UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

INSTITUTE FOR FISHERIES RESOURCES, et al.,

Plaintiffs,

v.

STEPHEN HAHN, et al.,

Defendants.

Case No. 16-cv-01574-VC

ORDER GRANTING IN PART AND DENYING IN PART DEFENDANTS' MOTION FOR JUDGMENT ON THE PLEADINGS; DENYING PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Re: Dkt. Nos. 145, 198

The Food and Drug Administration has concluded that its authority to regulate drugs includes the authority to regulate the material used to modify an animal's genetic makeup. Pursuant to that asserted authority, the FDA approved a company's application to create, through genetic manipulation, a type of salmon that grows to mature size more quickly than normal. As a condition of approval, the FDA imposed restrictions on how and where the salmon are grown, to reduce the risk that the engineered salmon will mix with normal salmon.

The FDA's approval of the salmon has drawn a lawsuit by a coalition of environmental and industry groups. The lawsuit is both a broadside attack on the FDA's authority to regulate the genetic engineering of animals and a targeted attack on the particular process by which the agency approved the salmon. Presently, the Court has been asked to address the broadside attack. For the most part, the parties have left for a later date the adjudication of specific claims relating to the salmon approval.

The plaintiffs' broadside attack has a head-scratching element to it. Although they insist the FDA lacks the authority to regulate the genetic engineering of animals, the plaintiffs have not

explained how this conduct can otherwise be regulated under current law. It thus appears that their argument, if successful, would create a regulatory void in which companies would be free to genetically engineer animals without meaningful regulatory oversight (at least unless Congress were able to agree on legislation restricting genetic engineering of animals). But even without considering these consequences, the FDA's assertion of authority is valid. Under the plain language of the Food, Drug, and Cosmetic Act, the FDA has the authority to require companies to seek its approval before creating and breeding genetically engineered animals. Perhaps the genetic material used to modify an animal does not seem like a "drug" in the colloquial sense, but it is the statutory definition that matters. The statutory definition of "drug" is far broader than the ordinary meaning of that word, and the modification of an animal's genetic makeup falls squarely within the statutory definition.

Because the FDA possesses the authority to regulate this conduct, and for the additional reasons set forth in this ruling, the government largely prevails in this round of the litigation. A hearing will take place in May 2020 on the second round, which involves the question whether the agency's approval of the genetically engineered salmon was faulty, even if its general assertion of jurisdiction over genetic engineering is lawful.

I

To genetically engineer an animal, a scientist first derives a sequence of recombinant DNA, known in this field as an rDNA construct. This construct can encode and represent a specific trait. Next, the rDNA construct is integrated into the genome of an animal. In essence, the presence of the construct will cause the animal to express the sought-after trait. And the rDNA construct can be heritable, meaning that the animal will pass the trait to its progeny. Take the following real-world example: If a scientist wants to engineer a fish that glows under certain kinds of light, they would first derive an rDNA construct that represents the trait of glowing under those kinds of light, and then they would integrate the construct into the genome of a fish. Now the scientist has a glowing fish, as well as the ability to breed a whole line of glowing fish.

The FDA regulates certain rDNA constructs on the theory that they are "drugs" under the

Food, Drug, and Cosmetic Act (FDCA). The FDA first signed off on the use of an rDNA construct to genetically engineer an animal in 2009. That construct, when integrated into a goat's genome, causes the goat to produce an anticoagulant in its milk, which in turn is used to produce a medication that prevents certain people from getting blood clots. 21 C.F.R. § 528.1070. The FDA next approved an application for an rDNA construct intended to produce chickens whose egg whites contain a protein that treats a rare enzyme disorder. § 528.2010. And just this year, the FDA greenlit an rDNA construct that causes rabbits to produce milk capable of treating hemophilia. § 528.1080. The FDA has also declined, in an exercise of its enforcement discretion, to regulate the genetic engineering of some animals, including the glow fish mentioned above. *See International Center for Technology Assessment v. Thompson*, 421 F. Supp. 2d 1, 5 (D.D.C. 2006).

AquaBounty Technologies, Inc. employed a similar technique to create salmon with an abnormally high growth rate. To create its rDNA construct, AquaBounty derived genetic material from a Pacific Chinook salmon and from an ocean pout (which is another type of fish). AquaBounty integrated that rDNA construct into the genome of an Atlantic salmon to produce a line of fish that apparently grow to full size in roughly half the standard time. The commercial moniker for AquaBounty's genetically engineered fish is the AquAdvantage salmon.

In November 2015, the FDA granted AquaBounty's application for approval of this rDNA construct as a new animal drug. In technical terms, the FDA approved the use of "[a] single copy of the α-form of the opAFP-GHc2 recombinant deoxyribonucleic acid (rDNA) construct at the α-locus in the EO-1 α lineage of triploid, hemizygous, all-female Atlantic salmon (Salmo salar)." 21 C.F.R. § 528.1092(a). The regulation memorializing the FDA's approval limits the production of these fish to "physically-contained, freshwater culture facilities specified in an FDA-approved application." § 528.1092(d).

From a regulatory standpoint, the AquAdvantage salmon present somewhat different issues from the goats, chickens, and rabbits mentioned above. Those other animals are engineered to produce something that becomes an ingredient in a drug to be taken by human

beings. The FDA's drug authority is exercised at the front end (when the rDNA construct is used on the animal) and the back end (when the animal's byproduct is turned into a drug for people). The salmon, on the other hand, merely become food to be consumed by people. AquaBounty's application represents the FDA's first approval of the use of an rDNA construct to develop genetically engineered animals destined for the kitchen table.

