IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS

JANSSEN BIOTECH, INC. and
NEW YORK UNIVERSITY

Plaintiffs,

v.

CELLTRION HEALTHCARE CO., LTD.,
CELLTRION, INC., and
HOSPIRA, INC.

Defendants.

Civil Action No. 1:15-cv-10698
Civil Action No. 1:16-cv-11117

LEAVE TO FILE ADDITIONAL PAGES
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MEMORANDUM IN SUPPORT OF MOTION TO EXCLUDE OPINIONS OF DR. WURM AND DR. BUTLER REGARDING ALLEGED INFRINGEMENT PURSUANT TO FEDERAL RULE OF EVIDENCE 702

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The remaining patent in this case, the ’083 patent, relates to one of countless possible powders that can be used to make food for cells. Janssen’s ’471 patent, by contrast, covers the infliximab antibody that is the active ingredient in Janssen’s multi-billion dollar drug Remicade®. Now that this Court has invalidated the ’471 patent, Janssen is left only with stretched theories regarding the ’083 patent to try to protect its most successful drug product from competition. The ’083 patent has nothing to do with Remicade®: it is not directed to the infliximab antibody or any component of Remicade®. In fact, infliximab is not mentioned in the patent a single time, and Janssen does not even use the ’083 patent’s claimed powder to make Remicade®. Claims 1 and 2 are directed simply to a generic powder “suitable for producing a final volume of cell culture media”—food used to grow cells that “may secrete a protein, such as an antibody.” Dkt. 1-4 at 10:49–50, 4:30–34. The issues in this case focus on independent claim 1, which recites a list of 61 ingredients in exceedingly precise ranges of concentrations. *Id.* at 10:49–11:51.

Janssen concedes the accused media powders do not literally infringe the ’083 patent in at least a dozen ways, since they do not include at least twelve of the required concentrations—including one that is *more than four-fold* greater than the claimed maximum concentration, and another that is *less than 10%* of the claimed minimum concentration. Janssen has thus proffered two technical experts, Drs. Wurm and Butler, who advance infringement theories under the doctrine of equivalents (“DOE”). The experts’ DOE opinions, however, are legally improper. The Court should exclude these opinions under Federal Rule of Evidence 702 for two independent reasons.

First, courts must exercise a “special vigilance against allowing the concept of equivalence to eliminate completely” any individual claim “element[],” because it would

"conflict[] with the definitional and public-notice functions of the statutory claiming requirement." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29, 40 (1997). Whenever a party's "theory of equivalence would entirely vitiate a particular claim element," "partial or complete judgment should be rendered by the court." *Id.* at 39 n.8.

Here, Janssen's experts rest their DOE opinions on exactly the kind of legally invalid, element-vitiating "theory of equivalence" that is prohibited by the Supreme Court. Rather than focus on the purported "equivalence" of what are in many instances drastically different concentrations for a specific ingredient, the experts evaluate the *overall* performance results (*i.e.*, the ability of the food composition to grow cells) of a variety of whole media compositions. This focus on the alleged similarity of overall performance results in a legally improper evisceration of the '083 patent's precisely claimed concentrations.

This is textbook claim vitiation. Dr. Butler testified that under his theory of equivalence, a media could be equivalent to claim 1 "***regardless*** of what concentrations a person uses," using "***any*** concentration[s]," as long as the two media produced overall equivalent testing results. Ex. 1 (Butler Dep.) at 113:15–25, 109:5–16 (emphasis added). Janssen's experts go so far as to opine that "you could remove an…ingredient" and still have an "equivalent" medium, or even remove "five or six ingredients" and still have "an equivalent media" as long as "the performance characteristics were the same." Ex. 2 (Wurm Dep.) at 150:18–151:2; Ex. 1 (Butler Dep.) at 151:7–16. There can be no clearer case of improper vitiation.

Second, "the ***only*** proper comparison" when conducting an infringement analysis is between the accused product and "the claims of the patent." *Zenith Labs., Inc. v. Bristol-Myers Squibb Co.*, 19 F.3d 1418, 1423 (Fed. Cir. 1994) (emphasis added). Thus, "[i]n order to apply the doctrine of equivalents, comparison is made between the accused device and the properly

construed claims of plaintiff's patent," and not with, for example, "a preferred embodiment described in the specification or with a commercialized embodiment." *Stevenson v. Doyle Sailmakers, Inc.*, No. 87-892, 1992 WL 34693, at *1 (D. Mass. Feb. 18, 1992) (Wolf, J.) (citing *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985)); *see also AquaTex Indus., Inc. v. Techniche Solutions*, 479 F.3d 1320, 1326 (Fed. Cir. 2007).

But Dr. Wurm's tests (on which both of Janssen's experts rely) admittedly failed to conduct any such comparison. Dr. Wurm added multiple critical ingredients to his purported "replicas" of the accused powders that are not actually present in the accused powders. Dr. Wurm also added 29 ingredients to the purported replica of the claimed powder, none of which are mentioned anywhere in either asserted claim. The potential impact of all these changes is undisputed. Dr. Butler did not even know whether the testing results would have been "more or less than 50%" different if they had taken "those 29 ingredients back out." Ex. 1 (Butler Dep.) at 232:13–16. And given all the changes, Dr. Wurm conceded that he "compared the performance of one media that does not literally infringe against the performance of another media that does not literally infringe." Ex. 2 (Wurm Dep.) at 170:13–23.

In complex patent cases, the Court's role as gatekeeper is critical to ensuring that the jury not be misled by unreliable opinions unmoored from proper legal standards and that deviate from the requisite DOE comparison of accused product to claim. Drs. Wurm and Butler's opinions violate the unambiguous law of claim vitiation and rely on a legally erroneous comparison to attempt to show infringement. Their testimony, if not excluded, would inject legal error into the trial. The opinions of Drs. Wurm and Butler thus cannot help the jury resolve the question of infringement, are prejudicially misleading, and should be excluded.

I. Background

A. The ’083 Patent

Janssen asserts claims 1 and 2 of the ’083 patent, which is titled “Chemically Defined Media Compositions.” Dkt. 1-4. Claim 1 recites a “soluble composition, suitable for producing a final volume of cell culture media,” *i.e.*, cell food. *Id*. at 10:49–50. It lists 61 ingredients at specific concentrations with precise minimum and maximum values:

