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Via Email: andy.burke@nih.gov

Re: Prospective Grant of an Exclusive Patent License: Development and Commercialization of Cell Therapies for Cancer, 85 FR 36872, to Ziopharm Oncology, Inc.

Dear Dr. Burke:

Knowledge Ecology International (KEI) and the Union for Affordable Cancer Treatment (UACT) are writing to comment on the "Prospective Grant of an Exclusive Patent License: Development and Commercialization of Cell Therapies for Cancer" to "Ziopharm Oncology, Inc. ("Ziopharm"), as described in the Federal Register notice at 85 FR 36872 ("the notice").[1]

The license would grant Ziopharm exclusive, worldwide rights to three types of T Cell Receptors (TCRs) targeting mutated Kirsten rat sarcoma viral oncogene homolog (KRAS) antigen, which is expressed on several epithelial cancers, including pancreatic, colorectal, ovarian, lung, and prostate cancer. The TCRs covered by the license are part of a collection of TCRs developed by the National Cancer Institute (NCI) that have been licensed exclusively to Ziopharm.

To grant the license, the National Institutes of Health (NIH) must consider all timely submitted public comments and determine that exclusivity is necessary to incentivize a company to commercialize the inventions and that the scope of exclusivity is not broader than necessary. The NIH must also seek the advice of the U.S. Attorney General before executing the license.

We are concerned that the process for the proposed license lacks transparency.

The NIH has not answered several questions about the license, including questions about how the NIH applied the statutory standard governing the license, and questions about the terms of the license. The lack of information on the NIH's analysis and the terms of the license has interfered with our ability to exercise our right to comment on the license.

[1] 85 Fed. Reg. 36872 (June 18, 2020), available at https://www.federalregister.gov/documents/2020/06/18/2020-13137/prospective-grant-of-an-exclusive-patent-license-development-and-commercialization-of-cell-therapies.

Based upon the NIH's prior approach toward its technology transfer responsibilities under the Bayh-Dole Act and other statutory obligations, we are concerned that the NIH has not engaged in the type of economic analysis required by 35 U.S.C. § 209(a), and it is our assumption that the NIH has failed to seek the advice of the U.S. Attorney General, as is required by statute.

Background

The Inventions

The inventions covered by the license have been assigned NIH Reference Numbers
E-031-2020: HLA Class I-Restricted T Cell Receptors Against RAS with G12D Mutation;
E-074-2020: HLA Class I-Restricted T Cell Receptors Against RAS with G12V Mutation; and
E-088-2020: HLA Class II-Restricted T Cell Receptors Against RAS with G12V Mutation. The patent applications for the technologies are not available for inspection in public search engines maintained by the U.S. Patent and Trademark Office.

The inventions are part of a collection of "T Cell Receptors Targeting KRAS Mutants for Cancer Immunotherapy/Adoptive Cell Therapy" at the National Cancer Institute (NCI) website.[2]

The abstract for the invention states as follows:

> Researchers at the National Institutes of Health have identified a collection of TCRs that specifically target mutated KRAS antigen. These TCRs exclusively recognize the G12D or G12V variants of mutated KRAS, which are common hotspot driver mutations expressed by a variety of epithelial cancers, including pancreatic, colorectal and lung cancer.[3]

All inventions in the collection have been licensed on an exclusive basis to Ziopharm. The instant license would thus add to Ziopharm's collection of rights in NCI's TCRs targeting the G12D or G12V variants of mutated KRAS.

The table below, constructed by the NCI's Office of Technology Transfer, demonstrates how the prospective license would complete the transfer of rights in NCI's "Collection of mutated KRAS TCRs" to Ziopharm.

[2] https://techtransfer.cancer.gov/availabletechnologies/e-175-2016.
[3] https://techtransfer.cancer.gov/availabletechnologies/e-175-2016.

Table 1: Collection of mutated KRAS TCRs.