In its initial approval, the FDA mandated a production process whereby AquaBounty produced eggs in Canada on Prince Edward Island and grew the eggs into mature fish inside freshwater tanks in Panama. Application AR 23116. The FDA also imposed various conditions of use (including agency inspections) to ensure that the AquAdvantage salmon are sterile and cannot escape into the wild. Application AR 23117–19. At present, with the FDA's permission, AquaBounty is raising the salmon in landlocked, freshwater tanks in Indiana. *See* Statement of FDA Commissioner Scott Gottlieb, *Continued Efforts to Advance Safe Biotechnology Innovations, and the Deactivation of an Import Alert on Genetically Engineered Salmon* (Apr. 8, 2019), https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-continued-efforts-advance-safe-biotechnology. The Department of Agriculture recently finalized labeling standards for the AquAdvantage salmon that carry an implementation date of January 1, 2020. National Bioengineered Food Disclosure Standard, 83 Fed. Reg. 65,814 (Dec. 21, 2018); *see* 7 C.F.R. §§ 66.6, 66.13. The first harvest of AquAdvantage salmon is planned for late 2020, so filets of these genetically engineered salmon could be sold for consumption in the United States not long after.

A coalition of environmental and industry groups, believing the FDA's approval of AquAdvantage salmon to be unlawful, brought this lawsuit against the FDA and its Commissioner, as well as the Secretary of Health and Human Services and the Fish and Wildlife Service.[1] At a ten-thousand-foot level, the plaintiffs contend that: (i) the FDA lacks the authority

[1] The plaintiffs in this case are the Institute for Fisheries Resources, the Pacific Coast Federation of Fishermen's Associations, the Golden Gate Salmon Association, Kennebec Reborn, Friends of Merrymeeting Bay, Cascadia Wildlands, the Center for Biological Diversity, the Ecology Action Centre, Friends of the Earth, Food and Water Watch, the Quinault Indian Nation, and the Center

to regulate rDNA constructs as drugs; and (ii) the agency has not adequately evaluated the environmental risks posed by genetically engineered animals in general, or by the AquAdvantage salmon in particular. AquaBounty intervened as a defendant to protect its interests in the litigation.

This lawsuit has been divided into two stages. In the current stage, the Court has been asked to adjudicate four claims. Two of those claims challenge a document in which the FDA explained its authority to regulate genetically engineered animals. As explained in Section II, however, the document does not reflect "final agency action" and therefore is not subject to judicial review. Another claim seeks to set aside approval of the AquAdvantage salmon on the ground that the FDA lacks statutory authority to regulate genetically engineered animals. As explained in Section III, the government prevails on this claim, because the plain language of the FDCA authorizes the FDA to require approval of genetically engineered animals and impose conditions on their use. Finally, the plaintiffs contend that the genetically engineered salmon are dangerous to the environment, and that the FDCA precludes the FDA from approving drugs that are not environmentally safe. As discussed in Section IV, adjudication of this claim will be deferred to the next stage of the case. This claim raises several questions that the parties have not adequately addressed, and in any event these arguments are better considered in the context of the plaintiffs' other targeted challenges to the AquAdvantage salmon approval.

II

To explain the basis for its prior assertions of regulatory authority over the creation of genetically engineered animals, the FDA issued a guidance document. This document, which is called "Guidance for Industry 187," announces and outlines the FDA's understanding of how the FDCA and its implementing regulations apply to the process of genetically engineering animals. Claim 8 of the plaintiffs' lawsuit alleges that the FDA should have prepared, in connection with

for Food Safety. Commissioner Stephen Hahn and Secretary Alex Azar have since substituted as defendants in their official capacity for the officials that exercised those powers when the lawsuit was filed. *See* Fed. R. Civ. P. 25(d).

the guidance document, a programmatic environmental impact statement pursuant to the National Environmental Policy Act (NEPA). *See* 40 C.F.R. § 1502.4. Claim 13 targets the FDA's decision not to make the guidance document available in accordance with the notice-and-comment procedures of the Administrative Procedure Act (APA). *See* 5 U.S.C. § 553.

Through the FDA Modernization Act of 1997, Congress authorized the FDA to issue guidance documents. Pub. L. No. 105-115, § 405, 111 Stat. 2296, 2368–69 (codified as amended at 21 U.S.C. § 371(h)). That Act empowers the FDA to "develop guidance documents with public participation," subject to the limitation that such guidance documents "shall not create or confer any rights for or on any person." 21 U.S.C. § 371(h)(1)(A). Consistent with the public-participation requirement, the FDA posted notice of a draft version of the guidance document relating to genetically engineered animals, and the agency finalized the document only after the period for public comment had passed. 73 Fed. Reg. 54,407 (Sept. 19, 2008); 74 Fed. Reg. 3,057 (Jan. 16, 2009).[2]

In the guidance document, the FDA defines genetically engineered animals as "those animals modified by rDNA techniques, including the entire lineage of animals that contain the modification." AR 569.[3] The FDCA provides multiple definitions of the term "drug," but the foothold for the FDA's assertion of authority is the phrase "articles (other than food) intended to affect the structure or any function of the body of man or other animals." 21 U.S.C. § 321(g)(1)(C). According to the guidance document, an "rDNA construct in a GE animal that is intended to affect the structure or function of the body of a GE animal" qualifies as a drug under this provision. AR 572.

The guidance document then addresses the steps an applicant must take to secure FDA approval of an rDNA construct. AR 578–91. To that end, the document canvasses the existing statutory and regulatory requirements for new animal drugs. *See* 21 U.S.C. § 360b; 21 C.F.R.

[2] The guidance document was revised without material change in 2015.
[3] For purposes of this order, "AR" when standing alone refers to the administrative record for Guidance for Industry 187. This order also cites the administrative records for AquaBounty's new-animal-drug application and a 2001 citizen petition.