> 1. A soluble composition, suitable for producing a final volume of cell culture media, wherein the composition comprises the following components in the following amounts per liter of the final volume of cell culture media:
>
> anhydrous $CaCl_2$, 5-200 mg;
> anhydrous $MgCl_2$, 15-50 mg;
> anhydrous $MgSO_4$, 20-80 mg;
> $FeSO_4.7H_2O$, 0.05-0.50 mg;
> $Fe(NO_3)_3.9H_2O$, 0.01-0.08 mg;
> $ZnSO_4.7H_2O$, 0.40-1.20 mg;
> ferric ammonium citrate, 0.04-200 mg;
> KCl, 280-500 mg;
> NaCl, 5000-7500 mg;
> $NaH_2PO_4.H_2O$, 30-100 mg;
> Na_2HPO_4, 30-100 mg;
> $CuSO_4.5H_2O$, 0.001-0.005 mg;
> $CoCl_2.6H_2O$, 0.001-0.10 mg;
> $(NH_4)_6Mo_7O_{24}$ $4H_2O$, 0.001-0.005 mg;
> $MnSO_4.H_2O$, 0.000070-0.0080 mg;
> $NiSO_4.6H_2O$, 0.000025-0.0005 mg;
> Na_2SeO_3, 0.004-0.07 mg;
> $Na_2SiO_3.9H_2O$, 0.02-0.4 mg;
> $SnCl_2.2H_2O$, 0.000025-0.0005 mg;
> NH_4VO_3, 0.0001-0.0025 mg;
> D-Glucose, 500-8000 mg;
> sodium pyruvate, 0.0-1000 mg;
> sodium hypoxanthine, 0.0-20.0 mg;
> glycine, 0.0-150 mg;
> L-alanine, 0.0-150 mg;
> L-arginine.HCl, 200-5000 mg;
> L-asparagine.H_2O, 40-250 mg;
> L-aspartic acid, 20-1000 mg;
> L-cysteine.HCl H_2O, 25.0-250 mg;
> L-cystine.2HCl, 15-150 mg;
> L-glutamic acid, 0-1000 mg;
> L-histidine.HCl.H_2O, 100-500 mg;
> L-isoleucine, 50-1000 mg;
> L-leucine, 50-1000 mg;
> L-lysine.HCl, 100-1000 mg;
> L-methionine, 50-500 mg;
> L-ornithine.HCl, 0-100 mg;
> L-phenylalanine, 25-1000 mg;
> L-proline, 0-1000 mg;
> L-serine, 50-500 mg;
> L-taurine, 0-1000 mg;
> L-threonine, 50-600 mg;
> L-tryptophan, 2-500 mg;
> L-tyrosine.2Na.$2H_2O$, 25-250 mg;
> L-valine, 100-1000 mg;
> d-biotin, 0.04-1.0 mg;
> D-calcium pantothenate, 0.1-5.0 mg;
> choline chloride, 1-100 mg;
> folic acid, 1-10 mg;
> i-Inositol, 10-1000 mg;
> nicotinamide, 0.5-30 mg;
> p-aminobenzoic acid, 0.1-20 mg;
> riboflavin, 0.05-5.0 mg;
> thiamine.HCl, 0.5-20 mg;
> thymidine, 0-3.0 mg;
> vitamin B_{12}, 0.05-5.0 mg;
> linoleic acid, 0.01-2.0 mg;
> DL-α-lipoic acid, 0.03-1.0 mg;
> pyridoxine.HCl, 0.5-30 mg;
> putrescine.2HCl, 0.025-0.25 mg; and
> ethanolamine.HCl, 2-100 mg.

Id. at 10:49–11:48. Nine of the 61 listed ingredients may be present in concentrations of as little as 0 mg/L, and thus may be considered optional. Ex. 2 (Wurm Dep.) at 198:7–11. The other 52 are required by the claims, and required in precisely defined concentrations. Claim 2 adds the requirement "further comprising a buffering molecule with a pK_a between 5.9 and 7.8 and a cell protectant." Dkt. 1-4 at 11:49–51.

The '083 patent specification does not assert that there is anything special about this list of ingredients. Indeed, cell culture media using ingredients like these have been around "for decades"—for as long as "[s]cientists have been able to grow animal, and even human cells in a laboratory setting." Ex. 3 (Glacken Op. Rep.) at ¶ 70. Dr. Butler agreed that "the claimed ingredients were known in the art and that skilled artisans generally knew how to combine different ingredients to make soluble compositions useful for making media." Ex. 1 (Butler Dep.) at 72:13–20. Dr. Wurm also agreed that "[a]ll of th[e] ingredients [are ones] that people skilled in the art of cell culture media know are possible ingredients for cell culture media," and that this "has been true for a long time," including "before the date of the inventor's activity in the '083 patent." Ex. 2 (Wurm Dep.) at 16:11–17:10.

In fact, the asserted claims' list of ingredients is common. For example, Dr. Butler admitted that a prior art medium described in a publication by GlaxoSmithKline "includes fifty of the 52 ingredients required by Claim 1 of the '083 patent," and another prior art publication "disclosed 47 of them." Ex. 1 (Butler Dep.) at 269:14–270:8, 297:20–298:3.

Given the undisputed existence of highly similar prior art media powder and ingredient recipes, whatever alleged novelty exists, resides in the precise recipe set forth in claim 1—the 52 required ingredients in specific concentration limits, in some instances with specificity down to the thousandth of a milligram. *See* Ex. 4 (Glacken Reb. Rep.) at ¶¶ 60–68. As Defendants'

expert Dr. Glacken explained, "the inventors carefully chose the upper and lower concentration ranges for each of the recited ingredients," such that a person of ordinary skill in the art "would conclude these concentrations are indeed meaningful" and "critical." Ex. 4 (Glacken Reb. Rep.) at ¶¶ 63–65. Janssen's expert Dr. Butler agreed:

> Q. The inventors, when defining their invention in Claim 1, set precise outer boundaries for the scope of their invention, true?
> A. That's true, that's correct.
> Q. And they were telling the world that the concentrations in Claim 1 were critical and important to their invention, true?
> A. The concentrations were important they were telling the world, yes.
> Q. And they were telling the world that the concentrations that they specified in claim one were important to practicing their invention, true?
> A. Yes.

Ex. 1 (Butler Dep.) at 60:18–61:10 (objection omitted). Dr. Butler could identify nothing in the '083 patent to "suggest that the inventors meant to include within the scope of their invention concentrations outside Claim 1." *Id*. at 65:4–11.

B. Janssen's Infringement Theory

Janssen asserts that two powders made by third party GE Healthcare HyClone ("HyClone") in Utah—Celltrion Growth Medium ("CGM") and Celltrion Production Medium ("CPM")—directly infringe claims 1 and 2 of the '083 patent. HyClone sells the two powders to Celltrion, located in South Korea, where the powders are mixed with other ingredients and water to make cell culture media. Celltrion then uses the media to grow cells that produce a biosimilar infliximab antibody. Celltrion harvests the antibody, performs a number of filtration and purification steps, and then formulates infliximab as Inflectra®, which it sells to Hospira. Hospira distributes Inflectra® in various countries around the world.

Janssen admits that the HyClone powders do not literally infringe the '083 patent because the powders avoid the claimed concentrations a dozen or more times, including for example one ingredient that is ***433%*** of the claimed maximum concentration, and another that is about ***8%*** of

the claimed minimum concentration, as illustrated here, where the claimed range is green and the red "X" indicates HyClone's concentration:

Ex. 4 (Glacken Reb. Rep.) at ¶ 70; Appendix A.[1] Janssen concedes that one HyClone powder has thirteen ingredients outside the permitted ranges, and the other has twelve ingredients outside the permitted ranges. Ex. 5 (Wurm Op. Rep.) at ¶ 48. Thus, Janssen argues Defendants infringe under the DOE.

C. Dr. Wurm's Test Protocol

In support of its DOE theory, Janssen proffers tests performed by Dr. Wurm that purport to analyze DOE, but he never even attempted to make and test any medium that faithfully reproduced *either* the HyClone powders *or* the claimed media. He thus misapplied the fundamental requirement under the law that an infringement analysis must compare the accused product to the asserted claim. Dr. Butler did no testing and instead relied on Dr. Wurm's testing, which was legally flawed in multiple ways.

