer to convert API into Auryxia drug product in public disclosures between May 8, 2013 and the "cure" of same on August 1, 2016, D. 50 at 9; and 2) the April 2, 2016 Preliminary Schedule 14A was materially misleading as to FDA approval of a second such contract manufacturer when Norwich remained the only such manufacturer for Auryxia drug product. D. 50 at 9-10.[2]

IV. Procedural History

On August 26, 2016, Plaintiffs initiated this lawsuit, D. 1. On February 27, 2017, Plaintiffs filed the first amended complaint, D. 25. On Defendants' motion to dismiss under Fed. R. Civ. P. 12(b)(6), the Court dismissed one of Karth's three claims relating to forward-looking statements but allowed the two other claims relating to alleged material misrepresentations and omissions as to multiple contract manufacturers for conversion of API into Auryxia tableted to proceed. D. 50 at 9-10. The Court also denied Karth's motion to amend his complaint for the second time. Id. at 11.

Karth has now moved for class certification, D. 112, and moved again to amend the complaint, D. 115. Defendants have moved for judgment on the pleadings. D. 96. The Court heard the parties on the pending motions and took the matters under advisement. D. 147.

V. Discussion

[2] The Court rejects Plaintiff's argument that the motion for judgment on the pleadings is merely an attempt by Defendants to get the Court to reconsider the motion to dismiss, which was denied in part. This motion is not only brought under Fed. R. Civ. P. 12(c), rather than R. 12(b)(6) which was the basis of the prior motion, but addresses a legal basis not previously addressed or resolved by the Court. See generally D. 50.

A. Class Certification

Karth has proposed the following class for certification as to both his claims: "all persons and entities who purchased or otherwise acquired Keryx securities between May 8, 2013, through August 1, 2016, inclusive. Excluded from the Class are Defendants, directors and officers of the Company, as well as their families and affiliates." D. 25 at 56. Karth must meet all the requirements under Rule 23(a) and under Rule 23(b)(1), (2) or (3) to prevail on his class certification motion. See Amchem Prods., Inc. v. Windsor, 521 U.S. 591, 614 (1997).

1. Ascertainability

Before addressing the Rule 23(a) and (b) analysis, the Court must determine "whether the scope of the class . . . is appropriate, *i.e.*, whether it is administratively feasible." Kent v. SunAmerica Life Ins. Co., 190 F.R.D. 271, 278 (D. Mass. 2000) (citing 7C Charles Alan Wright & Arthur R. Miller, Federal Practice and Procedure § 1760, 581 (2d ed. 1972)). A class must be determinable by "stable and objective factors" at the outset of a case, id.; not every class member must be identified, but the class must be sufficiently ascertainable to permit a court to "decide and declare who will receive notice, who will share in any recovery, and who will be bound by the judgment." Id. (citing Crosby v. Soc. Sec. Admin. of the U.S., 796 F.2d 576, 580 (1st Cir. 1986)). The definition for the proposed class here identifies members by their purchase of Keryx securities during a defined time period. The Court, therefore, concludes that Karth has provided objective criteria for defining the class and has satisfied his initial burden of showing ascertainability.

2. Rule 23(a) Requirements

a) Numerosity

The Court must now determine whether "the class is so numerous that joinder of all members is impracticable." Fed. R. Civ. P. 23(a)(1). "No minimum number of plaintiffs is required . . . but generally if the named plaintiff demonstrates that the potential number of

plaintiffs exceeds 40, the first prong of Rule 23(a) has been met." García-Rubiera v. Calderón, 570 F.3d 443, 460 (1st Cir. 2009) (quoting Stewart v. Abraham, 275 F.3d 220, 226-27 (3d Cir. 2001)); see In re Relafen Antitrust Litig., 218 F.R.D. 337, 342 (D. Mass. 2003). Karth contends, and Defendants do not dispute, that he has met his burden with respect to numerosity because during the proposed class period Keryx securities traded at such a high volume that the class necessarily includes at least hundreds of members. D. 113 at 5-6. The Court concludes that the putative class satisfies the numerosity requirement. See, e.g., In re Evergreen Ultra Short Opportunities Fund Sec. Litig., 275 F.R.D. 382, 388 (D. Mass. 2011) (noting that "[a]lthough the number of class members is still unknown, because there are millions of shares outstanding and were millions of transactions during the class period, the Court can reasonably infer that there are at least hundreds, if not thousands of class members").

b) Commonality

Karth also must demonstrate that "there are questions of law or fact common" to the class. Fed. R. Civ. P. 23(a)(2). Commonality is satisfied where the claims at issue depend upon a "common contention . . . of such a nature that it is capable of classwide resolution—which means that determination of its truth or falsity will resolve an issue that is central to the validity of each one of the claims in one stroke." Wal–Mart Stores, Inc. v. Dukes, 564 U.S. 338, 350 (2011). Karth asserts that the class shares common questions of law and fact, including whether Keryx violated federal securities laws through misrepresentation and/or omission of material facts and the scienter of the Individual Defendants. D. 113 at 6-7. Defendants either do not object to commonality or contend that the proposed class lacks commonality for the same reasons it cannot satisfy the predominance inquiry set forth in Rule 23(b)(3). See D. 133 at 7-17. However, the "predominance criterion is far more demanding . . . than the commonality requirement." New Motor Vehicles, 522 F.3d at 20 (quoting Amchem, 521 U.S. at 624). Here, the common questions among the class

overcome the commonality requirement's "low bar." New Motor Vehicles, 522 F.3d at 19. The Court concludes that Karth has established commonality as to the proposed class and addresses Defendants' concerns regarding the predominance of common issues or questions affecting individual members in its later analysis of the Rule 23(b)(3) factors.

c) Typicality and Adequacy

As to the typicality requirement, Karth also must show that "the claims or defenses of the representative parties are typical of the claims or defenses of the class." Fed. R. Civ. P. 23(a)(3). "The representative plaintiff satisfies the typicality requirement when its injuries arise from the same events or course of conduct as do the injuries of the class and when plaintiff's claims and those of the class are based on the same legal theory." In re Credit Suisse–AOL Sec. Litig., 253 F.R.D. 17, 23 (D. Mass. 2008) (citation omitted).

As to adequacy of the class representative, pursuant to Rule 23(a)(4), the Court considers whether "the representative parties will fairly and adequately protect the interests of the class." Fed. R. Civ. P. 23(a)(4). This factor requires Karth to establish an absence of potential conflict and an assurance of vigorous prosecution. See Andrews v. Bechtel Power Corp., 780 F.2d 124, 130 (1st Cir. 1985). The class representative must be part of the class, possess the same interest and suffer the same injury as class members. See Amchem, 521 U.S. at 625-26. "[P]erfect symmetry of interest is not required and not every discrepancy among the interests of class members renders a putative class action untenable." Matamoros v. Starbucks Corp., 699 F.3d 129, 138 (1st Cir. 2012). Rather, the inquiry "serves to uncover conflicts of interest between named parties and the class they seek to represent," Amchem, 521 U.S. at 625, and focuses on conflicts that are "fundamental to the suit and that go to the heart of the litigation," Matamoros, 699 F.3d at 138 (quoting 1 William B. Rubenstein, Newberg on Class Actions § 3:58 (5th ed. 2012)).

"[S]peculative conflict should be disregarded at the class certification stage." Natchitoches Parish Hosp. Serv. Dist. v. Tyco Int'l, Ltd., 247 F.R.D. 253, 265 (D. Mass. 2008) (citation omitted).

The Court considers these separate Rule 23(a) factors together because Defendants challenge Karth's adequacy as the class representative because, in part, his claims are not typical of the proposed class he seeks to represent. Karth contends that his claims are typical of the class because he, like all proposed class members, purchased Keryx shares within the proposed class period between May 8, 2013 and August 1, 2016 and seeks recovery for damages suffered as a result of the alleged inflation of the market price he paid for those shares by the allegedly materially false statements and omissions of material facts by Defendants. D. 113 at 7-8. Likewise, Karth says that his "interests are perfectly aligned with the remainder of the class." Id. at 8. Defendants argue that Karth is not a suitable representative of the class because he purchased Keryx shares on behalf of a trust in July 2016. Defendants maintain that Karth's status as representative of an allegedly defunct trust renders his claims susceptible to "unique defenses that would divert attention from the common claims of the class." Swack v. Credit Suisse First Bos., 230 F.R.D. 250, 260 (D. Mass. 2005). D. 133 at 18. Defendants further argue that the timing of Karth's purchase, in July 2016, renders him unsuitable because Defendants claim they disclosed Keryx's reliance on a single manufacturer in February and April 2016 thus putting Karth potentially at odds with those members of the putative class who purchased prior to the alleged February and April 2016 disclosures and/or removing him from the class entirely. Id.

(1) Karth's purchase of shares as a trustee does not make him an inadequate representative.

Defendants initially challenged Karth's standing to be a plaintiff at all here given Karth's own statement that the trust had been dissolved before the filing of the complaint. D. 133 at 24; D. 142 at ¶ 1. Further investigation by Karth, produced to Defendants, however, showed that the

trust was never dissolved. D. 142 at ¶ 3. The trustee argument thus appears to reflect an initial misunderstanding, now corrected, of the trust's status and, at most, harmless error in Karth's initial failure to identify himself as having purchased Keryx shares in his role as a trustee. See D. 141 at 31.

(2) Even assuming arguendo Karth would otherwise be an adequate representative for this class, he is not given the timing of his purchases and nature of his claims.