§ 514.1. In the document, the FDA acknowledged that the "application of some of the statutory and regulatory requirements for new animal drug applications to GE animals may not be obvious," but the FDA nonetheless concluded that these generally applicable provisions can sensibly be used in this context. AR 579. The same day it adopted the guidance document, the FDA denied a citizen petition requesting rulemaking tailored to genetically engineered animals on the ground "that it already has a comprehensive regulatory framework in place." Citizen Petition AR 806 (internal quotation marks omitted).

Judicial review under the APA extends to "[a]gency action made reviewable by statute and final agency action for which there is no other adequate remedy in a court." 5 U.S.C. § 704. Section 704 reflects a congressional policy against premature judicial intervention into the administrative process, and in favor of courts resolving only disputes with concrete legal stakes. In *Bennett v. Spear*, 520 U.S. 154 (1997), the Supreme Court identified the two hallmarks of final agency action: "First, the action must mark the consummation of the agency's decisionmaking process—it must not be of a merely tentative or interlocutory nature. And second, the action must be one by which rights or obligations have been determined, or from which legal consequences will flow." *Id.* at 177–78 (internal quotation marks and citation omitted). An action that "carries no direct consequences" and serves "more like a tentative recommendation than a final and binding determination" is not reviewable under the APA. *Franklin v. Massachusetts*, 505 U.S. 788, 798 (1992).

The guidance document contains two primary parts: (i) the FDA's interpretation of the term "drug" as including the use of an rDNA construct to create a genetically engineered animal; and (ii) recommendations to applicants regarding the approval process for new animal drugs. The two-step test for finality applies on an issue-by-issue basis. *See Navajo Nation v. U.S. Department of Interior*, 819 F.3d 1084, 1091 (9th Cir. 2016). In theory, then, both parts, one part, or neither part of the guidance document could be final agency action reviewable under the APA.

As the D.C. Circuit recently noted, when a guidance document is challenged under the

APA, "the finality inquiry is often framed as the question of whether the challenged action is best understood as a non-binding action, like a policy statement or interpretive rule, or a binding legislative rule." *Association of Flight Attendants-CWA, AFL-CIO v. Huerta*, 785 F.3d 710, 716 (D.C. Cir. 2015). The plaintiffs argue that the guidance document is a legislative rule; on that basis (and only on that basis), they contend that the guidance document is final agency action. The Ninth Circuit holds that "a rule has the 'force of law' and is therefore legislative: (1) when, in the absence of the rule, there would not be an adequate legislative basis for enforcement action; (2) when the agency has explicitly invoked its general legislative authority; or (3) when the rule effectively amends a prior legislative rule." *Wilson v. Lynch*, 835 F.3d 1083, 1099 (9th Cir. 2016) (internal quotation marks omitted).

The guidance document fits none of the three categories of legislative rules, so it cannot be considered final agency action based on the argument put forth by the plaintiffs. First, as will be explained in Section III, the statutory drug definition furnishes an adequate legislative basis to consider new-animal-drug applications related to genetically engineered animals. *Cf. Hemp Industries Association v. DEA*, 33 F.3d 1082, 1090 (9th Cir. 2003).[4] Second, the FDA disavowed resort to its legislative authority to issue the guidance document. AR 571. And third, the guidance document's recommendations to applicants don't effectively amend any legislative rules. The only supposed amendment identified by the plaintiffs is the FDA's suggestion that applicants place "animal care and safety information (e.g., husbandry or containment)," when relevant, on the drug's label. AR 581. That recommendation is consistent with the existing regulatory requirement that the applicant's proposed label include "adequate directions for use" of the new animal drug. 21 C.F.R. § 514.1(b)(3)(ii)–(iii).

Thus, the guidance document is best characterized not as a legislative rule (as the plaintiffs insist) but instead as an interpretive rule addressing the drug definition and a policy

[4] In any event, if the plaintiffs were to prevail on their statutory argument, the guidance document would be an invalid interpretive rule, not a disguised legislative rule. *See Perez v. Mortgage Bankers Association*, 575 U.S. 92, 103 (2015).

statement with respect to the new-animal-drug application process. But while identifying the type of agency action at issue is relevant to the finality inquiry, this label does not dictate whether the challenged agency action is final for purposes of APA review. Interpretive rules and policy statements, under the right circumstances, can be final agency action too. To answer the question posed by 5 U.S.C. § 704, one still must apply the two-part test identified by the Supreme Court in *Bennett*: Does the action mark the consummation of the agency's decisionmaking process, and if so, is the action one that determines legal rights or obligations?

With respect to the portion of the guidance document in which the FDA concludes that an rDNA construct can be a "drug," the first step of the *Bennett* test is satisfied. The guidance document brings the agency's decisionmaking process to a close on that issue. *Bennett*, 520 U.S. at 177–78. Without any reservations, the document announces that rDNA constructs can satisfy the FDCA's drug definition. AR 572. The FDA also dismissed a petition for rulemaking related to genetically engineered animals, thereby implying that the issue was "not subject to further Agency review." *Sackett v. EPA*, 566 U.S. 120, 127 (2012). Thus, the FDA "for all practical purposes has ruled definitively" on its interpretation of the statute. *U.S. Army Corps of Engineers v. Hawkes Co.*, 136 S. Ct. 1807, 1814 (2016) (internal quotation marks omitted).

But the FDA's interpretation doesn't satisfy the second requirement of "direct and appreciable legal consequences." *Bennett*, 520 U.S. at 178. To begin with, interpretive rules do not apply with the "force and effect of law" to the parties who appear before the agency, for "it is the court that ultimately decides whether a given [statute or] regulation means what the agency says." *Perez v. Mortgage Bankers Association*, 575 U.S. 92, 103–04 & n.4 (2015); *see generally Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984); *Kisor v. Wilkie*, 139 S. Ct. 2400 (2019). Of course, judicial review of the validity of an agency's interpretation is almost always available once the agency relies on an interpretive rule during a proceeding that impacts legal rights or obligations. *See PDR Network, LLC v. Carlton & Harris Chiropractic, Inc.*, 139 S. Ct. 2051, 2060–61 (2019) (Kavanaugh, J., concurring in the judgment). But the announcement of an interpretive rule doesn't open the courtroom doors to

any person who disagrees with the agency's interpretation.