First, although he claimed to test HyClone's powders, Dr. Wurm did not actually "do any test with a purchased or otherwise obtained sample of powder derived from HyClone." Ex. 2 (Wurm Dep.) at 85:5–18. That is, Dr. Wurm "didn't test actual samples of the powder that

[1] Appendix A summarizes each ingredient in claim 1 that is present in media made from the HyClone powders in a concentration that is outside the range claim 1 requires, along with percentage differences for exemplary ingredients calculated by Defendants' expert Dr. Glacken.

HyClone sells." Ex. 1 (Butler Dep.) at 158:21–24. Instead, he produced what he called "replicas" of the HyClone powders. But they were not replicas, because they indisputably were "not made from the same ingredients" as the HyClone powders. Ex. 2 (Wurm Dep.) at 81:21–82:3, 82:20–83:5. Both so-called "replicas" included five extra ingredients not present in the HyClone powders, and one of the purported replicas omitted an ingredient present in the HyClone powders. *Id.* at 81:14–82:3, 177:11–16, 184:5–8, 193:19–194:4. The five extra ingredients were critical, according to Dr. Butler, who conceded that "the experiment results would have looked different" and "would have failed" without them. Ex. 1 (Butler Dep.) at 168:9–20, 169:13–20, 191:19–25, 192:12–193:13, 193:14–22. Dr. Wurm himself conceded that he "never" conducted a "test" that would verify that his purported replicas were a fair proxy for the accused HyClone powders. Ex. 2 (Wurm Dep.) at 207:4–10.

Second, the medium to which Dr. Wurm compared his "replicas" was not the claimed medium. Rather than reproduce the medium of claim 1, Dr. Wurm made a number of "variants" of his purported replicas. Ex. 5 (Wurm Op. Rep.) at ¶¶ 58–59. Specifically, Dr. Wurm started with the purported replicas and varied the concentration of one ingredient at a time, to bring it from *outside* the claimed concentration range to *within* the claimed concentration range, leaving the remaining eleven claimed ingredients (for CPM), or the remaining twelve claimed ingredients (for CGM), at concentrations outside the claimed ranges. *See* Ex. 5 (Wurm Op. Rep.) at ¶ 59; Ex. 2 (Wurm Dep.) at 168:13–25, 169:18–170:23. Put differently, "each 'variant' had one ingredient's concentration modified to be within the claimed concentration, while the concentrations of [at least eleven] ingredients remained *outside* of the claimed ranges consistent with the formulations of the HyClone production or growth product. … That is, none of these 12 'variants' was missing only a single claim limitation." Ex. 4 (Glacken Reb. Rep.) at ¶ 127.

Furthermore, like the purported replicas, each variant contained 29 ingredients that are present in the accused HyClone powders but are not required by either asserted claim. Ex. 2 (Wurm Dep.) at 270:2–271:10; Ex. 1 (Butler Dep.) at 230:10–231:14. Each also included the five extra ingredients that he improperly added to his "replicas," but are absent from the HyClone accused powder and not required by the claims.

In short, Dr. Wurm's variants clearly are not reproductions of the media powder recited in claim 1, because each one differs from claim 1 in at least ***45*** ways: at least ***eleven*** claimed ingredients that are present in the variants in concentrations outside the claimed ranges, plus ***29 ingredients*** present in the accused HyClone powders but not claimed at all in claim 1, and the ***five extra ingredients*** not in the accused HyClone powders or the claims.

To perform a legally appropriate DOE analysis, the law requires a comparison of the accused product to the claimed product. Dr. Wurm did not do this. His purported replicas contain ingredients not found in the accused products (and one purported replica was also missing an ingredient that is found in the accused products). And his variants contain numerous ingredient concentrations and ingredients not found in claim 1. As Dr. Wurm conceded, he "compared the performance of one media that does not literally infringe against the performance of another media that does not literally infringe." Ex. 2 (Wurm Dep.) at 170:13–23.

Third, Dr. Wurm and Dr. Butler had to rely on "overall" results because Dr. Wurm's tests were not designed to isolate the impact of each individual concentration difference. As discussed above, he performed a series of tests comparing his purported replicas (differing from the HyClone powder in at least five ways) to the variants (which contained many unclaimed ingredients). In those comparisons between each of the 90-plus ingredient compositions, Dr. Wurm measured the overall performance of the purported replicas and variants on three

parameters: (1) "amount of antibody produced (the titer)," (2) "viable cell density…over the course of the culture," and (3) cell "viability over the course of the culture." Ex. 5 (Wurm Op. Rep.) at ¶ 54. He produced graphs of the data for these three parameters, for all of his purported replicas and variants. *Id.* at ¶¶ 70, 73, 76, 82, 85, 88. Operating under a misconception of law, Dr. Wurm compared the overall performance of media made from the purported replicas and the variants, conceding his comparison "is a report of the performance of the whole medium," that is, a test of the entirety of all ingredients and concentrations present in a particular sample. Ex. 2 (Wurm Dep.) at 156:9–157:3. Dr. Wurm admitted that his testing comparing the overall performance of the purported replicas to the overall performance of the variants "does not disclose or does not teach us which component in the medium provides growth potential. ***It's always the sum of everything, always.***" *Id.*[2]

Importantly, the claims of the '083 patent require precise ingredients and concentration limitations—they do not include or even reference performance limitations. Because they compared the performance of whole powders and do not know the specific contribution of any ingredient's particular claimed concentration, Drs. Wurm and Butler opine that the missing claimed concentrations do not matter, stating that equivalence can be found "***regardless*** of what concentrations a person uses," and with "***any*** concentration" of a particular ingredient. Ex. 1 (Butler Dep.) at 113:15–25, 109:5–16 (emphasis added). According to Janssen's experts, "you could remove an…ingredient," or even "five or six ingredients," and still have "an equivalent

[2] Dr. Wurm's graphs of the three overall performance metrics—viable cell density, cell viability, and antibody titer—show that the purported replicas and variants all performed differently. *See, e.g.*, Ex. 5 (Wurm Op. Rep.) at ¶¶ 70, 73, 76, Figure 1, Figure 2, Figure 3. While Drs. Wurm and Butler declared them "equivalent" in terms of performance, they conceded that they could identify no objective metric by which the performance comparison was evaluated or deemed "equivalent." *See, e.g.*, Ex. 2 (Wurm Dep.) at 142:25–143:20; 146:13–25; 149:9–22.

media" as long as "the performance characteristics were the same." Ex. 2 (Wurm Dep.) at 150:18–151:2; Ex. 1 (Butler Dep.) at 151:7–16.

II. Legal Standard

The Supreme Court has observed that Federal Rule of Evidence 702 "assign[s] to the trial judge the task of ensuring that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 597 (1993). "[A] trial judge must make these determinations whenever scientific, technical, or other specialized knowledge is at issue." *Cipollone v. Yale Indus. Prods., Inc.*, 202 F.3d 376, 380 (1st Cir. 2000) (citing *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147–49 (1999)). "The ultimate purpose of the *Daubert* inquiry is to determine whether the testimony of the expert would be helpful to the jury in resolving a fact in issue." *Cipollone*, 202 F.3d at 380.