No.	TCR (ID in Reference)	KRAS Variant	HLA Restriction	TCR Origin	Reference
1	TCR (TRAV12N-3*01/TRBV4*01)	G12D	A*11:01	Murine	E-028-2015
2	TCR (TRAV19*01/TRBV13-1*02)	G12V	A*11:01	Murine	E-180-2015
3	TCR (TRAV3-3*01/TRBV4*01)	G12V	A*11:01	Murine	E-180-2015
4	TCR (TRAV4*01/TRBV5-6*01)	G12D	C*08:02	Human	E-265-2015
5	TCR-1 (TRAV4*01/TRBV5-6*01)	G12D	C*08:02	Human	E-175-2016
6	TCR-2 (TRAV4*01/TRBV5-6*01)	G12D	C*08:02	Human	E-175-2016
7	TCR-3 (TRAV4*01/TRBV5-6*01)	G12D	C*08:02	Human	E-175-2016
8	TCR-4 (TRAV12-2*01/TRBV10-2*01)	G12D	C*08:02	Human	E-175-2016
9	TCR (TRAV13-1/TRBV20-1)	G12V	DRB1*07:01	Human	E-181-2017
10	TCR (TRAV24/TRBV12-4)	G12C	DRB1*11:01	Human	E-181-2017
11	TRC (TRAV14/DV4*02/TRBV5-1*01)	G12V	A11:01	Human	E-239-2017
12	TCR (TRAV12-3*03/TRBV1*01)	G12V	HLA-A3	Human	E-166-2018
13	TCR (TRAV29/TRBV19*02)	G12R	DRB5*01	Human	E-029-2019
14	TCR (TRAV12*-2*01/TRBV20-1*01)	G12R	HLA-DQA1*05:05:HLA-DQB1*03:01	Human	E-029-2019
15	4373 TCR2	G12D	A*11:01	Human	E-031-2020
16	4391 TCR1	G12V	C*01:02	Human	E-074-2020
17	4385 TCR4	G12V	C*01:02	Human	E-074-2020
18	4360 TCR1	G12V	DPB1*03:01	Human	E-088-2020
19	4360 TCR5	G12V	DPB1*03:01	Human	E-088-2020

Source: https://techtransfer.cancer.gov/availabletechnologies/e-175-2016.

As demonstrated below, the prospective license appears to be a second amendment to a license to Ziopharm first executed on May 28, 2019. The May 28, 2019 license, January 8, 2020 amendment, and the amendment proposed by the instant prospective license all relate to the TCRs listed in Table 1, above.

The May 28, 2019 License (84 FR 2537)

The first 12 KRAS TCRs listed in Table 1 were licensed to Ziopharm as part of a May 28, 2019 Exclusive Licensing Agreement.

In February of 2019, at 84 FR 2537, the NIH announced that it was proposing licensing Inventions E-028-2015, E-265-2015, E-175-2016, E-181-2017, E-239-2017, and E-166-2018 to Ziopharm.[4] KEI and other concerned groups and individuals objected to that proposed license.[5] In email correspondence with KEI, Dr. Burke confirmed that the license referenced at 84 FR 2537 was executed on May 28, 2019.

[4] See 84 Fed. Reg. 2537, https://www.federalregister.gov/documents/2019/02/07/2019-01431/prospective-grant-of-an-exclusive-patent-license-development-and-commercialization-of-cell-therapies.
[5] https://www.keionline.org/29777.

The terms of the May 28, 2019 license are disclosed in detail in Ziopharm's most recent SEC 10-Q form, including the terms of Ziopharm's royalty payments to the NIH. The period of exclusivity and grounds for terminating the license are described as follows:

> The Patent License will expire upon expiration of the last patent contained in the licensed patent rights, unless terminated earlier. The NCI may terminate or modify the Patent License in the event of a material breach, including if the Company does not meet certain milestones by certain dates, or upon certain insolvency events that remain uncured following the date that is 90 days following written notice of such breach or insolvency event. The Company may terminate the Patent License, or any portion thereof, in the Company's sole discretion at any time upon 60 days' written notice to the NCI. In addition, the NCI has the right to: (i) require the Company to sublicense the rights to the product candidates covered by the Patent License upon certain conditions, including if the Company is not reasonably satisfying required health and safety needs and (ii) terminate or modify the Patent License, including if the Company is not satisfying requirements for public use as specified by federal regulations.[6]

The First Amendment to the May 28, 2019 License (84 FR 52890)

The next two TCRs in Table 1, both assigned NIH Reference No. E-029-2019, are part of a proposed patent license to Ziopharm described at 84 FR 52890.[7] KEI and UACT submitted comments objecting to that proposed license.[8] In an email, Dr. Andrew Burke--the point of contact for the May 28, 2019 license and subsequent amendments--stated that the license described at 84 FR 52890 was an amendment to the May 28, 2019 license. Dr. Burke also confirmed that the amendment was executed.