The exception is that the agency's interpretation is reviewable under the APA if it gives rise to "a direct and immediate effect on the complaining parties" or "requires immediate compliance with its terms." *Association of American Medical Colleges v. United States*, 217 F.3d 770, 780 (9th Cir. 2000). For example, in *Abbott Laboratories v. Gardner*, 387 U.S. 136 (1967), the Supreme Court concluded that an interpretive rule was final agency action based on "direct effect on the day-to-day operations" of the regulated party, which risked "serious criminal and civil penalties" unless it complied with the agency's interpretation. *Id.* at 152–53. Put another way, "legal consequences flow from" the interpretation for the party who must take immediate steps to avoid a penalty, even if the agency hasn't formally altered anyone's legal rights. *Sackett*, 566 U.S. at 126 (internal quotation marks and alteration omitted).

But the guidance document's interpretation of the term "drug" does not fall within this line of cases, at least as applied to the plaintiffs here. The FDA did not "command" the plaintiffs—organizations that do not wish to use, market, or distribute rDNA constructs—"to do or forbear from anything." *Fairbanks North Star Borough v. U.S. Army Corps of Engineers*, 543 F.3d 586, 593 (9th Cir. 2008). Nor have the plaintiffs attempted to show that the shadow cast by the guidance document forced regulated parties like AquaBounty to submit to the FDA's new-animal-drug application process.[5] What's more, the plaintiffs are receiving judicial review of the FDA's interpretation as applied in the context of AquaBounty's application. *See* Section III. There, "the scope of the controversy has been reduced to more manageable proportions, and its factual components fleshed out, by some concrete action applying the [statute]." *Lujan v. National Wildlife Federation*, 497 U.S. 871, 891 (1990).

As mentioned earlier, even if the guidance document's interpretation of the term "drug" does not constitute final agency action, separate analysis is required for the aspect of the

[5] In any event, it is doubtful that the plaintiffs could establish finality by pointing to someone else who is coerced by an interpretive rule. *See Lujan v. National Wildlife Federation*, 497 U.S. 871, 891 (1990) (stating that agency action is "ripe" for review if the challenged rule "as a practical matter requires the *plaintiff* to adjust his conduct immediately") (emphasis added).

document's recommendations regarding the application process. But it is even more clear that this aspect of the document is not final agency action—it doesn't even clear the first *Bennett* hurdle. This section of the guidance document is deliberately open ended and tentative; it purports only to "describe the Agency's current thinking on a topic and should be viewed only as recommendations." AR 571. As yet another disclaimer, the FDA shared its "inten[t] to issue additional guidance to describe more fully how various components of the New Animal Drug provisions of the Act apply to biopharm animals." AR 570. And this section of the guidance document is couched in precatory language and "riddled with caveats"—signals that the FDA had just begun its decisionmaking process. *Association of Flight Attendants*, 785 F.3d at 717.

The FDA's discussion of the application process does not satisfy the second *Bennett* requirement either. Just as the guidance document is not a legislative rule under the Ninth Circuit's test, the recommendations to applicants do not alter or contradict existing regulations. The requirements that govern the application process for new animal drugs (including rDNA constructs) are established by 21 U.S.C. § 360b and further expounded upon in 21 C.F.R. Part 514. The FDA has suggested strategies for producers of a new type of animal drug to successfully navigate the existing process, but it has not foreclosed alternative approaches. *See Independent Equipment Dealers Association v. EPA*, 372 F.3d 420, 427 (D.C. Cir. 2004). In short, the guidance document's description of the application process is "purely advisory and in no way affected the legal rights of the relevant actors." *Bennett*, 520 U.S. at 178.[6]

In this circuit, federal courts lack jurisdiction over APA claims that do not challenge final agency action within the meaning of 5 U.S.C. § 704. *Gallo Cattle Co. v. USDA*, 159 F.3d 1194, 1198–99 (9th Cir. 1998). Claims 8 and 13 are therefore dismissed for lack of jurisdiction, and the remaining claims in the lawsuit may be considered only as they relate to the FDA's approval of

[6] The sole remaining component of the guidance document is a statement of the FDA's intention not to institute enforcement proceedings for two categories of genetically engineered animals unless there are safety concerns. AR 573. A forward-looking statement of enforcement priorities is not final agency action. *See Association of Flight Attendants*, 785 F.3d at 716. For that matter, how the FDA *actually* exercises its enforcement discretion is mostly unreviewable in court. *Heckler v. Chaney*, 470 U.S. 821, 835 (1985).

AquaBounty's application.[7]

III

Claim 1 raises the existential question at the heart of this case: Can the FDA regulate the integration of an rDNA construct into an animal's genome under its drug authority?

The FDCA defines the term "drug" to mean:

> (A) articles recognized in the official United States Pharmacopœia, official Homœopathic Pharmacopœia of the United States, or official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any articles specified in clause (A), (B), or (C).

21 U.S.C. § 321(g)(1). As the government interprets this provision, AquaBounty's rDNA construct qualifies under the third of these four definitions. Specifically, the government contends that an rDNA construct, when integrated into an animal's genome, is an "article[ ] (other than food) intended to affect the structure or any function of the body" of that animal. § 321(g)(1)(C).