"Rule 702's 'helpfulness' standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Daubert*, 509 U.S. at 591–92; Fed. R. Evid. 702. The question of admissibility requires a determination of "whether the premises upon which the [expert's] opinion is based include assumptions about the applicable legal standard that are incorrect." *Carapellucci v. Town of Winchester*, 707 F. Supp. 611, 619 (D. Mass. 1989); *see also, e.g., Martinez v. Porta*, 601 F. Supp. 2d 865, 866 (N.D. Tex. 2009) (expert opinions "cannot be based on an erroneous legal premise"); *Loeffel Steel Prods., Inc. v. Delta Brands, Inc.*, 387 F. Supp. 2d 794, 806 (N.D. Ill. 2005) ("Expert opinions that are contrary to law are inadmissible."); *Bailey v. Allgas, Inc.*, 148 F. Supp. 2d 1222, 1245–46 (N.D. Ala. 2000) (expert's opinion, based on "analysis [that] is contrary to the law," is inadmissible under Fed. R. Evid. 702). Similarly, expert testimony that "is connected to existing data only by the *ipse dixit* of the expert" should be excluded. *See Gen Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

Here, Janssen's experts' opinions cannot help the jury resolve the question of infringement under the DOE because they (1) rest on "assumptions about the applicable legal standard [for DOE] that are incorrect" (*Carapellucci*, 707 F. Supp. at 619), and (2) do not perform the legally required comparison of accused product to asserted claims.

III. Drs. Wurm and Butler Misapply the DOE and Violate the Prohibition on Claim Vitiation

Dr. Wurm's and Dr. Butler's infringement opinions should be excluded because they analyze DOE based on the claims as a whole, and thus "effectively eliminate" claim elements in precisely the way the Supreme Court has prohibited. *Warner-Jenkinson*, 520 U.S. at 29. Because the DOE undermines the notice function of the claims, clear limits have been placed on the doctrine that require comparing the accused product to the claimed invention on an element-by-element basis—a violation of which inevitably erases "meaningful" "limitations of the claims upon which the public is entitled to rely in avoiding infringement." *Conopco, Inc. v. May Dep't Stores Co.*, 46 F.3d 1556, 1562 (Fed. Cir. 1994). The Supreme Court has emphasized that courts must exercise "a special vigilance against allowing the concept of equivalence to eliminate completely any such [individual] elements." *Warner-Jenkinson*, 520 U.S. at 40. "[I]f a court determines that a finding of infringement under the [DOE] 'would entirely vitiate a particular claimed element,' then the court should rule that there is no infringement under the [DOE]." *Lockheed Martin Corp. v. Space Sys./Loral, Inc.*, 324 F.3d 1308, 1321 (Fed. Cir. 2003). Put differently, "[i]t is important to ensure that the application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety." *Warner-Jenkinson*, 520 U.S. at 29. Vitiation "is a legal determination that 'the evidence is such that no reasonable jury could determine two elements to be equivalent.'" *Virnetx, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1323 (Fed. Cir. 2014) (citation omitted).

All of Dr. Wurm's tests improperly focus on the end result, or performance, of a whole powder including 90-plus ingredients. But it is black letter law that a "generalized showing of equivalency between the claim as a whole and the allegedly infringing product or process is not sufficient to show infringement." *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1296 (Fed. Cir. 2009) (citing *Warner-Jenkinson*, 520 U.S. at 29); *see also Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935 (Fed. Cir. 1987) (citing *Lemelson v. United States*, 752 F.2d 1538, 1551 (Fed. Cir. 1985)). Indeed, "[i]n no case" "may the doctrine of equivalents ignore the individual claim elements." *Abbott Labs.*, 566 F.3d at 1297 (citing *Warner-Jenkinson*, 520 U.S. at 40); *accord Intellectual Ventures I, LLC v. Canon Inc.*, 143 F. Supp. 3d 143, 155 (D. Del. 2015) ("The mere showing that an accused device is equivalent overall to the claimed invention is insufficient to establish infringement under the doctrine of equivalents.").

The Federal Circuit has considered and rejected similar efforts of an expert to base equivalence on overall performance. In *Tronzo v. Biomet*, for instance, the plaintiff asserted a patent directed to a hip prosthesis requiring a "conical" cup against a defendant using a "hemispherical" cup. *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1160 (Fed. Cir. 1998). Plaintiff's expert testified that a hemispherical cup, once implanted into the body, will ultimately function "almost exactly the same way" without analyzing whether the difference of the particular hemispherical element was insubstantially different from the conical element claimed. *Id.* The Federal Circuit held no infringement under the DOE as a matter of law, because the expert's opinion was that essentially "***any*** shape would be equivalent to the conical limitation" so long as it had the same ultimate function. *Id.* (emphasis added). Because this theory wrote "the 'generally conical outer surface' limitation out of the claims" and asserted the shape element is "irrelevant" to achieve the "desired result," it failed to establish equivalence as "a matter of law."

Id.; *see also Forest Labs., Inc. v. Abbott Labs*., 239 F.3d 1305, 1313 (Fed. Cir. 2001) ("If we accepted this testimony and treated the water limitation as irrelevant, we would be vitiating that limitation.").

District courts have reached the same conclusion. For example, in *Chiron Corp. v. SourceCF Inc.*, the Court granted judgment of noninfringement where a patentee advanced the same "total" performance theory as Janssen's experts. *Chiron Corp. v. SourceCF Inc.*, 431 F. Supp. 2d 1019, 1034–36 (N.D. Cal. 2006). In *Chiron*, the claims were directed to a concentration formulation, but the "[t]he thrust of" the patentee's DOE case was "that total dose—not concentration—is the essential consideration." *Id.* at 1035. The patentee's expert's "methodology tended to prove that almost any weak concentration would still infringe" as long as the overall "*result* achieved is the same." *Id*. at 1036–37 (emphasis in original). The court rejected this approach, finding it "would read the concentration limitation out of the claim." *Id*. at 1035. As a result, the patentee's expert vitiated the concentration element, failing to prove DOE. *Id*. at 1037–38.

Similarly, in *Revlon Consumer Products Corp. v. Estee Lauder Co*., the court granted summary judgment of noninfringement where "Revlon assert[ed] that the degree of coating [wa]s irrelevant as long as it results in hydrophobicity—effectively vitiating the structural coating element." *Revlon Consumer Prods. Corp. v. Estee Lauder Co*., No. 00-5960, 2003 WL 21751833, at *40 (S.D.N.Y. Jul. 30, 2003). The Court held that "[a]bsent some evidence of the degree of coating," it "cannot grant Revlon the possibility of equivalence, as that would be nothing but a blank check in Revlon's favor." *Id.* (citing *Warner-Jenkinson*, 520 U.S. at 40).

Just like the equivalence theories in *Tronzo*, *Chiron*, and *Revlon*, Janssen's experts' focus on overall performance results is exactly the kind of improper "broad play" that "effectively

eliminates" the concentration requirements. *Warner-Jenkinson*, 520 U.S. at 29. Indeed, the Federal Circuit rejected a virtually identical DOE theory as a matter of law in *Conopco, Inc. v. May Dep't Stores Co.* There, a patent claimed a recipe for hand lotion that required a ratio of "about 40:1 to about 1:1" of two ingredients by weight, and the patentee asserted infringement by a product having a ratio of 162.9:1. *Conopco*, 46 F.3d at 1560, 1562. The Federal Circuit held that to find a four-fold difference in weight ratio to be equivalent would "erase 'meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement.'" *Id*. at 1562. The "'about 40:1' limitation" was "meaningful," and a "conclusion that the 162.9:1 formulation infringes under the doctrine of equivalents would eviscerate the plain meaning of that limitation." *Id*.