The timing of Karth's purchase, however, presents a problematic issue with respect to defining the class period because of the existence of the February and April 2016 disclosures. Karth characterizes the February and April 2016 disclosures as identical to the disclosures about "single source suppliers" the Court analyzed in connection with the motion to dismiss. D. 101 at 2-3, 5-7, 9-11. In deciding the motion to dismiss, however, the Court looked at the shift in disclosures from the March 2013 statement that there was a single contract manufacturer for Auryxia drug product to the later disclosures, from May 2013 through February 2016, which read, for instance, "some of the third parties we employ in the manufacturing process are single source providers," and held that the later in time disclosures were potentially misleading for their ambiguity as to the number of contract manufacturers Keryx was employing. See D. 50 at 8-9. The disclosures Defendants now have brought to the Court's attention are distinct from the disclosures analyzed in connection with the motion to dismiss because they are not ambiguous. The February and April 2016 disclosures, particularly the April disclosure, match the specificity of the March 2013 statement in that all three disclose the fact that Keryx utilized a single source for Auryxia drug product, *i.e.*, Auryxia tablets, as well as the attendant risks. In March 2013, Keryx wrote in its Form 10-K that ""[u]ntil such time [as it engages a back-up supplier] we expect that we will rely on a single contract manufacturer to produce [Auryxia]." D. 25 at ¶ 34. The two

public disclosures by Keryx in filings with the SEC in February and April of 2016 read, "[w]e currently depend on a single supply source for Auryxia drug product." D. 98-1 at 107, 176, D. 98-2 at 15, 52, 67. The April 2016 disclosure further stated, "[i]f any of our suppliers, including the source of Auryxia drug product, were to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we could experience a loss of revenue, which could materially and adversely impact our results of operations," D. 98-2 at 15, 52, 67, precisely the issue Karth points to as precipitating the drop in share price in August 2016.

Karth's argument that the February and April 2016 disclosures do no more than muddy the waters and "left investors to guess which disclosures were accurate" is, therefore, unavailing. D. 141 at 21. In its ruling on the motion to dismiss, the Court wrote that "a reasonable investor could have concluded . . . from the ambiguous language . . . regarding the number of contract manufacturers that Keryx had engaged multiple contract manufacturers to convert the API into tablets when in fact Keryx had not." D. 50 at 9. The February and April 2016 disclosures resolve the ambiguity that may have misled the market by stating there was a single supplier for Auryxia drug product. Additionally, they do so in the same forum, SEC filings, as the potentially misleading disclosures. Karth advances additional arguments that the specific language used in the February and April 2016 disclosures, specifically the terms drug product and drug substance, was not clear. "Drug product" is a term defined by the FDA as "[a] finished dosage form." See Gustavsen v. Alcon Labs., Inc., 903 F.3d 1, 13 (1st Cir. 2018) (citing 69 Fed. Reg. at 18,739); see also 21 C.F.R. § 314.3 (defining "drug product" as "a finished dosage form, e.g., tablet, capsule, or solution, that contains a drug substance, generally, but not necessarily, in association with one or more other ingredients"). It is undisputed that Auryxia tablets were the only "drug product," as

defined by the FDA, that Keryx manufactured (through its contract with Norwich) during the relevant time period. D. 25 at ¶ 1. At the hearing on the motions, counsel for Karth pointed to an email, referenced in the proposed amended complaint, D. 115-1 at ¶ 116, from a Keryx director, John Butler, in which Butler noted that "retail" investors may not know the difference between drug substance and drug product. D. 150 at 50-51. At this point, however, both parties have embraced the notion that Keryx shares trade in an "efficient market," i.e. a market that "is said to digest or impound news into the stock price in a matter of minutes." D. 97 at 10 (citing Erica P. John Fund, Inc. v. Haliburton Co., 309 F.R.D. 251, 269 (N.D. Tex. 2015)); D. 101 at 13 n. 1. This principle, known as the Basic presumption, states that "the market price of shares traded on well-developed markets reflects all publicly available information, and, hence, any material misrepresentations." Basic Inc. v. Levinson, 485 U.S. 224, 246 (1988). Whether the February and April 2016 disclosures were in footnotes or not is inapposite where parties do not dispute that such information was publicly disclosed or the timing of same. See D. 107 at 4-5.

As courts have noted, "[w]hether a particular announcement . . . actually cured a prior misrepresentation is, of course, a sensitive issue to rule on at this early stage of the proceedings, because it comes so close to assessing the ultimate merits in the case." In re Fed. Nat. Mortg. Ass'n Sec., Derivative & ""ERISA" Litig., 247 F.R.D. 32, 39 (D.D.C. 2008). In instances where there is "no substantial doubt as to the curative effect" of the later-in-time announcement, however, courts "will simply define the class period accordingly" without risk of improperly wading into the merits at the class certification stage. Id. As in Hayes v. MagnaChip Semiconductor Corp., No. 14-CV-01160-JST, 2016 WL 7406418, at *1 (N.D. Cal. Dec. 22, 2016) and Fed. Nat. Mortg. Ass'n Sec., this is not "a situation where the [subsequent] disclosure merely hinted at the existence of the problems and that the market barely reacted to a half-hearted disclosure." In re Fed. Nat.

Mortg. Ass'n Sec., 247 F.R.D. at 39. Instead, "there was nothing equivocal" about Keryx's April 28, 2016 disclosure that Keryx had a single manufacturer for its drug product. Id. A plausible class period can therefore extend no further than April 28, 2016.[3] See, e.g. Hayes, 2016 WL 7406418, at *8 (noting that "[a] number of district courts have declined to extend the class period in a securities case beyond the date of [curative] disclosures" and collecting cases).

Karth, who purchased shares in July 2016, therefore, purchased Keryx shares in a markedly different disclosure environment than other proposed class members who purchased shares as early as May 8, 2013. Such a different position is "fundamental to the suit" and "go[es] to the heart of the litigation," namely, Karth not being a member of a sustainable class. See, e.g., Basic, 485 U.S. at 248–49 (noting that "if, despite petitioners' allegedly fraudulent attempt to manipulate market price, news of the merger discussions credibly entered the market and dissipated the effects of the misstatements, those who traded . . . after the corrective statements would have no direct or indirect connection with the fraud"). This disparity creates a conflict between Karth and prospective class members, see Vargas v. Spirit Delivery & Distrib. Servs., 245 F. Supp. 3d 268, 288 (D. Mass. 2017), that threatens to "overbalance the common interests of the class members as a whole," Matamoros, 699 F.3d at 138. The Court, therefore, concludes Karth is not a suitable named plaintiff for reasons of atypicality and inadequacy.

After the voluntary dismissal by named plaintiff Abraham Kiswani in April 2019, D. 104, Karth has become the sole Named Plaintiff remaining in the case. Having found that the timing of Karth's purchase makes his claims atypical from those of a majority of proposed class members and removes his standing to bring the claims on behalf of the proposed class, see City of Bristol

[3] Even if a class period could be shortened to this "curative" date, it is not clear that securities fraud claims would survive for such a class given the issues of reliance and loss causation addressed below.

Pension Fund v. Vertex Pharm. Inc., 12 F. Supp. 3d 225, 235 (D. Mass. 2014) (noting "a plaintiff who purchased after a corrective disclosure was made would have no standing, because relying on the earlier misrepresentation would no longer be reasonable in light of the new information"), and thus that Karth is an inadequate class representative, the Court declines to certify the proposed class given the lack of a named plaintiff.[4] See 1 William B. Rubenstein, Newberg on Class Actions § 2:5 (5th ed. 2012) (noting that "[i]n a class action suit with multiple claims, at least one named class representative must have standing with respect to each claim").

Due to the Court's conclusion as to adequacy and typicality, the Court need not proceed to address the Rule 23(b)(3) requirements of predominance and superiority, but does so here in the interest of completeness.

3. Rule 23(b)(3) Superiority

A putative class seeking certification under Rule 23(b)(3) also bears the burden of showing that a class action "is superior to other available methods for fairly and efficiently adjudicating the controversy," Fed. R .Civ. P. 23(b)(3). Nexium, 777 F.3d at 18. The Court considers four factors within the superiority inquiry: 1) the individual interests in controlling the prosecution of separate actions; 2) any existing litigation already begun by class members; 3) the advantages or disadvantages of litigating the claims in the forum; and 4) any particular difficulties in managing the class action. Fed. R. Civ. P. 23(b)(3). The Court considers the alternatives to a class action, conscious that "[t]he policy at the very core of the class action mechanism is to overcome the problem that small recoveries do not provide the incentive for an individual to bring a solo action

[4] At the hearing on the motions, Karth's counsel agreed that if the February and April 2016 disclosures were curative, Karth "clearly . . . would have purchased after there's a cure of the information" and added that he was "not sure anybody would be able to bring a claim." D. 150 at 15.

prosecuting his or her rights." Amchem, 521 U.S. at 617 (quoting Mace v. Van Ru Credit Corp., 109 F.3d 338, 344 (1997)) (internal quotation marks omitted). The superiority inquiry thus ensures that litigation by class action will "achieve economies of time, effort, and expense, and promote . . . uniformity of decision as to persons similarly situated, without sacrificing procedural fairness or bringing about other undesirable results." Id. (quoting Advisory Committee's Notes on Fed. R. Civ. P. 23).

The first two factors weigh in favor of a class action given the lack of any record of particularized interest in directing the litigation from any individual and the lack of existing litigation concerning the same controversy. As to the latter two factors, the fact that Keryx is headquartered in Massachusetts is an advantage to this forum and there are no particular difficulties presented by the management of this class action. Defendants also do not challenge the superiority of a class action as a method of adjudicating the class claims here. A class action would be superior to litigation of individual claims by the multitudinous individual investors who purchased Keryx shares during the shortened class period.