The text of the FDCA settles this dispute: AquaBounty's rDNA construct is a drug under the plain language of the statute. The definition in section 321(g)(1)(C) can be broken down into two elements: (1) an article (other than food) (2) that is intended to affect the structure and

[7] Section 704 lacks the "clear statement" necessary to be a jurisdictional rule in its own right. *Sebelius v. Auburn Regional Medical Center*, 568 U.S. 145, 153–54 (2013); *see Vietnam Veterans of America v. Shinseki*, 599 F.3d 654, 661 (D.C. Cir. 2010). To accord it jurisdictional effect, the Ninth Circuit reasoned that section 704 conditions the APA's waiver of sovereign immunity in section 702. *Tucson Airport Authority v. General Dynamics Corp.*, 136 F.3d 641, 645 (9th Cir. 1998). There is some reason to suspect that the Ninth Circuit's holding on this issue is incorrect. Of course, "the power to withdraw the privilege of suing the United States or its instrumentalities knows no limitations." *Maricopa County v. Valley National Bank of Phoenix*, 318 U.S. 357, 362 (1943). But Congress directed that an APA suit *not* be dismissed on grounds of sovereign immunity unless the plaintiff seeks "money damages" or another statute "expressly or impliedly forbids the relief which is sought." 5 U.S.C. § 702. A provision that refers to the reviewability of final agency action (but not to sovereigns or immunity) is an unlikely candidate to partially restore sovereign immunity. *See Patchak v. Zinke*, 138 S. Ct. 897, 921–22 (2018) (Roberts, C.J., dissenting). Yet when (as here) the government raises section 704 in a timely manner, there's no practical difference to adding a gratuitous jurisdictional label. *See Morrison v. National Australia Bank, Ltd.*, 561 U.S. 247, 254 (2010).

function of an animal. The discrete and identifiable rDNA construct is an "article," which "is just 'a particular thing.'" *Samsung Electronics Co. v. Apple Inc.*, 137 S. Ct. 429, 434–35 (2016). The article of genetic material is not "food," which is defined "as articles used for food or drink for man or other animals," or "used for components of any such article." 21 U.S.C. § 321(f). And that article is intended to affect the structure and function of the Atlantic salmon by stimulating faster growth. Therefore, the rDNA construct in this case is a "drug" and (with an added layer of precision) a "new animal drug"—that is, "any drug intended for use for animals other than man." § 321(v).

The plaintiffs make several arguments against the conclusion that the rDNA construct falls within the plain meaning of an "article" that is "intended to affect the structure and function of an animal." First, they emphasize that genetic material derived for the purpose of modifying an animal's genome does not match the ordinary dictionary definition of the word "drug." In their view, the FDA "shoehorn[ed] an entire regulatory scheme" for genetically engineered animals "into a single unambiguous word" (*i.e.*, drug) that is most naturally associated with medical treatment. *Gulf Fishermens Association v. National Marine Fisheries Service*, 341 F. Supp. 3d 632, 642 (E.D. La. 2018). The plaintiffs further urge that the government's interpretation runs afoul of the principle that Congress "does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions"—or (as the refrain goes) "hide elephants in mouseholes." *Whitman v. American Trucking Associations*, 531 U.S. 457, 468 (2001).

The plaintiffs' appeal to ordinary meaning is misplaced here. Under settled principles of statutory interpretation, courts must follow an explicit definition "even if it varies from a term's ordinary meaning." *Digital Realty Trust, Inc. v. Somers*, 138 S. Ct. 767, 776 (2018). "Drug" is a defined term under the FDCA, and this definition is broad and dynamic by design, not by linguistic oversight. As the Supreme Court has long recognized, "the word 'drug' is a term of art for purposes of the Act, encompassing far more than the strict medical definition of that word." *United States v. Article of Drug . . . Bacto-Unidisk*, 394 U.S. 784, 793 (1969); *see United States*

v. Regenerative Sciences, LLC, 741 F.3d 1314, 1319 (D.C. Cir. 2014). It's true that a mismatch between a word's ordinary meaning and "the improbably broad reach of the key statutory term" can be evidence of ambiguity in the definition. *Bond v. United States*, 572 U.S. 844, 859–60 (2014). But for the FDCA's drug definition, "Congress fully intended that the Act's coverage be as broad as its literal language indicates." *Bacto-Unidisk*, 394 U.S. at 798. No doubt, the Congress that drafted the drug definition in 1938 could not have foreseen the advent of genetically engineered animals. Yet the question is not "whether the Congress that enacted the FDCA specifically intended the Act to cover" genetically engineered animals, for "it is ultimately the provisions of our laws rather than the principal concerns of our legislators by which we are governed." *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 147 (2000) (internal quotation marks omitted).

Relying on a legal treatise, the plaintiffs suggest that a literal interpretation of "articles (other than food) intended to affect the structure or any function of the body of man or other animals" would sweep in articles like bicycles. *See* Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* 228–29 (2012). So the ordinary meaning of "drug," they reason, must cut back on the scope of the statutory definition to avoid attributing to Congress this absurd result. *See Bond*, 572 U.S. at 861–62. That conclusion does not necessarily follow: Even when the statutory definition is accorded its literal breadth, the context of section 321(g) within the FDCA's framework plainly demonstrates that articles like exercise bikes and nail clippers aren't intended to affect the structure or function of people's bodies in the way that justifies FDA intervention. Here, that same statutory context supports the government's plain-language interpretation. Gene-editing techniques—whether used on humans or animals, for the plaintiffs' arguments would apply across the board—are of a piece with the general problem of public health that Congress sought to address with the FDCA. *Cf. Yates v. United States*, 574 U.S. 528, 535–37 (2015) (plurality opinion). The process of genetically engineering animals presents many of the same risks (as well as some additional ones) that led the Ninth Circuit to declare that courts "should avoid any construction [of the Act] which would result in the free marketing of

drugs which might well be unsafe." *United States v. Western Serum Co.*, 666 F.2d 335, 341 (9th Cir. 1982). And the rDNA construct's intended effect—the promotion of growth in salmon—is no different from other FDA-regulated growth hormone treatments for animals.