Last year, the Federal Circuit upheld summary judgment in another analogous case involving a shipping container system that required certain mechanical connections at the "proximate end" of a component, properly defined as either "the extreme or last part lengthwise." *Advanced Steel Recovery, LLC v. X-Body Equip., Inc.*, 808 F.3d 1313, 1317 (Fed. Cir. 2015). Based on the "narrowness of the asserted claims" and the "precise and specific structural limitations in the claims," the Court found that—as a matter of law—a connection 35% away lengthwise from the end was *too far* to be deemed equivalent. *Id.* at 1320–21. It explained that "[w]hile the term 'proximate end' by no means precludes *some* offset from the absolute end, we find no error in the district court's conclusion" that the "range of equivalents does not extend" so far, because it would amount to "ignor[ing] precise and specific structural limitations in the claims." *Id.* (emphasis in original) (quoting *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1382 (Fed. Cir. 2000) "[T]he range of equivalents," the Court explained, "cannot be divorced from the scope of the claims." *Id.* at 1321.

In yet another analogous case, the Federal Circuit affirmed a decision of this Court that rejected an expansive application of the DOE that vitiated a claim element requiring a precise numerical range, just as Drs. Wurm and Butler do here:

> As construed, claim 1 requires … a fruit product having a moisture content of approximately 10 to 18%. The undisputed record here is that the decharacterized fruit pieces entering the CCI have roughly a 87 to 90% moisture content. ***To find that an item of fruit with a moisture content between 87 to 90% is insubstantially different from an item of dried fruit with a moisture content between 10 to 18% would defy reason and necessarily render the "dried fruit" limitation meaningless***. Accordingly, we affirm the district court's finding that OSC's accused process does not employ "dried fruit" as contemplated by claim 1.

Amazin' Raisins Int'l, Inc. v. Ocean Spray Cranberries, Inc., 306 F. App'x 553, 558–59 (Fed. Cir. Oct. 31, 2008) (emphasis added); *see also Amazin' Raisins Int'l, Inc. v. Ocean Spray Cranberries, Inc*., No. 04-12679, 2007 WL 2386360, at *15 (D. Mass. Aug. 20, 2007) (J. Wolf), *aff'd*, 306 F. App'x 553 (doctrine of equivalents may not operate to vitiate entire claim limitation) (citing *Warner-Jenkinson*, 520 U.S. at 29); *see also Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1328–29 (Fed. Cir. 2007) (limitation of "about 1:5" weight ratio was "critical to the invention" and finding infringement by Caraco's product, which had ratio "of no less than 1:7.5," "would impermissibly vitiate the limitation.'"); *Talbert Fuel Sys. Patents Co. v. Unocal Corp*., 347 F.3d 1355, 1360 (Fed. Cir. 2003) ("classical principles of the doctrine of equivalents preclude[d] a finding of equivalency" and "no reasonable trier of fact could find only insubstantial differences" where the claim required a "boiling point range of 121°F to 345°F" and the accused products "do not simply depart by a few degrees from 345°F, but have 'true boiling point endpoints ranging from 373.8°F to 472.9°F.'").

Janssen's experts' DOE opinions should be excluded because they apply the same faulty theories rejected by the courts in all these cases. Dr. Wurm asserts that his methodology provides a "function-way-result" analysis for each of the twelve ingredients he varied. But his

theory is fatally flawed, because while he varied a single ingredient in each variant, his tests are not an element-by-element analysis, but rather only look to the *end result* of each *whole* composition tested. During his deposition, Dr. Wurm conceded that his testing "does not disclose or does not teach us which component in the medium provides the growth potential" and is "always the sum of everything, always." Ex. 2 (Wurm Dep.) at 156:9–157:3. Likewise, Dr. Wurm had to concede that his methodology "doesn't give [him] any hint for synergy" amongst components, nor for "performance of any of the individual component being superior over another." *Id*. at 118:19–119:4. Thus, Dr. Wurm's tests do not isolate the function, way, and result of individual ingredients—they mask it, as they do not and cannot reveal the effect on performance of a single element. *Id*.

Drs. Butler and Wurm openly admit that this approach resulted in completely disregarding the concentration limitations for each individual ingredient. Dr. Butler testified "how I understand the doctrine of equivalents" was to focus on the end "result" "regardless of what concentrations a person uses." Ex. 1 (Butler Dep.) at 113:15–25. Dr. Wurm did not even know how to distinguish the "function" and "way" components of a proper DOE analysis from the "result," testifying that when it came to "analyz[ing] whether the way that the function is carried out in [his] variants is the same as the way it's carried out in [HyClone powder]", "***I don't know even the difference in the semantics of the two function and way.***" Ex. 2 (Wurm Dep.) at 268:11–25 (emphasis added).

Just as the theory of equivalence in *Advanced Steel* would "ignore" the claim's "precise and specific structural limitations," both Dr. Wurm and Dr. Butler likewise concede that their approach resulted in them ignoring the "precise" concentration "outer boundaries" that the '083 patent inventors "were telling the world" were "critical and important to their invention." Ex. 1

(Butler Dep.) at 60:18–61:10. In fact, both experts assert equivalence of concentrations that are as large as ***433%*** of a claimed maximum boundary and as small as ***8%*** of a claimed minimum boundary. Ex. 4 (Glacken Reb. Rep.) at ¶ 70; Appendix A.

Their theory has no limits. Dr. Wurm testified that "I will not say to you hundred times difference is a big difference," nor is any other multiplier of a claimed concentration limit a "big difference," in his opinion. Ex. 2 (Wurm Dep.) at 266:13–267:11. Similarly, Dr. Butler could not identify a concentration outside the claimed range that would be a substantial difference. When asked whether a concentration can "go ten times above the maximum" or "20 times above the maximum" and still be considered "an equivalent cell culture media," he could not say. Ex. 1 (Butler Dep.) at 94:7–23; *see also id.* at 92:2–10.

The reason Janssen's experts ultimately ignored the concentration limitations is because they focused entirely on the end result of a given cell culture medium:

> Q. … As you viewed your task in this case, and as you viewed the doctrine of equivalents, so long as the 52 required elements were in a cell culture media, ***any concentration*** of those 52 required elements would be an equivalent cell culture media to Claim 1 so long as they -- that cell culture media produced substantially the same results in Dr. Wurm's testing?
> A. Yes.
> ….
> Q. But then when we go over to an equivalents analysis, ***regardless of what concentrations a person uses***, as long as the 52 ingredients when tested in Dr. Wurm's testing produced substantially the same result as the claimed media, then that cell culture media would be deemed equivalent?
> A. That's how I understand the doctrine of equivalents.

Id. at 109:5–16, 113:15–25 (objections omitted) (emphasis added). Janssen's experts even went so far as to say that the concentration of a claimed ingredient—even one of the 52 ingredients requiring a non-zero minimum concentration—could be zero under their approach (*i.e.*, the ingredient could be eliminated completely from a given medium), and as long as the medium's performance is the same or similar, the medium would be equivalent in their view:

> Q. But if you did the experiments and the result was that the 52 minus five or six ingredients performed with substantially the same results as the claimed media in Dr. Wurm's testing, it would be an equivalent media in your view and opinion?
> A. It would be an equivalent media if the performance characteristics were the same.

Id. at 151:7–16 (objection omitted).

> Q. Is it possible that you could remove an element, an ingredient, and get performance within 25 percent on the measurements that you have tested?
> A. Yes, it's possible.
> Q. Is that then equivalent in your view?
> A. Yes.