4. Rule 23(b)(3) Predominance

Rule 23(b)(3) requires the Court to find that "the questions of law or fact common to class members predominate over any questions affecting only individual members." Fed. R. Civ. P. 23(b)(3). The focus of the predominance inquiry is "whether proposed classes are sufficiently cohesive to warrant adjudication by representation." Amchem, 521 U.S. at 623. When conducting a Rule 23(b)(3) analysis, the Court must determine whether there is "reason to think that [individualized] questions will overwhelm common ones and render class certification inappropriate." Halliburton Co. v. Erica P. John Fund Inc., 573 U.S. 258, 276 (2014). This requires a district court to "formulate some prediction as to how specific issues will play out in

order to determine whether common or individual issues predominate in a given case." Waste Mgmt. Holdings, Inc. v. Mowbray, 208 F.3d 288, 298 (1st Cir. 2000).

Given that the class definition for the full period through August 1, 2016 cannot be sustained, Defendants' arguments as to price impact and Plaintiff's damages model no longer apply with full force. It is not clear that the predominance factor could be met here, particularly as to the class presently proposed. Given the proposed class period—stock purchases from May 8, 2013 through August 1, 2016—which spans non-ambiguous public disclosures as to the single contract manufacturer for Auryxia drug product in February and April 2016, the Court cannot say that questions of law or fact common to this class predominate over any questions affecting individual members, particularly as to reliance and loss causation.

For all of these reasons, the Court DENIES the motion to certify the proposed class. Accordingly, what remains are Karth's individual claims against Defendants, which the Court turns to now.

B. Defendants' Motion for Judgment on the Pleadings

Thus the Court turns to Defendants' motion for judgment on the pleadings, D. 96, against Karth's individual claims against Defendants for violations of §10(b) of the Exchange Act and Rule 10b-5 against all Defendants and violations of §20(a) of the Exchange Act against the Individual Defendants. Both of Karth's claims to survive the Court's order on the motion to dismiss, D. 50, are premised on the same set of alleged facts, namely that: 1) Keryx, through material misrepresentations and/or omissions misled investors about the number of its third-party manufacturers of Auryxia drug product even though there was, at all relevant times to this matter, only one manufacturer of Auryxia tablets; and 2) when Keryx revealed that it only had a single manufacturer for Auryxia tablets in August of 2016 and that the single manufacturer was

experiencing issues that impacted the availability of Auryxia for sale, the market responded with a significant price drop in Keryx shares. The sole theory of liability to survive the earlier motion to dismiss ruling was that Keryx's statements from May 2013 forward may have misled investors as to how many drug product manufacturers were producing Auryxia tablets. D. 50 at 7-10. Defendants argue that the February and April 2016 disclosures break the link between the alleged misstatements to Karth and the drop in share price in August 2016, thereby robbing Karth's claims of the only alleged loss causation Plaintiff suffered as a result of the alleged misstatements and defeating the two remaining claims. Also, since only Karth's individual claims remain with no class having been certified, Karth's claims also fail because he has not plausibly alleged material reliance upon misrepresentations and/or omissions. D. 97 at 10.

As the Court stated in its ruling on Defendants' motion to dismiss, D. 50, to state a claim under Section 10(b) and Rule 10b-5, Plaintiffs must plead "(1) a material misrepresentation or omission by the defendant; (2) scienter; (3) a connection between the misrepresentation or omission and the purchase or sale of a security; (4) reliance upon the misrepresentation or omission; (5) economic loss; and (6) loss causation." Amgen Inc. v. Connecticut Ret. Plans & Tr. Funds, 568 U.S. 455, 460–61 (2013) (citation omitted). "To establish a material misrepresentation or omission, [the plaintiff] must show 'that defendants made a materially false or misleading statement or omitted to state a material fact necessary to make a statement not misleading.'" Ganem v. InVivo Therapeutics Holdings Corp., 845 F.3d 447, 454 (1st Cir. 2017) (quoting Geffon v. Micrion Corp., 249 F.3d 29, 34 (1st Cir. 2001)). "[W]hether a statement is 'misleading' depends on the perspective of a reasonable investor." Omnicare, Inc. v. Laborers Dist. Council Const. Indus. Pension Fund, 135 S. Ct. 1318, 1327 (2015). The allegations in the complaint must also meet the "heightened pleading requirements" imposed on private securities litigation. Miss. Pub.

Emples. Ret. Sys. v. Bos. Sci. Corp., 523 F.3d 75, 85 (1st Cir. 2008). "[W]hen alleging that a defendant made a material misrepresentation or omission, a complaint must 'specify each statement alleged to have been misleading [and] the reason or reasons why the statement is misleading.'" Id. (quoting 15 U.S.C. § 78u–4(b)(1)). The heightened pleading standard in the context of the element of scienter requires that the complaint "plead facts giving rise to a strong inference of scienter." Id. at 86.

Karth contends that Defendants' arguments amount to a "truth on the market defense," for which they have failed to meet their burden. D. 101 at 8-10, 11-14. A truth on the market defense, as explained by Karth, "requires a defendant to establish that the allegedly misrepresented information was already fully reflected in the market so that the stock price already reflected the misrepresented facts." D. 101 at 11. A truth on the market defense posits that despite any alleged misrepresentation the market already knows the truth of the matter. See, e.g., In re Credit Suisse-AOL Sec. Litig., 465 F. Supp. 2d 34, 51 (D. Mass. 2006). In raising this defense, a party rebuts the allegation that the alleged misrepresentations were material by providing evidence that the market did not "believe" the alleged misrepresentation due to other available information, usually from a third party. See, e.g., In re Apple Computer Sec. Litig., 886 F.2d 1109, 1115 (9th Cir. 1989) (finding that press scrutiny and disbelief of positive statements was sufficient to form basis of truth on the market defense). The fact that the corrective information usually comes from a third party is why the "degree of intensity and credibility sufficient to counter-balance effectively any misleading information" is an important part of the truth on the market analysis. See In re Credit Suisse-AOL, 465 F. Supp. at 51. Here, the issue is not the ability of the new information to counterbalance the misleading information, but non-ambiguous language that breaks the causal link between allegedly misleading information as to multiple contract manufacturers and reliance

on same and resulting loss causation when such misrepresentation was allegedly cured on August 1, 2016. That is, the newly presented disclosures do not render the disclosures the Court analyzed on the motion to dismiss immaterial; rather, they bring to light a lack of a necessary causal link between the earlier misstatements prior to February 2016 and any claimed economic loss by Karth. Such missing link is fatal to Karth's claims. See, e.g., Miller Inv. Tr. v. Morgan Stanley & Co., LLC, 308 F. Supp. 3d 411, 449 (D. Mass. 2018) (dismissing securities fraud claim because plaintiff "has not adequately pled loss causation"); In re Polaroid Corp. Sec. Litig., 134 F. Supp. 2d 176, 189 (D. Mass. 2001) (dismissing securities fraud claims because "the Complaint fails to allege adequate loss causation").

As previously stated, Karth must show a material misrepresentation or omission, scienter, a connection between the misrepresentation or omission and the purchase of a security, reliance upon the misrepresentation or omission, economic loss and loss causation. Amgen, 568 U.S. at 460-461. Both of Karth's remaining claims rely on the premise that once the market learned in August 2016 that Keryx had a single manufacturer of Auryxia tablets along with the attendant increased risk of a failure to "meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand," the market reacted with a sharp drop in Keryx's share price. The disclosure to the market of those key facts nearly six months prior to the subsequent market reaction breaks the causal chain for purposes of Karth's fraud on the market theory. Cf. Dura Pharm., Inc. v. Broudo, 544 U.S. 336, 342-347 (2005) (holding plaintiff alleging securities fraud must show causal link between alleged fraud and economic loss occurring at time of sale of securities to survive motion to dismiss). Karth is similarly unable to plausibly allege reliance because his July 2016 purchase of Keryx shares came after the curative disclosures in February and April 2016. See City of Bristol, 12 F. Supp. 3d at 235 (noting "a plaintiff who purchased after

a corrective disclosure was made would have no standing, because relying on the earlier misrepresentation would no longer be reasonable in light of the new information").

Moreover, it would be futile to amend as to loss causation or reliance where there has been no suggestion that there was any stock drop after either earlier disclosure, but only later on August 1, 2016. See D. 107 at 6. Accordingly, the Court grants judgment to Defendants on both counts.

C. Karth's Motion to Amend the Complaint

A party may amend a complaint with the court's leave, which the court "should freely give" when "justice so requires." Fed. R. Civ. P. Rule 15(a)(2). Leave to amend may be "denied for several reasons, including undue delay, bad faith, dilatory motive of the requesting party, repeated failure to cure deficiencies, and futility of amendment." Hagerty ex rel. United States v. Cyberonics, Inc., 844 F.3d 26, 34 (1st Cir. 2016) (citation omitted). The court denies the motion for leave to amend on futility grounds.

First, the alleged amendment does not cure the deficiencies as to loss causation and reliance as to the lone remaining plaintiff, Karth. As Karth notes in his motion for leave to amend, the proposed amended complaint "still concerns the same general subject matter of the operative complaint" and "[t]he alleged corrective disclosure [on August 1, 2016] has not changed." D. 115 at 5. The new alleged facts in the proposed amended complaint merely bolster Karth's claims as to Keryx's misrepresentations and omissions surrounding the number of contract manufacturers for Auryxia drug product. See D. 115-1 at ¶¶ 99, 230, 239.