Beyond appealing to the common understanding of the word "drug," the plaintiffs contend that the two neighboring drug definitions in the statute cabin the meaning of "articles . . . intended to affect the structure or any function of the body of man or other animals" to articles that treat disease in a medical sense. 21 U.S.C. § 321(g)(1)(C). The statute deems articles recognized in certain official publications to be drugs, and it also defines the term "drug" to include "articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals." § 321(g)(1)(A)–(B). As the plaintiffs note, the interpretive canon known as *noscitur a sociis* "counsels lawyers reading statutes that a word may be known by the company it keeps." *Graham County Soil and Water Conservation District v. United States ex rel. Wilson*, 559 U.S. 280, 287 (2010) (internal quotation marks omitted). But the drug definition at issue here—articles with an intended effect on "the structure or any function of the body of man or other animals"—extends far beyond the traditional medical context to implement "the Act's overriding purpose to protect the public health." *Bacto-Unidisk*, 394 U.S. at 798. Congress thus made the "prudent" choice to provide successive definitions with "considerable overlap" yet distinct aims. *Lorenzo v. SEC*, 139 S. Ct. 1094, 1102 (2019).

The plaintiffs also invoke post-enactment legislation to contend that the FDCA forbids the FDA's foray into the regulation of genetically engineered animals. True, as the Supreme Court stated for this very statute, "subsequent acts can shape or focus" a statute's interpretation within "a range of plausible meanings." *Brown & Williamson*, 529 U.S. at 143. There, the Court held that the "plain implication of Congress' subsequent tobacco-specific legislation" was that the FDA could not regulate tobacco products either as a drug or a device. *Id.* at 160–61. *Brown & Williamson* in effect applied the "commonplace" interpretive rule "that the specific governs the general," especially when "Congress has enacted a comprehensive scheme and has deliberately targeted specific problems with specific solutions." *RadLAX Gateway Hotel, LLC v.*

Amalgamated Bank, 566 U.S. 639, 645 (2012) (internal quotation marks omitted). But no such alternative comprehensive scheme exists for genetically engineered animals, and the minimal legislation that exists on this subject operates from a background assumption of FDA authority. For starters, the abbreviated application process in 21 U.S.C. § 360b(n) is unavailable for new animal drugs that are "primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology, or other processes involving site specific genetic manipulation techniques." Generic Animal Drugs and Patent Term Restoration Act, Pub. L. No. 100-670, § 106, 102 Stat. 3971, 3984 (1988). The conditional-approval process likewise cannot be invoked for "a new animal drug that is contained in, or is a product of, a transgenic animal." 21 U.S.C. § 360ccc(a)(3)(A)(i).[8] The effect of both provisions is to funnel these applications into the FDA's full-length review procedures for new animal drugs. And finally, Congress has waived certain fees for animal-drug applications if "such application or submission involves the intentional genomic alteration of an animal that is intended to produce a drug, device, or biological product" subject to such fees. § 379j-12(d)(4)(B).[9] These statutes can be sensibly construed only if the FDA can consider new-animal-drug applications for rDNA constructs.[10]

Beyond these specific statutory interpretation arguments, the plaintiffs make a more general point about why the FDA, in their view, lacks the authority to regulate in the area of

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[8] Minor Use and Minor Species Animal Health Act of 2004, Pub. L. No. 108-282, § 102(b)(4), 118 Stat. 891, 893. A transgenic animal is defined as "an animal whose genome contains a nucleotide sequence that has been intentionally modified in vitro, *and the progeny of such an animal*," provided that the modification did not occur "solely by selective breeding." 21 U.S.C. § 360ccc(j) (emphasis added).

[9] Animal Drug and Animal Generic Drug User Fee Amendments of 2018, Pub. L. No. 115-234, § 103(c)(3), 132 Stat. 2427, 2430.

[10] It would be inappropriate to draw an inference of authority (as the government does) from two identical, unsuccessful bills introduced a week apart that would have explicitly prohibited the FDA from approving new animal drugs related to genetically engineered animals. *See* S. 230, 112th Cong. § 1 (2011); H.R. 521, 112th Cong. § 1 (2011). Compared to legislation that runs the Article I gauntlet of bicameralism and presentment, "failed legislative proposals are a particularly dangerous ground on which to rest an interpretation of a prior statute." *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers*, 531 U.S. 159, 170 (2001) (internal quotation marks and alteration omitted). The same holds true for the plaintiffs' reliance on letters signed by House and Senate members that reject the FDA's authority in this domain. *See Bruesewitz v. Wyeth LLC*, 562 U.S. 223, 242 (2011) ("Post-enactment legislative history (a contradiction in terms) is not a legitimate tool of statutory interpretation.").

genetically engineered animals. The plaintiffs' briefs repeatedly characterize the object of the FDA's attention as the animals themselves, as opposed to the rDNA construct that affects the animals. For example, the plaintiffs note that the FDA has not done much to regulate the process of introducing the rDNA construct into the salmon, while imposing detailed restrictions on the locations where and the conditions in which the salmon can be raised. The plaintiffs, having framed the issue this way, argue that animals cannot possibly be considered drugs, because the animals themselves are not intended to affect the "structure and function" of human beings.[11]

To be sure, the FDA has imposed restrictions, as a practical matter, on the salmon themselves (just as it has imposed restrictions on the other genetically engineered animals it has approved). *See, e.g.*, 21 C.F.R. § 528.2010(c)(2) (banning the genetically engineered chickens from the food and feed supply). The FDA, for instance, has required that the salmon be grown only in "physically-contained, freshwater culture facilities specified in an FDA-approved application" to mitigate the risk that the genetically engineered salmon will mix, compete, or breed with normal salmon. § 528.1092(d). But this limitation does not change the fact that the FDA is regulating the rDNA construct. The only practical way to regulate the construct—and the effects of the construct—is to regulate the salmon itself.