Ziopharm's most recent SEC 10-Q form states "on January 8, 2020, the Company entered into an amendment to the patent license agreement which expanded the TCR library to include additional TCR's reactive to mutated KRAS and TP53."[9] The proposed license described at 84 FR 52890 involved "T cell receptors reactive to mutated KRAS" and "T cell receptors reactive to mutated P53".[10] It thus appears that the proposed license at 84 FR 52890 was executed on

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[6] https://www.sec.gov/ix?doc=/Archives/edgar/data/1107421/000119312520136200/d914940d10q.htm.
[7] 84 Fed. Reg. 52890, https://www.federalregister.gov/documents/2019/10/03/2019-21519/prospective-grant-of-an-exclusive-patent-license-development-and-commercialization-of-cell-therapies.
[8] https://www.keionline.org/31858.
[9] https://www.sec.gov/ix?doc=/Archives/edgar/data/1107421/000119312520136200/d914940d10q.htm.
[10] https://www.federalregister.gov/documents/2019/10/03/2019-21519/prospective-grant-of-an-exclusive-patent-license-development-and-commercialization-of-cell-therapies.

January 8, 2020 as an amendment to the May 28, 2019 license, as described in Ziopharm's 10-Q.

The Prospective License appears to be an amendment to the May 28, 2019 license.

The final five KRAS TCRS are the subject of the instant prospective license, which too appears to be an amendment to the May 28, 2019 license. KEI asked Dr. Burke if the prospective license is, in fact, an amendment to the May 28, 2019 license and he did not respond prior to the close of the comment period.

Scope of the Amendment

According to the notice, the geographic scope of exclusivity "may be worldwide" and the fields of use for the license may be limited to:

> Development, manufacture and commercialization of autologous, peripheral blood T cell therapy products engineered by transposon-mediated gene transfer to express T cell receptors reactive to mutated KRAS, as claimed in the Licensed Patent Rights, for the treatment of human cancers. Specifically excluded from this field of use are, a) retrovirally-engineered peripheral blood T cell therapy products for the treatment of human cancers, and b) CRISPR-engineered peripheral blood T cell therapy products for the treatment of human cancers.
>
> Development, manufacture and commercialization of companion diagnostics approved or cleared by the FDA or equivalent foreign regulatory agency for Licensee-proprietary T cell therapy products.[11]

The Prospective Licensee

Ziopharm was registered in Delaware on May 16, 2005 and in Massachusetts on December 19, 2006.

According to its most recent SEC 10-Q form, Ziopharm is "a biopharmaceutical company focused on discovering, acquiring, developing and commercializing next generation immunotherapy platforms that leverage cell- and gene-based therapies to treat patients with cancer."[12]

In 2017, Ziopharm announced that it signed a Cooperative Research and Development Agreement (CRADA) with NCI to develop adoptive cell transfer, or ACT-based immunotherapies

[11] 85 FR 36872.
[12] https://www.sec.gov/Archives/edgar/data/1107421/000119312519063978/d678734d10k.htm

genetically modified using the Sleeping Beauty transposon/transposase system to express TCRs for the treatment of solid tumors.[13]

On June 15, 2020, Ziopharm announced that Dr. Carl June was appointed as Chairman of Scientific Advisory Board of the company.[14]

Discussion

1. We believe that NIH has not meaningfully evaluated whether exclusivity is a necessary incentive and the scope of exclusivity is not broader than necessary.

We are concerned that the NIH likely has not meaningfully applied the statutory criteria governing when a federal agency is authorized to grant an exclusive license to a federally-owned invention.

The NIH may grant an exclusive or partially exclusive license only when "granting the license is a reasonable and necessary incentive to—call forth the investment capital and expenditures needed to bring the invention to practical application; or (B)otherwise promote the invention's utilization by the public[.]" 35 U.S.C. § 209(a)(1).

If the NIH determines that exclusivity is a necessary incentive, it must also ensure that the scope of the license is not broader than needed. *See* 35 U.S.C. § 209(a)(2)(requiring that "the proposed scope of exclusivity is not greater than reasonably necessary to provide the incentive for bringing the invention to practical application, as proposed by the applicant, or otherwise to promote the invention's utilization by the public[.]").