Second, to the extent that Karth seeks to present new legal theories, specifically with respect to disclosures of risks from manufacturing interruptions, see D. 115 at 3; D. 115-1 at ¶¶ 43-47, 50-53, 56-58, 67-69, 81-86, 100-101, 104-108, 11-114, it would be futile to amend because the April 2016 disclosure functions as a curative disclosure for that theory as well. The April 28,

2016 10-Q noted that "[i]f any of our suppliers, including the source of Auryxia drug product, were to limit or terminate production, or otherwise fail to meet the quality or delivery requirements needed to supply Auryxia at levels to meet market demand, we could experience a loss of revenue, which could materially and adversely impact our results of operations." D. 98-2 at 15, 52, 67. The warned-of risk of supply interruption, and resulting adverse impact on revenue, was realized in late July 2016 leading to the stock price drop in August 2016, but the February and April 2016 disclosures had already remedied the alleged prior misrepresentations and/or omissions. Karth's theory as to ongoing manufacturing issues at Norwich thus suffers the same infirmities with respect to loss causation and reliance as his theory as to the number of contract manufacturers and further amendment would be futile.

VI. Conclusion

For the foregoing reasons, the Court DENIES Karth's motion for class certification, D. 112, and dismisses all class claims against Defendants. The Court ALLOWS Defendants' motion for judgment on the pleadings, D. 96, and dismisses Karth's remaining individual claims against Defendants. The Court DENIES Karth's motion for leave to amend the complaint, D. 115.

So Ordered.

/s/ Denise J. Casper
United States District Judge

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

TIM KARTH
Plaintiff(s)

v. CIVIL ACTION NO. **16-11745-DJC**

KERYX BIOPHARMACEUTICALS, INC., ET AL
Defendant(s)

JUDGMENT IN A CIVIL CASE

CASPER, D.J.

☐ **Jury Verdict.** This action came before the court for a trial by jury. The issues have been tried and the jury has rendered its verdict.

X **Decision by the Court**. In accordance with the Memorandum and Order dated September 23, 2019, D. 152;

IT IS ORDERED AND ADJUDGED

Judgment for the defendants.

Robert M. Farrell, Clerk

Dated: September 23, 2019

/s/ Lisa M. Hourihan
(By) Deputy Clerk

NOTE: The post judgment interest rate effective this date is ____%.

(judgciv.frm - 10/96) [jgm.]

Abeona Therapeutics Inc. 2018 Annual Report (Form 10-K) (March 18, 2019) at 32-33

Risks related to our reliance on third-parties

We expect to rely on third parties to conduct some or all aspects of our viral vector production, drug product manufacturing, research and preclinical and clinical testing, and these third parties may not perform satisfactorily.

We do not expect to independently conduct all aspects of our viral vector production, drug product manufacturing and distribution, research and preclinical and clinical testing. We currently rely, and expect to continue to rely, on third parties with respect to these items. In some cases, these third parties are academic, research or similar institutions that may not apply the same quality control protocols utilized in certain commercial settings.

Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibility to ensure compliance with all required regulations and study protocols. For example, for product candidates that we develop and commercialize on our own, we will remain responsible for ensuring that each of our IND-enabling studies and clinical studies are conducted in accordance with the study plan and protocols, and that our viral vectors and drug products are manufactured in accordance with GMP as applied in the relevant jurisdictions.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines, conduct our studies in accordance with regulatory requirements or our stated study plans and protocols, or manufacture our viral vectors and drug products in accordance with GMP, we will not be able to complete, or may be delayed in completing, the preclinical and clinical studies and manufacturing process validation activities required to support future IND, MAA and BLA submissions and approval of our product candidates.

Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it could delay our product development activities.

Any of these events could lead to clinical study delays or failure to obtain regulatory approval or impact our ability to successfully commercialize future products. Some of these events could be the basis for FDA action, including injunction, recall, seizure or total or partial suspension of production.

Aerie Pharmaceuticals, Inc. 2018 Annual Report (Form 10-K) (March 1, 2019) at 47-48

Risks Related to Manufacturing

We currently have limited manufacturing capacity and anticipate continued reliance on third-party manufacturers for the development and commercialization of Rhopressa®, Rocklatan™ and any future product candidates in accordance with manufacturing regulations until we have completely developed our internal manufacturing capabilities, if at all.

We do not currently operate manufacturing facilities for clinical or commercial production of Rhopressa®, Rocklatan™ and any future product candidates, other than AR-13503 and AR-1105. We currently lack the resources and the capabilities to manufacture Rhopressa®, Rocklatan™ and any future product candidates, other than AR-13503 and AR-1105, on a clinical or commercial scale.

With respect to the commercial production of Rhopressa®, we currently are outsourcing the production of the API and final drug product until such a time when we can develop internal manufacturing capabilities, if at all. We have entered into a contractual relationship for drug product manufacturing for the commercialization of Rhopressa®, and we are working to establish an additional contractual relationship for the commercial production of Rhopressa®. This process is difficult and time consuming and we can give no assurance that we will enter any future commercial supply agreements with any additional manufacturers on favorable terms or at all.

To the extent we terminate our existing supplier arrangements in the future and seek to enter into arrangements with alternative suppliers, we might experience a delay in our ability to obtain our clinical or commercial supplies.

Our current manufacturing capability is limited to the production of the clinical product supply necessary for Aerie's two lead development programs focused on retinal diseases for the preclinical sustained-release implants AR-13503 and AR-1105. We commenced operation of our cGMP-validated manufacturing facility for production of ophthalmic implants using the proprietary PRINT. technology platform in the fourth quarter of 2018. This facility is currently only being used to support clinical trials of AR-13503 and AR-1105 implants. This facility is not being used to produce commercial or clinical supply of Rhopressa® or Rocklatan™.

In January 2017, we commenced establishment of our own manufacturing plant in Athlone, Ireland. This will be our first manufacturing plant, which is expected to produce commercial supplies of Rhopressa® and, if approved, Rocklatan™, Rhokiinsa® and Roclanda™. We expect that commercial supply from the plant will be available in early 2020. However, there can be no assurance that we will be able to develop the manufacturing capabilities required to produce our final drug product on a commercial scale or in accordance with manufacturing regulations. See "*—We have no experience developing manufacturing facilities or manufacturing Rhopressa® or Rocklatan™ and we cannot assure you that we will be able to develop our manufacturing plant or manufacture Rhopressa® or Rocklatan™ in compliance with regulations at a cost or in quantities*

necessary to make them commercially viable." If our manufacturing operations fail to achieve regulatory approval or to effectively produce commercial supplies of Rhopressa® or Rocklatan™ or any future product candidates, if approved, or until such time we are capable of developing internal manufacturing capabilities, we will be required to rely solely on third-party manufacturers to meet our commercial manufacturing needs, which may materially adversely affect our business, results of operations or financial condition.

Reliance on third-party manufacturers entails risks, including:

- manufacturing delays if our third-party manufacturers give greater priority to the supply of other products over Rhopressa® or Rocklatan™ or any future product candidates, if approved, or otherwise do not satisfactorily perform according to the terms of their agreements with us;
- delays in obtaining regulatory approval for Rhopressa® outside the United States or for Rocklatan™ or any future product candidates, if our third-party manufacturers fail to satisfy or comply with regulatory requirements;
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us;
- the possible breach of the manufacturing agreement by the third party;
- product loss due to contamination, equipment failure or improper installation or operation of equipment or operator error;
- the failure of the third-party manufacturer to comply with applicable regulatory requirements; and
- the possible misappropriation of our proprietary information, including our trade secrets and know-how.

For example, in October 2016, we were required to withdraw the initial submission of our NDA for Rhopressa® due to a contract manufacturer of our drug product not being prepared for pre-approval inspection by the FDA. We resubmitted the Rhopressa® NDA in February 2017 upon receiving confirmation from the contract manufacturer that it was prepared for FDA inspection and the Rhopressa® NDA was subsequently approved in December 2017.

In addition, our manufacturers may not perform as agreed or may not remain in the contract manufacturing business. In the event of a natural disaster, business failure, strike or other difficulty, we may be unable to replace a third-party manufacturer in a timely manner and the production of Rhopressa®, Rocklatan™ or any future product candidates could be interrupted, resulting in delays and additional costs. We may also have to incur other charges and expenses for products that fail to meet specifications and undertake remediation efforts.

Cerecor Inc. 2018 Annual Report (Form 10-K) (March 18, 2019) at 40

We use third parties to manufacture all of our product candidates. This may increase the risk that we will not have sufficient quantities of our product candidates to conduct our clinical trials or such quantities at an acceptable cost, which could result in the delay, prevention, or impairment of clinical development and commercialization of our product candidates.

We do not own or operate, and have no plans to establish, any manufacturing facilities for our product candidates. We have limited personnel with experience in drug manufacturing and we lack the resources and the capabilities to manufacture any of our product candidates on a clinical or commercial scale.

We currently outsource all manufacturing of our product candidates to third parties typically without any guarantee that there will be sufficient supplies to fulfill our requirements or that we may obtain such supplies on acceptable terms. Any delays in obtaining adequate supplies with respect to our product candidates may delay the development or commercialization of our other product candidates.

In addition, we do not currently have any agreements with third-party manufacturers for the long-term commercial supply of our product candidates. We may be unable to enter agreements for commercial supply with third-party manufacturers, or may be unable to do so on acceptable terms. Even if we enter into these agreements, the various manufacturers of each product candidate will likely be single source suppliers to us for a significant period of time.