To illustrate the point, imagine a hypothetical drug that cures a fatal disease in people, but causes those people to become temporarily contagious with a more minor illness—say, mumps. And imagine the FDA approves the drug on the condition that patients be quarantined until they are no longer contagious with the mumps. Although the FDA is restricting people's freedom of movement, it is doing so as part of its effort to limit the effects of the drug. One suspects that the plaintiffs would not argue that this restriction exceeds the FDA's statutory

[11] Although the plaintiffs cast this argument as a reason for holding that the FDA lacks authority to regulate any genetic engineering of animals, they might have attempted to distinguish between AquAdvantage salmon and the other animals for which the FDA has approved genetic engineering. In the case of the goats, chickens, and rabbits, the animals are intended to produce something that will be used as an ingredient in a different drug, a scenario that might, even using the plaintiffs' framing, justify FDA regulation. But the salmon is intended to simply be used as food.

authority because the people who ingested the drugs are not themselves drugs. But that hypothetical limitation parallels what the FDA is in fact doing with the salmon—the fish carry the rDNA construct that is the "new animal drug," and the FDA is imposing restrictions on their movement to limit the effects of that drug.

At root, the plaintiffs' attempt to frame the FDA's action as regulation of animals (rather than rDNA constructs) conflates two distinct issues: first, whether the rDNA construct is a drug; and second, whether the FDA may impose conditions on the genetically engineered animals that inherit the rDNA construct. As to the former, as already discussed, the language of the statute compels the conclusion that the rDNA construct is indeed a drug. As to the latter, the FDA enjoys broad discretion to impose conditions on the use of a new animal drug that are "necessary to assure the safe and effective use of such drug." 21 U.S.C. § 360b(i). The FDA can also regulate adulterated food that "bears or contains . . . a new animal drug (or conversion product thereof) that is unsafe within the meaning of section 360b." § 342(a)(1)(C)(ii); *see also* § 360b(k). The plaintiffs haven't pressed a claim that the FDA, even if it properly regulated the rDNA construct, exceeded its authority by imposing conditions on the AquAdvantage salmon that inherit the rDNA construct. Presumably, the plaintiffs prefer the FDA's regulatory powers to be at their zenith if indeed it has authority at all.

And this leads to one final point about the plaintiffs' insistence that the FDA lacks authority to regulate genetically engineered animals. Near the outset of this case, and again at the hearing on this motion, the Court asked the plaintiffs a series of questions: If the FDA lacks the authority to regulate genetically engineered animals, which agencies possess that authority? Or if the plaintiffs prevail on this argument, does it mean that companies like AquaBounty are free to develop, breed, and sell genetically engineered animals without any government regulation? The plaintiffs offered no meaningful answer, which could lead one to wonder if they are firing missiles indiscriminately at genetic engineering without considering what will happen if one of

them hits.[12]

In sum, the government offers the best interpretation of the statute. An rDNA construct that is "intended to affect the structure or any function of the body of man or other animals" is a drug under the FDCA. § 321(g)(1)(C). The government is granted judgment on the pleadings for Claim 1.[13]

IV

The final claim teed up by the parties in this phase of the case is Claim 12, in which the plaintiffs argue that a new animal drug that creates environmental risks is not "safe" under the FDCA and therefore cannot be approved by the FDA. The plaintiffs further argue that the AquAdvantage salmon flunk their statutory test for safety. In contrast, the government interprets the term "safe" to include only the effect of the drug on the genetically engineered animals and the humans who consume food produced from those animals. Under the government's interpretation, any environmental impacts are relevant only to the FDA's analysis under NEPA.

One of the FDA's statutory purposes is to "protect the public health by ensuring that" drugs "are safe and effective." 21 U.S.C. § 393(b)(2)(B). A new animal drug, such as AquaBounty's rDNA construct, is "deemed unsafe" unless the FDA has approved an application "with respect to such use or intended use of such drug." § 360b(a)(1)(A). When adjudicating the application, the FDA must consider at least four factors related to a drug's safety. Section 360b

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[12] To these questions the Court might have added: If the FDA lacks authority to regulate genetically engineered animals, why did some of the plaintiffs previously urge the FDA to assert regulatory authority over them? *See* Citizen Petition AR 14.

[13] Although this issue need not be decided, it's worth noting that the interpretation in Guidance for Industry 187 might be entitled to *Chevron* deference because Congress "engage[d] in express delegation of specific interpretive authority." *United States v. Mead Corp.*, 533 U.S. 218, 229 (2001). The FDA Modernization Act of 1997 authorized the FDA to "set forth initial interpretations of a statute or regulation" by guidance document. 21 U.S.C. § 371(h)(1)(C). While guidance documents are typically not the product of a formal process (*e.g.*, rulemaking or adjudication) that triggers *Chevron* deference, *see Sierra Club v. U.S. Environmental Protection Agency*, 671 F.3d 955, 962–63 (9th Cir. 2012), this particular guidance document was issued only after the FDA complied with the relatively formal notice-and-comment procedures of section 371(h). But at the end of the day, the guidance document lacks "the force of law," and so it likely doesn't "warrant *Chevron*-style deference." *Christensen v. Harris County*, 529 U.S. 576, 587 (2000).

provides in relevant part:

> In determining whether such drug is safe for use under the conditions prescribed, recommended, or suggested in the proposed labeling thereof, the Secretary shall consider, among other relevant factors, (A) the probable consumption of such drug and of any substance formed in or on food because of the use of such drug, (B) the cumulative effect on man or animal of such drug, taking into account any chemically or pharmacologically related substance, (C) safety factors which in the opinion of experts, qualified by scientific training and experience to evaluate the safety of such drugs, are appropriate for the use of animal experimentation data, and (D) whether the conditions of use prescribed, recommended, or suggested in the proposed labeling are reasonably certain to be followed in practice. Any order issued under this subsection refusing to approve an application shall state the findings upon which it is based.