Ex. 2 (Wurm Dep.) at 150:18–151:2.

Permitting "any" substitute for a claimed element, as Drs. Butler and Wurm have done, is contrary to the law. "[A]ccept[ing] this testimony and treat[ing] the … limitation as irrelevant … would be vitiating that limitation." *Forest Labs.*, 239 F.3d at 1313. If, "[a]ccording to the expert testimony, *any* [substitute] would be equivalent to the … limitation" at issue, that theory vitiates the limitation, and the DOE fails as "a matter of law." *Tronzo*, 156 F.3d at 1160 (emphasis in original).

Because Drs. Butler and Wurm focus only on overall performance, and utterly disregard the precise and important concentration limits of the claim, their legally erroneous opinions should be excluded.

IV. Janssen's Experts' Opinions Should Be Independently Excluded Because They Do Not Compare the Accused Products to the Claimed Media.

Testimony from Janssen's experts that pertains to Dr. Wurm's tests should also be excluded for the independent reason that Dr. Wurm did not compare the claims to the accused products. The Federal Circuit has made clear that "[i]nfringement, literal or by equivalence, is determined by comparing an accused product … with the properly and previously construed claims in the suit." *SRI Int'l*, 775 F.2d at 1121; *accord Stevenson*, 1992 WL 34693, at *1. Thus,

"[i]t is the limitations and functions of the invention described in the claims, not the elements or functions of the accused device, which establish the reference point for the doctrine of equivalents analysis." *Insta-Foam Prod., Inc. v. Universal Foam Sys., Inc.*, 906 F.2d 698, 702 (Fed. Cir. 1990). Indeed, "the ***only*** proper comparison" for an infringement analysis is a comparison of the accused product "with the claims of the patent." *Zenith Labs.*, 19 F.3d at 1423 (emphasis added).

Because Dr. Wurm failed to compare the accused HyClone powders to the claimed invention, and used the elements and functions of the accused products as the reference point, the experts' testimony regarding those tests should be excluded under Federal Rule of Evidence 702.

A. Dr. Wurm Did Not Test the Accused HyClone Powders

Dr. Wurm did not test the accused HyClone powders. Instead, he tested purported "replicas" that both he and Dr. Butler admitted were not true and accurate replicas. First, Dr. Wurm conceded repeatedly that he did not test "***any*** HyClone product in this case." Ex. 2 (Wurm Dep.) at 57:12–58:6; 59:15–21; 61:2–5, 79:20–81:18, 85:5–18. Indeed, Janssen never even requested samples of the accused powders. Second, Dr. Wurm did nothing to validate that what he did test, the purported replicas, could inform how the very different HyClone powders would react. These failings require exclusion.

On the first point, it is undisputed that neither Dr. Wurm, nor any expert Janssen has put forth, obtained and tested samples of the accused HyClone powders or media made from them:

> Q. So I think this is now established, that you didn't do any test on a media that was the HyClone growth powder in water?
> A. I did not do any test with a purchase or otherwise obtained sample of powder derived from HyClone in cell culture for this purpose.
> Q. And that's true for the HyClone production powder as well?
> A. That's true -- ... Same answer.
> Q. And you didn't do any test where you made the medium, but it was water plus just the ingredients in the HyClone production powder?
> A. I agree.

* * *

> Q. … You didn't do any test where you made the medium, but it was water plus just the ingredients in the HyClone growth powder?
> A. I did not.

Ex. 2 (Wurm Dep.) at 85:5–23 (objections omitted), 86:8–13 (objection omitted). Thus, despite the fact that Janssen seeks a finding that all three Defendants and third party HyClone are liable for infringing the '083 patent, and seeks injunctive relief and damages on that basis, Janssen's experts have not offered a single opinion on alleged infringement in this case that is based on any test or analysis of the actual products accused of infringing the '083 patent.

Although Dr. Wurm used the term "replicas" for the compositions he tested, they indisputably are not actual "replicas." The purported replicas included ***five*** ingredients that are not present in the accused HyClone powders: glutamine, sodium bicarbonate, xanthine, mycophenolic acid, and hypoxanthine. Ex. 2 (Wurm Dep.) at 177:11–16, 184:5–8, 193:19–194:4; *see also id*. at 82:20–83:5. And Dr. Wurm accientally "left out" an ingredient, galactose, in one of his purported replicas that is present in the accused HyClone powders:

> Q. … You added ingredients to your prepared CGM that are not in the HyClone growth powder?
> A. Correct.
> Q. You also left out galactose from your CGM that is in the HyClone growth powder, correct?
> A. That is correct.

Id. at 81:21–82:3. Dr. Wurm conceded that the omission of galactose, [redacted], was "[u]nfortunate[]." *Id*. at 181:21–182:4; Dkt. 294-1 at 19–26.

On the second point, Dr. Wurm and Dr. Butler have offered no basis to conclude that the purported replicas are proxies for the accused HyClone powders. Dr. Wurm did not do any test to compare his purported replicas to media made from the accused HyClone powders to examine

how the differences between the purported replicas and the HyClone powders impacted his testing:

> Q. So you never did any test that would compare how your CGM or CPM replicas compared to media made from HyClone's actual production powder or growth powder, correct?
> A. I did never do such a test.

Id. at 207:4–10 (objection omitted). Because the purported replicas have significant differences from the accused HyClone powders (having five extra ingredients and in one case is also missing an ingredient), and because Dr. Wurm did not do any test to determine the impact of those differences, there is no basis for Dr. Wurm to assume that his purported replicas can inform whether the differences between the HyClone powder and the claimed media are substantial or insubstantial.

Courts have excluded the opinions and testing of an expert who tested a purported proxy of the accused products instead of the accused products themselves, but failed to establish a nexus between the tests performed and the untested accused products. For example, in *Izumi Products Co. v. Koninklijke Philips Electronics N.V.*, a scientific expert sought to prove infringement under the DOE but examined only 2 of 116 accused products. *See Izumi Prod. Co. v. Koninklijke Philips Elecs. N.V.*, 315 F. Supp. 2d 589, 602 (D. Del. 2004), *aff'd*, 140 F. App'x 236, 244 (Fed. Cir. 2005). Because the expert did not establish a connection between the products he did test and those he did not, the Court disqualified the expert's testing and opinion, noting his "theory to explain the function of the accused infringing [product is] based solely on his subjective belief. He did not perform any testing on any of the accused infringing [products] … to validate his theory." *Id*. at 602.

The facts in the instant case are even more egregious than those in *Izumi*. Dr. Wurm admitted that because he did not test HyClone powders, he does not know "how they would

perform." Ex. 2 (Wurm Dep.) at 87:16–88:3. Dr. Wurm was not even aware of the functions of many of the claimed ingredients or ingredient concentration ranges. *Id.* at 246:19–250:13. As for the ingredient galactose that is present in the accused HyClone powders but which Dr. Wurm omitted from his purported replica of one of them (CGM), Dr. Wurm did not know the impact or even the function of that ingredient:

> Q. What's the purpose of galactose?
> A. Oh, that's a good question. And I don't know.
> Q. You don't know -- you don't know what the purpose is?
> A. No.
> Q. Okay.
> A. I can speculate but you don't want me to speculate, right?
> Q. Yeah, we don't need that right now, so -- now, did you do any test to compare CGM perform -- the CGM replica with the galactose compared with the CGM replica without galactose to see how they performed?
> A. No.