The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit our NDA to the FDA. While we are ultimately responsible for the manufacture of our product candidates, other than through our contractual arrangements, we do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the regulatory requirements, known as GMP requirements, for manufacture of both active drug substances and finished drug products for clinical supply and eventually for commercial supply, if we receive regulatory approval. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, we will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. Failure of our contract manufacturers to comply with the applicable regulatory requirements may also subject us to regulatory enforcement actions. In addition, other than through our contractual agreements, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain marketing approval for or market our product candidates, if approved.

Eiger BioPharmaceuticals, Inc. 2018 Annual Report (Form 10-K) (March 14, 2019) at 43-44

We rely and expect to continue to rely on third parties to manufacture our clinical product supplies, and if those third parties fail to obtain approval of government regulators, fail to provide us with sufficient quantities of drug product, or fail to do so at acceptable quality levels or prices our product candidates could be stopped, delayed, or made less profitable.

We do not currently have nor do we plan to acquire the infrastructure or capability internally to manufacture our clinical supplies for use in the conduct of our clinical trials, and we lack the resources and the capability to manufacture any of our product candidates on a clinical or commercial scale. We currently rely on outside vendors to source raw materials and manufacture our clinical supplies of our product candidates and plan to continue relying on third parties to manufacture our product candidates on a commercial scale, if approved.

The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit our marketing applications to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturing partners for compliance with the regulatory requirements, known as cGMPs, for manufacture of our product candidates. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

We do not yet have sufficient information to reliably estimate the cost of the commercial manufacturing of our product candidates, and the actual cost to manufacture our product candidates could materially and adversely affect the commercial viability of our product candidates. As a result, we may never be able to develop a commercially viable product.

In addition, our reliance on third-party manufacturers exposes us to the following additional risks:

- We may be unable to identify manufacturers on acceptable terms or at all;
- Our third-party manufacturers might be unable to timely formulate and manufacture our product or produce the quantity and quality required to meet our clinical and commercial needs, if any;

- Contract manufacturers may not be able to execute our manufacturing procedures appropriately;
- Our future contract manufacturers may not perform as agreed or may not remain in the contract manufacturing business for the time required to supply our clinical trials or to successfully produce, store and distribute our products;
- Manufacturers are subject to ongoing periodic unannounced inspection by the FDA and corresponding state agencies to ensure strict compliance with cGMP and other government regulations and corresponding foreign standards. We do not have control over third-party manufacturers' compliance with these regulations and standards;
- We may not own, or may have to share, the intellectual property rights to any improvements made by our third-party manufacturers in the manufacturing process for our product candidates; and
- Our third-party manufacturers could breach or terminate their agreement with us.

Each of these risks could delay our clinical trials, the approval, if any of our product candidates by the FDA or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenue. In addition, we rely on third parties to perform release testing on our product candidates prior to delivery to patients. If these tests are not conducted appropriately and test data is not reliable, patients could be put at risk of serious harm and could result in product liability suits.

The manufacturing of medical products is complex and requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of biologic products often encounter difficulties in production, particularly in scaling up and validating initial production and absence of contamination. These problems include difficulties with production costs and yields, quality control, including stability of the product, quality assurance testing, operator error, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. Furthermore, if contaminants are discovered in our supply of our product candidates or in the manufacturing facilities, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination. We cannot assure you that any stability or other issues relating to the manufacture of our product candidates will not occur in the future. Additionally, our manufacturers may experience manufacturing difficulties due to resource constraints or as a result of labor disputes or unstable political environments. If our manufacturers were to encounter any of these difficulties, or otherwise fail to comply with their contractual obligations, our ability to provide our product candidates to patients in clinical trials would be jeopardized. Any delay or interruption in the supply of clinical trial supplies could delay the completion of clinical trials, increase the costs associated with maintaining clinical trial programs and, depending upon the period of delay, require us to commence new clinical trials at additional expense or terminate clinical trials completely.

Esperion Therapeutics, Inc. 2018 Annual Report (Form 10-K) (February 28, 2019) at 69-70

We rely completely on third-party suppliers to manufacture our clinical drug supplies for the bempedoic acid / ezetimibe combination tablet and bempedoic acid, and we intend to rely on third parties to produce commercial supplies of the bempedoic acid / ezetimibe combination tablet and bempedoic acid and preclinical, clinical and commercial supplies of any future product candidate.

We do not currently have, nor do we plan to acquire, the infrastructure or capability to internally manufacture our clinical drug supply of the bempedoic acid / ezetimibe combination tablet and bempedoic acid, or any future product candidates, for use in the conduct of our preclinical studies and clinical studies, and we lack the internal resources and the capability to manufacture any product candidates on a clinical or commercial scale. In addition, we have no control over the production of ezetimibe for the bempedoic acid / ezetimibe combination tablet. The facilities used by our contract manufacturers to manufacture the active pharmaceutical ingredient and final drug for bempedoic acid, or any future product candidates, must be approved by the FDA and other comparable foreign regulatory agencies pursuant to inspections that would be conducted after submission of our NDA or relevant foreign regulatory submission to the applicable regulatory agency.

We do not control the manufacturing process of, and are completely dependent on, our contract manufacturers to comply with current Good Manufacturing Practices for manufacture of both active drug substances and finished drug products. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or applicable foreign regulatory agencies, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no direct control over our contract manufacturers' ability to maintain adequate quality control, quality assurance and qualified personnel. Furthermore, all of our contract manufacturers are engaged with other companies to supply and/or manufacture materials or products for such companies, which exposes our manufacturers to regulatory risks for the production of such materials and products. As a result, failure to satisfy the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our contract manufacturers' facilities generally. If the FDA or a comparable foreign regulatory agency does not approve these facilities for the manufacture of our product candidates or if it withdraws its approval in the future, we may need to find alternative manufacturing facilities, which would adversely impact our ability to develop, obtain regulatory approval for or market our product candidates.

Heron Therapeutics, Inc. 2018 Annual Report (Form 10-K) (February 22, 2019) at 24-25

If our suppliers and contract manufacturers are unable to manufacture in commercially viable quantities, we could face delays in our ability to commercialize SUSTOL, CINVANTI or any other products we may develop, our costs will increase and our product sales may be severely hindered.

If in the future any of our product candidates are approved for commercial sale, we will need to be able to consistently manufacture our products in larger quantities and be able to show equivalency to the FDA in the manufacture of our products at commercial scale as compared to development batch size. The commercial success of our products will be dependent on the ability of our contract manufacturers to produce a product in commercial quantities at competitive costs of manufacture in a process that is validated by the FDA. We have scaled-up manufacturing for SUSTOL and CINVANTI in order to realize important economies of scale, and these activities took time to implement, required additional capital investment, process development and validation studies and regulatory approval. We are in the process of scaling up manufacturing for HTX-011. We cannot guarantee that we will be successful in achieving competitive manufacturing costs through such scaled-up activities.

The manufacture of pharmaceutical products is a highly complex process in which a variety of difficulties may arise from time to time, including product loss due to material failure, equipment failure, vendor error, operator error, labor shortages, inability to obtain material, equipment or transportation, physical or electronic security breaches and natural disasters. Problems with manufacturing processes could result in product defects or manufacturing failures, which could require us to delay shipment of products or recall products previously shipped, or could impair our ability to expand into new markets or supply products in existing markets. We may not be able to resolve any such problems in a timely manner, if at all.

We depend on third-party suppliers and contract manufacturers to manufacture SUSTOL, CINVANTI and HTX-011, and we expect to do the same for any future products that we develop; if our contract manufacturers do not perform as expected, our business could suffer.

We do not own or operate manufacturing facilities for the production of commercial or clinical quantities of any product, including SUSTOL, CINVANTI and HTX-011. Our ability to successfully commercialize SUSTOL, CINVANTI and HTX-011, as well as any other products or product candidates that we may develop, depends in part on our ability to arrange for and rely on other parties to manufacture our products at a competitive cost, in accordance with regulatory requirements, and in sufficient quantities for clinical testing and eventual commercialization. We currently rely on a small number of third-party manufacturers to produce compounds used in our product development activities and expect to continue to do so to meet the preclinical and clinical requirements of our potential products and for all of our commercial needs. Certain contract manufacturers are, at the present time (and are expected to be for the foreseeable future), our sole resource to manufacture certain key components of SUSTOL, CINVANTI and HTX-011, as well as key components for product candidates in clinical and

preclinical testing in our research and development program. Although we entered into long-term commercial manufacturing agreements for the manufacture of SUSTOL, CINVANTI and HTX-011, and we have a long-term agreement for the manufacture of our Biochronomer Technology, we might not be able to successfully negotiate long-term agreements with any additional third parties, or we might not receive all required regulatory approvals to utilize such third parties, and, accordingly, we might not be able to reduce or remove our dependence on a single supplier for the commercial manufacturing of SUSTOL, CINVANTI and HTX-011, or any other product we may develop for marketing. We may have difficulties with these manufacturer relationships, and we may not be able to find replacement contract manufacturers on satisfactory terms or on a timely basis. Also, due to regulatory and technical requirements, we may have limited ability to shift production to a different third-party should the need arise. We cannot be certain that we could reach agreement on reasonable terms, if at all, with such a manufacturer. Even if we were to reach agreement, the transition of the manufacturing process to a different third-party could take a significant amount of time and money, and may not be successful.