§ 360b(d)(2); *see also* 21 C.F.R. § 514.1(b)(8) (describing "[e]vidence to establish safety and effectiveness").

Claim 12 thus presents another question of statutory interpretation: Does section 360b's requirement that a new animal drug be "safe for use" allow consideration of the drug's environmental risks? Some aspects of the statutory scheme suggest that the FDA's substantive decision should turn solely on the safety of the genetically engineered animals and the humans who come into contact with those animals. For example, Congress provided that the "term 'safe' as used in paragraph(s) of this section and in sections 348, 360b, 360ccc, and 379e of this title, has reference to the health of man or animal." 21 U.S.C. § 321(u). The statute could be read to suggest that safety is linked to health rather than some broader conception of harm, and the prerequisite question for approval is that the new animal drug is safe "for use" under the label's conditions. § 360b(d)(2); *see also American Pharmaceutical Association v. Weinberger*, 377 F. Supp. 824, 828 (D.D.C. 1974). Under this interpretation, the FDA would focus on the effect of the rDNA construct on the health of the salmon and the humans that eat them—but not the effect of the AquAdvantage salmon on the wider world. *See Stauber v. Shalala*, 895 F. Supp. 1178, 1195 (W.D. Wis. 1995) (distinguishing "animal and consumer safety" under the FDCA from environmental risks covered by NEPA).

A couple other issues might arise if a drug's safety includes its environmental risks. For

one, the FDCA itself supplies no benchmark for the FDA to set a maximum level of environmental risk or to balance the health benefits of a drug against its environmental costs. *Cf. Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 448 U.S. 607, 645–46 (1980) (plurality opinion). Furthermore, to return to the unguided-missile concept from the previous section, a broad understanding of the safety determination by the FDA could result in preemption of state law that attaches liability to the environmental consequences of an FDA-approved drug. *See Wyeth v. Levine*, 555 U.S. 555, 580–81 (2009).

But there's also reason to hesitate before adopting the government's interpretation. The term "safe" is certainly capacious enough to reach environmental risks, and Congress carved out space for "other relevant factors." 21 U.S.C. § 360b(d)(2). Thus, the FDA might be permitted to treat the environment as a relevant factor so long as there is "a rational connection between the facts found and the choice made." *Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 43 (1983) (internal quotation marks omitted). And perhaps in compelling circumstances, environmental harm would be among the "other relevant factors" the FDA would be required to consider when evaluating a drug's safety.

The government's narrow interpretation of the term "safe" raises practical concerns as well. The regulations that implement the FDA's obligations under NEPA require an applicant for a new animal drug to prepare an environmental assessment so that the agency can "ensure[ ] that any necessary mitigating measures are implemented as a condition for approving the selected course of action." 21 C.F.R. §§ 25.40(e), 514.1(b)(14). This regulation appears to assume that the FDA will consider environmental mitigation as part of its approval decision. Indeed, the mere fact that the FDA's new-animal-drug approval triggers NEPA's procedures suggests that environmental considerations are relevant to this decisionmaking process. And the foundational premise of NEPA is that the agency's "hard look" at the environment consequences is "almost certain to affect the agency's substantive decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). But the parties have not meaningfully discussed whether NEPA itself permits the FDA to condition approval of a new drug on mitigation of

environmental risk, and there is at least some reason to doubt that it does. *See id.* at 351 ("Other statutes may impose substantive obligations on federal agencies, but NEPA merely prohibits uninformed—rather than unwise—agency action.") (citation omitted). Nor have the parties identified another potential source—beyond the FDCA itself—of the FDA's authority to mitigate the environmental consequences of its approval decisions. A narrow interpretation of the term "safe" could therefore prohibit or severely restrict the FDA's ability to impose conditions of use, including the prohibition on growing AquAdvantage salmon in ocean net pens.

To rebut this concern, the government posits that regulated parties will be deterred from harming the environment by NEPA's paperwork burden—namely, the requirement to prepare an environmental impact statement upon an agency finding of a significant environmental impact. *See* 21 C.F.R. § 25.40(e). This provides little comfort to those who rely on the FDA's ability to impose environmentally protective conditions: All it would take for an applicant to win FDA approval of a new animal drug (no matter the environmental harms) is a tolerance for red tape. The government also suggests that the FDA could *accept* environmentally protective conditions proposed by applicants even if the FDA could not *impose* the condition as the price of approval. But this distinction seems dubious, and the government has provided no meaningful explanation, let alone authority, in support of it.

The parties have not adequately briefed the important questions discussed above. In particular, they have not adequately explained how their opposing interpretations impact the scope of judicial review or interact with NEPA. That distinction could make a difference here, because the FDA considered environmental risk, at least to some degree, when it approved the conditions of use for the genetic engineering of the AquAdvantage salmon. These moving parts justify delaying the resolution of Claim 12 until the next phase of the case.

V

The government's motion for judgment on the pleadings is granted as to Claims 8 and 13, because the guidance document is not final agency action. The plaintiffs' cross-motion for summary judgment on the same claim is denied. The government's motion for judgment on the

pleadings is granted as to Claim 1, and the plaintiffs' cross-motion for summary judgment on the same claim is denied because the FDA has the statutory authority to regulate the genetic engineering of animals. Both the government's motion for judgment on the pleadings and the plaintiffs' motion for summary judgment are denied as to Claim 12, without prejudice to raising the issue again at the next phase of the case.

IT IS SO ORDERED.

Dated: December 19, 2019

VINCE CHHABRIA
United States District Judge