Id. at 182:24–183:14. Accordingly, because Dr. Wurm performed no test to show how the omission of galactose impacted the reliability of his purported replica as a proxy for the accused HyClone powder, and has no knowledge of the purpose of galactose, he has no basis on which to declare the impact of that omission meaningless.

Moreover, Dr. Butler confirmed that Dr. Wurm's purported replicas are not reliable representations of the accused HyClone powders. For each ingredient Dr. Wurm improperly added to the purported replicas, Dr. Butler testified they impacted Dr. Wurm's experiments. Dr. Butler testified that had the extra ingredients Dr. Wurm added to his samples not been added, "the experiment results would have looked different" (Ex. 1 (Butler Dep.) at 169:13–20), the cells grown in the media "would not have been productive in terms of the antibody" (*id*. at 191:19–25) and "the growth would not have been equivalent." *Id*. at 168:9–20. Several of the extra ingredients in the purported replicas, according to Dr. Butler, could have resulted in "failed experiments" if they had not been added. *Id.* at 168:9–20, 169:13–20, 192:12–193:22.

For one ingredient Dr. Wurm added to his purported replicas, L-glutamine, although it is not recited in claim 1, [redacted]. Ex. 6 (JANREM0000001) at 003 ([redacted]). The accused HyClone powders do not contain L-glutamine, however. In other words, Dr. Wurm included in his purported replicas an ingredient that is not in the accused products, [redacted].

All of these shortcomings in Dr. Wurm's purported replicas make them unreliable and not helpful to the trier of fact in determining whether the accused HyClone powders infringe the asserted claims. Permitting Dr. Wurm to testify that the accused HyClone powders infringe, based on his purported replicas, would be to permit opinions "based solely on his subjective belief," would lack any valid scientific connection to the accused products, and would be impermissible under Federal Rule of Evidence 702. *Izumi*, 315 F. Supp. 2d at 602. Opinions about Dr. Wurm's testing should be excluded on this basis alone. *See, e.g.*, *Thermapure, Inc. v. RXHEAT, LLC*, 35 F. Supp. 3d 968, 984 (N.D. Ill. 2014) (excluding portion of expert testimony about how accused product worked because expert never "us[ed] or test[ed] the [accused product]"); *Hoffman v. Ford Motor Co.*, 493 F. App'x 962, 975–76 (10th Cir. 2012) (finding expert testimony should have been excluded because expert did not show that tests performed on "similar buckles" under laboratory conditions were relevant to the actual buckle in the conditions of the accident at issue); *Phillips v. Am. Honda Motor Co.*, 238 F. App'x 537, 540-42 (11th Cir. 2007) (affirming exclusion of expert testimony where expert failed to provide a "reliable link" between "dummy's foot" tested and "human foot" at issue); *Bogosian v. Mercedes-Benz of N.*

Am., Inc., 104 F.3d 472, 479 (1st Cir. 1997) (affirming exclusion of expert testimony because expert did not "attempt to replicate the known facts" of the event at issue).

B. Dr. Wurm Failed to Test the Claimed Invention

In addition to failing to test the HyClone powders, Dr. Wurm also admittedly failed to test media made according to the precise ingredient and concentration recipe of claim 1:

> Q. Dr. Wurm, you did not make a replica of just the ingredients recited in claim one and test that, correct?
> A. I did not make a replica exactly like claim one. I agree.

Ex. 2 (Wurm Dep.) at 167:15–21 (objection omitted).

Rather than make replicas of the accused products and compare them to media made according to asserted claim 1, as discussed above, Dr. Wurm made "variants" of the purported replicas (which are defective for the reasons already discussed). *See supra*, at Part I.C. He then ran performance tests on the purported replicas and the variants, and compared them to one another. *Id.*; Ex. 2 (Wurm Dep.) at 108:13-18. Each of the variants of the purported replicas, however, as discussed above, contained eleven or twelve ingredients in concentrations outside the ranges of claim 1. *See supra*, at Part I.C. In addition to these eleven or twelve concentrations outside the specific ranges recited in claim 1, each variant also included 29 ingredients that are altogether absent from claim 1. *Id.*; Ex. 2 (Wurm Dep.) at 270:2–271:10; Ex. 1 (Butler Dep.) at 231:5–18. The 29 additional unclaimed ingredients are compounds that HyClone includes in the accused products, which make up approximately one third of the composition of the HyClone products by number of ingredients. Ex. 2 (Wurm Dep.) at 270:2–22; Ex. 1 (Butler Dep.) at 230:10–231:14. The variants also included the five extra ingredients not found in the accused HyClone powders and not required by the claims.

The comparisons Dr. Wurm carried out are summarized in the charts below, the top chart showing what Dr. Wurm compared for the accused HyClone growth powder and the bottom chart showing what Dr. Wurm compared for the accused HyClone production powder:

Purported Replica of Accused Growth Product	**Variants of Purported Replica** of Accused Growth Product
• Contains ingredients and concentrations according to accused product specification, including 29 ingredients not in claim 1 • Includes 5 ingredients not present in accused HyClone powder • Omits one ingredient in accused HyClone powder	• Contain ingredients and concentrations according to accused product specification, including 29 ingredients not in claim 1 • Include 5 ingredients not present in accused product HyClone powder • Omit one ingredient in accused HyClone powder • Contain 12 ingredient concentrations outside of claim 1

Purported Replica of Accused Production Product	**Variants of Purported Replica** of Accused Production Product
• Contains ingredients and concentrations according to accused product specification, including 29 ingredients not in claim 1 • Includes 5 ingredients not present in accused HyClone powder	• Contains ingredients and concentrations according to accused product specification, including 29 ingredients not in claim 1 • Includes 5 ingredients not present in accused HyClone powder • Contain 11 ingredient concentrations outside of claim 1

It is undisputed that the 29 ingredients Dr. Wurm included in his variants "could contribute even substantially to the ability of the … media to grow and divide cells." Ex. 1 (Butler Dep.) at 231:15–18; Ex. 4 (Glacken Reb. Rep.) at ¶¶ 192–93. For instance, some of the 29 ingredients might mask any difference that would otherwise have appeared from the concentration differences Dr. Wurm was testing. Dr. Butler conceded "without doing the experiment," he could not know "[h]ow many of those 29 ingredients had overlapping functions with the 52 required ingredients from Claim 1." Ex. 1 (Butler Dep.) at 236:3–11. Dr. Wurm admitted this too. Ex. 2 (Wurm Dep.) at 271:17–23.

Similarly, neither expert had any idea how the extra 29 ingredients impacted the overall results. When asked, "[w]ould the cell density results that Dr. Wurm achieved be more or less than 50% of what he achieved if you took those 29 ingredients back out?" Dr. Butler stated, "I don't know." Ex. 1 (Butler Dep.) at 232:13–20; *see also id*. at 231:5–18. Dr. Butler also did not know "what percentage of the cell viability results that Dr. Wurm achieved" "are attributable to those 29 ingredients," and could not say "whether it's higher or lower than 25%" or even "50%" without "actually doing the experiments." *Id.* at 236:21–238:8. He gave the same answer with respect to the impact of the 29 additional ingredients on antibody titer. *Id.* at 238:9–21.