Further, we, along with our contract manufacturers, are required to comply with FDA and foreign regulatory requirements related to product testing, quality assurance, manufacturing and documentation. Our contract manufacturers may not be able to comply with the applicable FDA or foreign regulatory requirements. They may be required to pass an FDA preapproval inspection for conformity with cGMP before we can obtain approval to manufacture our products and will be subject to ongoing, periodic, unannounced inspection by the FDA and corresponding state agencies to ensure strict compliance with cGMP, and other applicable government regulations and corresponding foreign standards. If we and our contract manufacturers fail to achieve and maintain high manufacturing standards in compliance with cGMP, or fail to scale-up manufacturing processes in a timely manner, we may experience manufacturing errors resulting in defective products that could be harmful to patients, product recalls or withdrawals, delays or interruptions of production or failures in product testing or delivery, delay or prevention of filing or approval of marketing applications for our products, cost overruns or other problems that could seriously harm our business. Not complying with FDA or foreign regulatory requirements could result in an enforcement action, such as a product recall, or prevent commercialization of our product candidates and delay our business development activities. In addition, such failure could be the basis for the FDA or foreign regulators to issue a warning or untitled letter or take other regulatory or legal action, including recall or seizure, total or partial suspension of production, suspension of ongoing clinical trials, refusal to approve pending applications or supplemental applications, and potentially civil and/or criminal penalties depending on the matter.

SUSTOL, CINVANTI, HTX-011 or any of our other product candidates may be in competition with other products for access to the facilities of third parties. Consequently, SUSTOL, CINVANTI, HTX-011 or any of our other product candidates may be subject to manufacturing delays if our contractors give other companies' products greater priority than our products. For this and other reasons, our third-party contract manufacturers may not be able to manufacture SUSTOL, CINVANTI, HTX-011 or any of our other product candidates in a cost-effective or timely manner. If not manufactured in a timely manner, the clinical development of

any of our product candidates or their submission for regulatory approval could be delayed, and our ability to deliver products to market on a timely basis could be impaired. This could increase our costs, cause us to lose revenue or market share and damage our reputation.
Immunomedics, Inc. 2018 Annual Report (Form 10-K) (August 23, 2018) at 21

If we, or any of our collaboration partners, or our or their contract manufacturers, cannot successfully and efficiently manufacture the compounds that make up our products and product candidates, our ability, and the ability of our collaboration partners, to sell products and conduct clinical trials will be impaired.

Our ability to conduct our preclinical and clinical research and development programs depends, in large part, upon our ability to manufacture our proprietary compounds in accordance with the FDA and other regulatory requirements. We have limited historical experience in manufacturing these compounds in significant quantities, and we may not be able to do so in the quantities required to commercialize these products. Any interruption in manufacturing at this site, whether by natural acts or otherwise, could significantly and adversely affect our operations, and delay our research and development programs.

We and our collaboration partners also depend on third parties to provide certain raw materials, and contract manufacturing and processing services. All manufacturers of biopharmaceutical products must comply with current Good Manufacturing Practice regulations or cGMPs, required by the FDA and other regulatory agencies. Such regulations address, among other matters, controls in manufacturing processes, quality control and quality assurance requirements and the maintenance of proper records and documentation. The FDA and other regulatory agencies routinely inspect manufacturing facilities, including in connection with the review of a BLA. The FDA generally will issue a notice on Form 483 if it finds issues with respect to its inspections, to which the facility must adequately respond in order to avoid escalated regulatory concerns. If our manufacturing facility or those facilities of our collaboration partners and our respective contract manufacturers or processors do not comply with applicable cGMPs and other regulatory requirements, in addition to regulatory enforcement, we may be subject to product liability claims, we may be unable to meet clinical demand for our products, and we could suffer delays in the progress of clinical trials for products under development and of potential approval and commercialization.

Intellia Therapeutics, Inc. 2018 Annual Report (Form 10-K) (February 27, 2019) at 58

We expect to rely in part on third parties to manufacture our clinical product supplies, and we intend to rely on third parties for at least a portion of the manufacturing process of our product candidates, if approved. Our business could be harmed if the third parties fail to provide us with sufficient quantities of product inputs or fail to do so at acceptable quality levels or prices or fail to meet legal and regulatory requirements.

We do not currently own any facility that may be used as our clinical-scale manufacturing and processing facility and must eventually rely on outside vendors to manufacture supplies and process our product candidates. We have not yet caused any product candidates to be manufactured or processed on a commercial scale and may not be able to do so for any of our product candidates. We will make changes as we work to optimize the manufacturing process, and we cannot be sure that even minor changes in the process will result in therapies that are safe, potent or effective.

The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA or other foreign regulatory agencies pursuant to inspections that will be conducted after we submit an application to the FDA or other foreign regulatory agencies. We will be dependent on our contract manufacturing partners for compliance with legal and regulatory requirements for manufacture, including current good manufacturing practice ("cGMP"), and in certain cases, current good tissue practice ("cGTP"), requirements of our product candidates. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel, particularly as we increase the scale of our manufactured material. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our product candidates, if approved.

Intercept Pharmaceuticals, Inc. 2018 Annual Report (Form 10-K) (March 1, 2019) at 49

We rely entirely on third parties for the manufacture of our product requirements for our preclinical studies and clinical trials, as well as our commercial supply of Ocaliva and, if approved, OCA for NASH and our other product candidates, and also depend on third-party vendors and CROs for certain of our clinical trial and product development activities. Our business could be harmed if our third-party manufacturers fail to provide us with sufficient quantities of drug product, or fail to do so at acceptable quality levels or prices, or we lose our relationships with our third-party vendors and CROs and our clinical trial or product development efforts are delayed as a result.

We do not manufacture the pharmaceutical products that we sell or the product candidates that we are developing. We rely on third-party contract manufacturers for all of our required raw materials, API and finished product for our commercial sales and for our existing and anticipated clinical trials and preclinical studies. Any inability by our contract manufacturers to continue to provide services to us for any reason could adversely affect our commercialization efforts and clinical development program, and we may be unable to identify, qualify and engage on terms that are favorable to us replacement suppliers on a timely basis, if at all.

We currently have an agreement with PharmaZell for the manufacture and commercial supply of Ocaliva and, if approved, OCA for NASH. While we have procured supplies for the commercialization of Ocaliva for PBC and, if approved, OCA for NASH, we may not be able to procure sufficient supplies of Ocaliva and, if approved, OCA for NASH on an ongoing basis. We have engaged in activities to qualify additional or backup suppliers, but these suppliers may not be able to meet our long-term commercial supply requirements for Ocaliva or, if approved, OCA for NASH or other indications on acceptable terms, or at all. We do not have agreements for long-term supplies of any of our other product candidates. We currently obtain supplies and services relating to our other product candidates from our third-party contract manufacturers on a
purchase order basis.

The facilities used by any contract manufacturer to manufacture OCA or any of our other product candidates must be the subject of a satisfactory inspection before the FDA or regulators in other jurisdictions approve the product candidate manufactured at that facility. We are completely dependent on these third-party manufacturers for compliance with the requirements of U.S. and non-U.S. regulators for the manufacture of our finished products, including Ocaliva. If our manufacturers are unable to meet our requirements in accordance with our product specifications and applicable cGMP requirements, our products or product candidates will not be approved or, if already approved, may be subject to recall.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured our product candidates and products ourselves, including:

- the possibility that we are unable to enter into or renew our manufacturing agreements with third parties on acceptable terms, or at all;

- the possible termination or breach by our third-party manufacturers of our manufacturing agreements based on factors beyond our control; and
- our inability to timely identify and qualify a replacement for any of our third-party manufacturers in the event any such third-party manufacturer fails to meet our product requirements or following the termination, expiration or nonrenewal of our agreements with such third-party manufacturer.

Any of these factors could disrupt the supply of our product candidates or approved products, cause us to incur higher costs, delay the approval of our product candidates or prevent or disrupt the commercialization of our approved products. Furthermore, if any of our product candidates, including OCA for NASH, are approved and our contract manufacturers fail to deliver the required commercial quantities of finished product on a timely basis and at commercially reasonable prices and we are unable to find one or more replacement manufacturers capable of production at a substantially equivalent cost, in substantially equivalent volumes and quality and on a timely basis, we would likely be unable to meet demand for such product candidate following its approval and could lose potential revenue. It may take several years to establish an alternative long-term source of supply and to have any such new source approved by the regulatory authorities that regulate our products in the United States, Europe and our other target markets.

Ironwood Pharmaceuticals, Inc. 2018 Annual Report (Form 10-K) (February 25, 2019) at 24

We rely entirely on contract manufacturers, our partners and other third parties to manufacture and distribute linaclotide. If they are unable to comply with applicable regulatory requirements, unable to source sufficient raw materials, experience manufacturing or distribution difficulties, or are otherwise unable to manufacture and distribute sufficient quantities to meet demand, our commercialization efforts may be materially harmed.

We have no internal manufacturing or distribution capabilities. Instead, we rely on a combination of contract manufacturers and our partners to manufacture active pharmaceutical ingredient, or API, and final drug product. We rely on our partners to store and distribute linaclotide to third party purchasers. We and certain of our partners have commercial supply agreements with independent third parties to manufacture the linaclotide API used to support all of our partnered territories. Each of Allergan and Astellas is responsible for linaclotide drug product and finished goods manufacturing (including bottling and packaging) for its respective territories, and distributing the finished goods to wholesalers. Under our collaboration with AstraZeneca, we are accountable for drug product and finished goods manufacturing for China, for drug product manufacturing for Hong Kong and Macau, with AstraZeneca accountable for finished goods manufacturing for Hong Kong and Macau. Neither we nor AstraZeneca have experience manufacturing linaclotide on a commercial scale and we and AstraZeneca are working to achieve sufficient redundancy in this component of the linaclotide supply chain.