Ultimately, and critically, Dr. Wurm admitted that his testing amounted to examining the legally irrelevant question of whether one medium that does *not* meet the requirements of claim 1 is insubstantially different from other media that also do *not* meet the requirements of claim 1:

> Q. So you measured the -- you compared the performance of one media that does not literally infringe against the performance of another media that does not literally infringe?
> A. Yeah. You used the word "literally," right?
> Q. Yeah.
> A. Yeah, that's correct.
> Q. And the same is true for CPM?
> A. Same is true for CPM, yeah.

Ex. 2 (Wurm Dep.) at 170:13–23 (objection omitted). The tests therefore fail to perform the requisite comparison of the accused product "with the claims of the patent." *Zenith Labs.*, 19 F.3d at 1423; *AquaTex Indus.*, 479 F.3d at 1326. The flawed tests cannot constitute legally cognizable evidence of infringement, and the test results and any discussion of or opinions related to the tests must be excluded. *Insta-Foam*, 906 F.2d at 702; *Abbott Labs. v. Torpharm, Inc.*, No. 97-7515, 2003 WL 22462614, at *22–23 (N.D. Ill. Oct. 29, 2003) (excluding "evidence comparing TorPharm's proposed product to Abbott's commercial product and the product made by following the Example 1 methodology set forth in Abbott's patents") (citing *Zenith Labs*., 19

F.3d 1423); *Not Dead Yet Mfg., Inc. v. Pride Sols., LLC*, No. 13-3418, 2016 WL 6948373, at *4 (N.D. Ill. Nov. 28, 2016) (excluding expert opinions that improperly considered unclaimed element in DOE analysis, and which were "based on a comparison of the accused products to a preferred embodiment of the patent") (citing *Insta-Foam*, 906 F.2d at 702).

Both Drs. Wurm and Butler testified that the DOE can only be evaluated in this case by performing testing. In Dr. Wurm's opinion, to determine alleged equivalence, "we always need some type of test." Ex. 2 (Wurm Dep.) at 274:8–275:19. Dr. Butler testified that he "relied on," and agreed he "would have to rely on" testing in order to "reach [his] ultimate opinion." Ex. 1 (Butler Dep.) at 101:12–102:6. However, the test must be of the legally appropriate comparison, which did not occur here. Exclusion of information or opinions concerning Dr. Wurm's tests will leave Janssen without expert opinions regarding alleged infringement under the DOE.

V. Conclusion

Defendants' *Daubert* motion should be granted for two independent reasons. First, the opinions of Drs. Wurm and Butler that the accused products infringe the asserted claims under the DOE apply a legally incorrect analysis that vitiates required claim elements, and cannot, as a matter of law, assist the trier of fact. Second, any opinions from Dr. Wurm or Dr. Butler related to the testing performed by Dr. Wurm should be excluded for the independent reason that Dr. Wurm's tests failed to compare the accused product to the asserted claims. For both these reasons, Drs. Wurm and Butler's opinions are legally incorrect and irrelevant and cannot assist the trier of fact in resolving the question of alleged infringement.

Dated: January 3, 2017

Respectfully submitted,

Celltrion Healthcare Co., Ltd., Celltrion, Inc. and Hospira Inc.

By their attorneys,

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CERTIFICATE OF SERVICE

I, Andrea L. Martin, hereby certify that this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper copies will be sent to those indicated as non-registered participants on January 3, 2017.

/s/Andrea L. Martin, Esq.
Andrea L. Martin, Esq.

APPENDIX A

Table 1: Literal Differences Between Claim 1 And The HyClone Powders

'083 Patent Claim 1		**CGM**	**CPM**
Ingredient	**Amount (per liter)**	**Amount (per liter)**	**Amount (per liter)**
NaCl	5000-7500 mg	[redacted]	[redacted]
$NaH_2PO_4.H_2O$	30-100 mg	[redacted]	[redacted]
Na_2HPO_4	30-100 mg	[redacted]	[redacted]
$CuSO_4.5H_2O$	0.001-0.005 mg	[redacted]	[redacted]
$CoCl_2.6H_2O$	0.001-0.10 mg	[redacted]	[redacted]
$(NH_4)_6Mo_7O_{24}.4H_2O$	0.001-0.005 mg	[redacted]	[redacted]
$NiSO_4.6H_2O$	0.000025-0.0005 mg	[redacted]	[redacted]
$SnCl_2.2H_2O$	0.000025-0.0005 mg	[redacted]	[redacted]
NH_4VO_3	0.0001-0.0025 mg	[redacted]	[redacted]
L-arginine.HCl	200-5000 mg	[redacted]	[redacted]
L-asparagine.HCl	40-250 mg	[redacted]	[redacted]
L-histidine.HCl.H_2O	100-500 mg	[redacted]	[redacted]
L-methionine	50-500 mg	[redacted]	[redacted]
L-valine	100-1000 mg	[redacted]	[redacted]

Table 2: Exemplary Ingredients Present In CPM In Amounts Less Than The Claimed Concentration Ranges

Elements of '083 Patent		Amount in CPM	% of the Lower Limit of the Claim
1	$CoCl_2.6H_2O$ 0.001-0.10 mg	[redacted]	[redacted]
2	$SnCl_2.2H_2O$ 0.000025-0.0005 mg	[redacted]	[redacted]
3	L-arginine.HCl 200-5000 mg	[redacted]	[redacted]
4	L-histidine.HCl.H_2O 100-500 mg	[redacted]	[redacted]
5	L-asparagine.HCl 40-250 mg	[redacted]	[redacted]

Table 3: Exemplary Ingredients Present In CPM In Amounts Greater Than The Claimed Concentration Ranges

Elements of '083 Patent		Amount in CPM	% of the Upper Limit of the Claim
1	Na_2HPO_4 30-100 mg	[redacted]	[redacted]
2	$NaH_2PO_4.H_2O$ 30-100 mg	[redacted]	[redacted]
3	$NiSO_4.6H_2O$ 0.000025-0.0005 mg	[redacted]	[redacted]

Table 4: Exemplary Ingredients Present In CGM In Amounts Less Than The Claimed Concentration Ranges

Elements of '083 Patent		Amount in CGM	% of the Lower Limit of the Claim
1	NH_4VO_3 0.0001-0.0025 mg	[redacted]	[redacted]
2	$CoCl_2.6H_2O$ 0.001-0.10 mg	[redacted]	[redacted]
3	$SnCl_2.2H_2O$ 0.000025-0.0005 mg	[redacted]	[redacted]
4	L-arginine.HCl 200-5000 mg	[redacted]	[redacted]
5	L-histidine.HCl.H_2O 100-500 mg	[redacted]	[redacted]
6	L-asparagine.HCl 40-250 mg	[redacted]	[redacted]

Table 5: Exemplary Ingredients Present In CGM In Amounts Greater Than The Claimed Concentration Ranges

Elements of '083 Patent		Amount in CGM	% of the Upper Limit of the Claim
1	Na_2HPO_4 30-100 mg	[redacted]	[redacted]
2	$NaH_2PO_4.H_2O$ 30-100 mg	[redacted]	[redacted]
3	$NiSO_4.6H_2O$ 0.000025-0.0005 mg	[redacted]	[redacted]

EXHIBIT 1

REDACTED IN ITS ENTIRETY

EXHIBIT 2

REDACTED IN ITS ENTIRETY

EXHIBIT 3

REDACTED IN ITS ENTIRETY

EXHIBIT 4

REDACTED IN ITS ENTIRETY

EXHIBIT 5

REDACTED IN ITS ENTIRETY

EXHIBIT 6

REDACTED IN ITS ENTIRETY