Each of our API and drug product manufacturers must comply with current good manufacturing practices, or GMP, and other stringent regulatory requirements enforced by the FDA and foreign regulatory authorities in other jurisdictions. These requirements include, among other things, quality control, quality assurance and the maintenance of records and documentation, which occur in addition to our own quality assurance releases. Manufacturers of our products may be unable to comply with these GMP requirements and with other regulatory requirements. We have little control over our manufacturers' or partners' compliance with these regulations and standards.

Our manufacturers may experience problems with their respective manufacturing and distribution operations and processes, including for example, quality issues, such as product specification and stability failures, procedural deviations, improper equipment installation or operation, utility failures, contamination and natural disasters. In addition, the raw materials necessary to make API for our products are acquired from a limited number of sources. Any delay or disruption in the availability of these raw materials or a change in raw material suppliers could result in production disruptions, delays or higher costs with consequent adverse effects on us.

The manufacture of pharmaceutical products requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in commercial

production. These problems include difficulties with production costs and yields, quality control, including stability of the product and quality assurance testing, and shortages of qualified personnel, as well as compliance with federal, state and foreign regulations and the challenges associated with complex supply chain management. Even if our manufacturers or partners do not experience problems and commercial manufacturing is achieved, their maximum or available manufacturing capacities may be insufficient to meet commercial demand. Finding alternative manufacturers or adding additional manufacturers requires a significant amount of time and involves significant expense. New manufacturers would need to develop and implement the necessary production techniques and processes, which along with their facilities, would need to be inspected and approved by the regulatory authorities in each applicable territory.

If our API or drug product manufacturers fail to adhere to applicable GMP or other regulatory requirements, experience delays or disruptions in the availability of raw materials or experience manufacturing or distribution problems, we will suffer significant consequences, including product seizures or recalls, loss of product approval, fines and sanctions, reputational damage, shipment delays, inventory shortages, inventory write-offs and other product-related charges and increased manufacturing costs. If we experience any of these results, or if our manufacturers' maximum or available capacities are insufficient to meet demand, we may not be able to successfully commercialize our products.

KalVista Pharmaceuticals, Inc. 2018 Annual Report (Form 10-K) (July 30, 2018) at 35-36

We contract with third parties for the manufacture of our product candidates for preclinical and clinical testing and we expect to continue to do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or products at an acceptable cost and quality, which could delay, prevent or impair our development or commercialization efforts.

We do not own or operate facilities for the manufacture of our product candidates, and we do not have any manufacturing personnel. We currently have no plans to build our own clinical or commercial scale manufacturing capabilities. We rely, and expect to continue to rely, on third parties for the manufacture of our product candidates for preclinical and clinical testing and we do not have backup sources of supply established for our candidates. We review the manufacturing process for each of our candidates and assess the risk to supply and, as appropriate, establish multiple manufacturers and/or establish stock levels to support future activities and do not believe we are currently substantially dependent on any one third party. Despite the drug substance and product risk management, this reliance on third parties presents a risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts.

Any performance failure on the part of our existing or future manufacturers of drug substance or drug products could delay clinical development or marketing approval. If current suppliers cannot supply us with our Phase 2 requirements as agreed, we may be required to identify alternative manufacturers, which would lead us to incur added costs and delays in identifying and qualifying any such replacement.

The formulation used in early studies frequently is not a final formulation for commercialization. Additional changes may be required by the FDA or other regulatory authorities on specifications and storage conditions. These may require additional studies and may delay our clinical trials.

We expect to rely on third party manufacturers or third-party collaborators for the manufacture of commercial supply of any other product candidates for which our collaborators or we obtain marketing approval.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential product revenue.

We may be unable to establish any agreements with third party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third party manufacturers, reliance on third party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible misappropriation of our proprietary information, including trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third party manufacturers may not be able to comply with cGMP, regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products.

Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

Karyopharm Therapeutics Inc. 2018 Annual Report (Form 10-K) (February 28, 2019) at 80-81

We contract with third parties for the manufacture of our drug candidates for preclinical studies and clinical trials and expect to continue to do so for clinical trials and ultimately for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our drug candidates or drugs or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not have any manufacturing facilities or personnel. We currently rely, and expect to continue to rely, on third-party manufacturers for the manufacture of our drug candidates for preclinical studies and clinical trials under the guidance of members of our organization. We have engaged third-party manufacturers for drug substance and drug product services. We do not have a long term supply agreement with any of these third-party manufacturers, and we purchase our required drug supplies on a purchase order basis.

We expect to rely on third-party manufacturers or third-party collaborators for the manufacture of our drug candidates for clinical trials and ultimately for commercial supply of any of these drug candidates for which we or any of our collaborators obtain marketing approval. We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- the possible failure of the third party to manufacture our drug candidate according to our schedule, or at all, including if the third-party manufacturer gives greater priority to the supply of other drugs over our drug candidates, or otherwise does not satisfactorily perform according to the terms of the manufacturing agreement;
- equipment malfunctions, power outages or other general disruptions experienced by our third-party manufacturers to their respective operations and other general problems with a multi-step manufacturing process;
- the possible misappropriation or disclosure by the third party or others of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

If any of our drug candidates are approved by any regulatory agency, we intend to enter into agreements with third-party contract manufacturers for the commercial production of those products. This process is difficult and time consuming and we may face competition for access to manufacturing facilities, as there are a limited number of contract manufacturers operating under current Good Manufacturing Practices, or cGMPs, that are capable of manufacturing our drug candidates. Consequently, we may not be able to reach agreement with third-party manufacturers on satisfactory terms, which could delay our commercialization.

Third-party manufacturers may not be able to comply with current Good Manufacturing Practices, or cGMP, regulations or similar regulatory requirements outside of the United States. Facilities used by our third-party manufacturers must be inspected by the FDA after we submit an NDA and before potential approval of the drug candidate. Similar regulations apply to manufacturers of our drug candidates for use or sale in foreign countries. We do not control the manufacturing process and are completely dependent on our third-party manufacturers for compliance with the applicable regulatory requirements for the manufacture of our drug candidates. If our manufacturers cannot successfully manufacture material that conforms to the strict regulatory requirements of the FDA and any applicable foreign regulatory authority, they will not be able to secure the applicable approval for their manufacturing facilities. If these facilities are not approved for commercial manufacture, we may need to find alternative manufacturing facilities, which could result in delays in obtaining approval for the applicable drug candidate as alternative qualified manufacturing facilities may not be available on a timely basis or at all. In addition, our manufacturers are subject to ongoing periodic unannounced inspections by the FDA and corresponding state and foreign agencies for compliance with cGMPs and similar regulatory requirements. Failure by any of our manufacturers to comply with applicable cGMPs or other regulatory requirements could result in sanctions being imposed on us or the contract manufacturer, including fines, injunctions, civil penalties, delays, suspensions or withdrawals of approvals, operating restrictions, interruptions in supply and criminal prosecutions, any of which could significantly and adversely affect supplies of our drug candidates and have a material adverse impact on our business, financial condition and results of operations. Any drugs that we may develop may compete with other drug candidates and drugs for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. If our current contract manufacturers cannot perform as agreed, we may be required to replace those manufacturers. Although we believe that there are several potential alternative manufacturers who could manufacture our drug candidates, we may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of our drug candidates or drugs may adversely affect our future profit margins and our ability to commercialize any drugs that receive marketing approval on a timely and competitive basis.

Mustang Bio, Inc. 2018 Annual Report (Form 10-K) (March 18, 2019) at 26-27

We contract with third parties for the manufacture of our product candidates for preclinical and clinical testing and may also do so for commercialization. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or any future product candidate or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

While we have opened our own cell processing facility in Worcester, Massachusetts, in order to supply product candidates for all clinical trials that will be conducted under IND applications to be filed by us (See Note 6 to Audited Financial Statements), currently we rely on third parties for the manufacture of our product candidates for preclinical and clinical testing. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or any future product candidate or such quantities at an acceptable cost or quality, which could delay, prevent or impair our development or commercialization efforts.

We may also rely on third-party manufacturers or third-party collaborators for the manufacture of commercial supply of one or more product candidates for which our collaborators or we obtain marketing approval. We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including, but not necessarily limited to:

- reliance on the third party for regulatory compliance and quality assurance;
- the possible breach of the manufacturing agreement by the third party;
- manufacturing delays if our third-party manufacturers give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreement between us;
- the possible misappropriation of our proprietary information, including our trade secrets and know-how; and
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

We rely on our third-party manufacturers to produce or purchase from third-party suppliers the materials and equipment necessary to produce our product candidates for our preclinical and clinical trials. There are a limited number of suppliers for raw materials and equipment that we use (or that are used on our behalf) to manufacture our drugs, and there may be a need to assess alternate suppliers to prevent a possible disruption of the manufacture of the materials and equipment necessary to produce our product candidates for our preclinical and clinical trials, and if approved, ultimately for commercial sale. We do not have any control over the process or timing of the acquisition of these raw materials or equipment by our third-party manufacturers. Any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing preclinical or clinical trial due to the need to replace a third-party manufacturer could

considerably delay completion of our preclinical or clinical trials, product testing and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these raw materials or equipment after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA pursuant to inspections that will be conducted after we submit an NDA to the FDA. We do not control the manufacturing process of, and are completely dependent on, our contract manufacturers for compliance with cGMP regulations for manufacture of our product candidates. Third-party manufacturers may not be able to comply with the cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including clinical holds, fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our products.

One or more of the product candidates that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us. Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply. If our current contract manufacturers cannot perform as agreed, we may be required to replace such manufacturers. We may incur added costs and delays in identifying and qualifying any replacement manufacturers. The DEA restricts the importation of a controlled substance finished drug product when the same substance is commercially available in the United States, which could reduce the number of potential alternative manufacturers for one or more of our product candidates.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or products may adversely affect our future profit margins and our ability to commercialize any products that receive marketing approval on a timely and competitive basis.

We also expect to rely on other third parties to distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, producing additional losses and depriving us of potential product revenue.

Rockwell Medical, Inc. 2018 Annual Report (Form 10-K) (March 18, 2019) at 24-25

We depend on third parties to manufacture Triferic. If these organizations are unable or unwilling to manufacture our drug products, or if these organizations fail to comply with FDA or other applicable regulations or otherwise fail to meet our requirements, our business will be harmed.

We rely on contract manufacturing organizations ("CMOs") to manufacture Triferic. If a CMO is unable to manufacture Triferic in sufficient quantities and on a consistent basis, or if it becomes unwilling to produce Triferic for us, we may not be able to supply our customers in a timely manner. For I.V. Triferic and our liquid formulation of Dialysate Triferic, we have a single-source finished goods supplier and do not have a long-term supply contract. If we were to experience a supply disruption, it could take an extended period of time to find and qualify an alternate supplier. The manufacturing facilities and processes used by our CMOs must be approved by the FDA and foreign regulators, where applicable, before the drug products manufactured by such CMOs can be sold. After approval, CMOs must meet certain ongoing regulatory requirements for product testing and stability of our commercially marketed products. We do not control the manufacturing processes of our CMOs and depend on them to comply with current good manufacturing practices ("cGMP"), and obtain and maintain regulatory approval. If approval for a CMO is not received or ongoing testing does not continue to meet approved standards and approval is withdrawn, the CMO's production would be delayed or suspended, which could adversely affect our Triferic commercialization efforts. If that was to happen, we may be forced to find another capable CMO or shift production to another CMO that is already approved and under contract with us. Any such circumstance could significantly hamper our ability to supply our customers with our drug products in a timely manner, which may have a material adverse effect on our business, results of operations, financial position and cash flows.

Rhythm Pharmaceuticals, Inc. 2018 Annual Report (Form 10-K) (March 8, 2019) at 100-01

We rely completely on third-party suppliers to manufacture our clinical drug supplies of setmelanotide, and we intend to rely on third parties to produce commercial supplies of setmelanotide and preclinical, clinical and commercial supplies of any future product candidate.

We do not currently have, nor do we plan to acquire, the infrastructure or capability to internally manufacture our clinical drug supply of setmelanotide, or any future product candidates, for use in the conduct of our preclinical studies and clinical trials, and we lack the internal resources and the capability to manufacture any product candidate on a clinical or commercial scale. The facilities used by our contract manufacturing organizations, or CMOs, to manufacture the active pharmaceutical ingredient, or API, and final drug product must pass inspection by the FDA and other equivalent competent authorities in foreign jurisdictions pursuant to inspections that would be conducted after we submit our NDAs or relevant foreign regulatory submission to the other equivalent competent authorities in foreign jurisdictions. In addition, our clinical trials must be conducted with products produced under cGMP regulations. Our failure or the failure of our CROs or CMOs to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process and could also subject us to enforcement action, including civil and criminal penalties. If we import any drugs or drug substances, we would be subject to FDA and U.S. Bureau of Customs and Border Patrol, or CBP, import regulation requirements. Such enforcement for our failure or our CROs or CMOs' failure to comply with these regulations could result in import delays, detention of products, and, depending on criteria such as the history of violative activities, the FDA could place a foreign firm or certain drug substances or products on Import Alert and require that all such drug substances or products be subject to detention without physical examination, or DWPE, which could significantly impact the global supply chain for setmelanotide. FDARA provides that prescription drug products, with the exception of those on the FDA's drug shortage list or properly imported by individuals, may not be imported for commercial use if they were manufactured in a foreign country, unless they have been approved or are otherwise authorized to be marketed in the United States and are labeled accordingly.

We currently contract with a third party for the manufacture of setmelanotide and intend to continue to do so in the future. We have entered into a process development and manufacturing services agreement with Corden Pharma Brussels S.A, or Corden, formerly Peptisyntha SA prior to its acquisition by Corden, under which Corden will provide certain process development and manufacturing services in connection with the manufacture of setmelanotide. We have also entered into a process development and manufacturing services agreement with Recipharm Monts S.A.S, or Recipharm, under which Recipharm will provide certain process development and manufacturing services in connection with the manufacture of setmelanotide. Under our agreements, we pay both Corden and Recipharm for services in accordance with the terms of mutually agreed upon work orders, which we, Corden and Recipharm may enter into from time to time. The agreement with Corden also provides that, subject to certain conditions, for a period following each product launch date, we will source from Corden a portion of our requirements for that product being sourced from non-affiliate third parties. We may need to engage additional third-party suppliers to manufacture our clinical drug

supplies. In the future, if we approach commercialization of setmelanotide or any future product candidate, we will need to engage other third parties to assist in, among other things, labeling, packaging, distribution, post-approval safety reporting, and pharmacovigilance activities. We cannot be certain that we can engage third-party suppliers on terms as favorable as those that are currently in place.

We do not perform the manufacturing of any drug products, and are completely dependent on our CMOs to comply with cGMPs for manufacture of both API and finished drug product. We recognize that we are ultimately responsible for ensuring that our drug substances and finished product are manufactured in accordance with cGMPs, and, therefore, the company's management practices and oversight, including routine auditing, are critical. If our CMOs cannot successfully manufacture material that conform to our specifications and the strict regulatory requirements of the FDA or other equivalent competent authorities in foreign jurisdictions, they may be subject to administrative and judicial enforcement for non-compliance and the drug products would be deemed misbranded or adulterated and prohibited from distribution into interstate commerce. Furthermore, all of our CMOs are engaged with other companies to supply and/or manufacture materials or products for such companies, which exposes our manufacturers to regulatory risks for the production of such materials and products. As a result, failure to satisfy the regulatory requirements for the production of those materials and products may affect the regulatory clearance of our CMOs' facilities generally. If the FDA or another equivalent competent foreign regulatory agency does not approve these facilities for the manufacture of setmelanotide or if it withdraws its approval in the future, we may need to find alternative manufacturing facilities, which would adversely impact our ability to develop, obtain regulatory approval for or market setmelanotide.

We are currently in the process of manufacturing finished drug product for use in our upcoming clinical trials. We believe we currently have a sufficient amount of finished setmelanotide, diluent and placebo to complete our planned clinical trials. However, these projections could change based on delays encountered with manufacturing activities, equipment scheduling and material lead times. Any such delays in the manufacturing of finished drug product could delay our planned clinical trials of setmelanotide, which could delay, prevent or limit our ability to generate revenue and continue our business.

We do not have long-term supply agreements in place with our contractors, and each batch of setmelanotide is individually contracted under a quality and supply agreement. If we engage new contractors, such contractors must be approved by the FDA and other equivalent competent authorities in foreign jurisdictions. We will need to submit information to the FDA and other equivalent competent authorities in foreign jurisdictions describing the manufacturing changes. If manufacturing changes occur post-approval, the FDA may have to approve these changes. We plan to continue to rely upon CMOs and, potentially, collaboration partners to manufacture commercial quantities of setmelanotide, if approved. Our current scale of manufacturing appears adequate to support all of our current needs for clinical trial supplies for setmelanotide. If setmelanotide is approved, we will need to identify CMOs or partners to produce setmelanotide on a larger scale.

Xenon Pharmaceuticals Inc. 2018 Annual Report (Form 10-K) (March 6, 2019) at 41

We intend to rely on third-party manufacturers to produce our clinical product candidate supplies. Any failure by a third-party manufacturer to produce acceptable supplies for us may delay or impair our ability to initiate or complete our clinical trials or commercialize approved products.

We do not currently own or operate any manufacturing facilities nor do we have significant in-house manufacturing experience or personnel. We rely on our collaborators to manufacture product candidates licensed to them or work with multiple CMOs to produce sufficient quantities of materials required for the manufacture of our product candidates for pre-clinical testing and clinical trials and intend to do so for the commercial manufacture of our products. If we are unable to arrange for such third-party manufacturing sources, or fail to do so on commercially reasonable terms, we may not be able to successfully produce sufficient supply of product candidate or we may be delayed in doing so. Such failure or substantial delay could materially harm our business.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured product candidates ourselves, including reliance on the third party for regulatory compliance and quality control and assurance, volume production, the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control (including a failure to synthesize and manufacture our product candidates in accordance with our product specifications) and the possibility of termination or nonrenewal of the agreement by the third party at a time that is costly or damaging to us. In addition, the FDA, EMA, Health Canada and other regulatory authorities require that our product candidates be manufactured according to cGMP and similar foreign standards. Pharmaceutical manufacturers and their subcontractors are required to register their facilities and/or products manufactured at the time of submission of the marketing application and then annually thereafter with the FDA, EMA, Health Canada and other regulatory agencies. They are also subject to periodic unannounced inspections by the FDA, EMA, Health Canada and other regulatory agencies. Any subsequent discovery of problems with a product, or a manufacturing or laboratory facility used by us or our collaborators, may result in restrictions on the product or on the manufacturing or laboratory facility, including product recall, suspension of manufacturing, product seizure or a voluntary withdrawal of the drug from the market. Any failure by our third-party manufacturers to comply with cGMP or any failure to deliver sufficient quantities of product candidates in a timely manner, could lead to a delay in, or failure to obtain, regulatory approval of any of our product candidates.