KEI emailed Dr. Burke a list of questions about the license and the NIH's analysis. Among other questions, KEI asked how the NIH determined that exclusivity is a necessary incentive and that the scope of the license does not exceed the incentive needed. He declined to answer those questions, instead referring KEI to the NIH's past answers to KEI's questions regarding unrelated prospective licenses.

Based on Dr. Burke's and the NIH's previous statements regarding exclusive patent licenses, we can assume that it did not perform the analysis required by 35 U.S.C. § 209(a)(1)-(2).

Dr. Burke answered KEI's question about the NIH's analysis of the necessity of exclusivity for the first amendment to the May 28, 2019 license to Ziopharm. The exchange was as follows:

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13 https://ir.ziopharm.com/news-releases/news-release-details/ziopharm-and-intrexon-announce-cooperative-research-and

14 https://ir.ziopharm.com/news-releases/news-release-details/ziopharm-oncology-appoints-carl-june-md-chairman-scientific.

KEI's Correspondence with Dr. Burke's Response regarding Exclusivity, 84 FR 52890

> 3. On what basis did the NIH conclude that an exclusive license to Ziopharm was a necessary incentive under 35 U.S.C. § 209(a)(1)? **Answer: An identified public health need, license applicant's commercial development ability at the time of application, 35 U.S.C. 209 and 37 CFR part 404.**
> a. Did you perform any analysis of other incentives such as Orphan Drug exclusivity, pediatric rare disease priority review vouchers, test data exclusivity, etc? **[No Answer]**
> b. Did you estimate the cost of bringing the technologies to market? **[No Answer]**

If the NIH's analysis of the necessity of exclusivity of the license at hand was limited to "[a]n identified public health need" and "Ziopharm's commercial development ability at the time of application" for the instant license, the NIH has failed to perform the analysis required by 35 U.S.C. § 209(a)(1).

The governing standard is that exclusivity is "a reasonable and *necessary* incentive". 35 U.S.C. § 209(a)(1)(emphasis added). Section 209(a)(1) does not speak to public health needs or the qualifications of the applicant, although those factors are certainly relevant to whether the license should be granted in the first place. Rather, Section 209(a)(1) allows the NIH to grant an exclusive license only when exclusivity is necessary, meaning that no qualified firm would be incentivized to commercialize the invention on a non-exclusive basis.

In analyzing the necessity of exclusivity, the NIH must consider the other types of incentives provided by law, such as test data protection, Orphan Drug exclusivity, etc., and the likely case that the developer can bring other patented inventions into the project, for which exclusivity exists.

Regarding the scope of the license, the NIH may not simply assume that "life-of-patent" is the appropriate term of exclusivity or that the geographic scope of exclusivity should be worldwide. Rather, the NIH must consider (1) the possibility that a license for shorter than life of patent will be adequate to incentivize a company to commercialize an invention, as it has done with numerous products for the treatment of cancer, including cases where products were only protected by five years of exclusive rights in regulatory test data, with no patents, and (2) if exclusivity in non-US high income countries, is a sufficient incentive, without imposing the costs of a monopoly on U.S residents, who have already paid for the invention.

Here, it appears that Ziopharm is motivated to obtain a license to the three TCRs covered by the license, since it has licensed all other mutated KRAS TCRs in the NCI's collection. The NIH should have investigated whether it could use Ziopharm's apparent desire to license the entire collection of NCI mutated KRAS TCRs to limit the scope of exclusivity or obtain other concessions that would benefit the public, such as was the case with the NIH cisplatin license to

Bristol Myers Squibb. The large patient population for the inventions' many cancer indications is another factor that would incentivize commercial development.

The NIH's conclusion that exclusivity is a necessary incentive is undermined by the fact that the NIH failed to advertise the inventions as available for licensing, which is a departure from NIH policies. According to the PHS Technology Transfer Policy, Chapter 302:

> Publishing a notice that an invention is available for licensing is one of a number of marketing outreach methods employed to inform industry that particular PHS inventions are available for licensing. Also, publication of a notice that an invention is available for licensing serves to meet one of the requirements of 37 C.F.R. § 404.7 if an exclusive or partially exclusive license is ultimately granted.[15]

Similarly, the NIH Office of Technology Transfer (OTT) webpage for the OTT Licensing Process instructs potential commercial partners to use [u]se the *Find Technologies* section at the right of the webpage screen to search for and view abstracts describing HHS technologies available for licensing", which is searchable by "NIH OTT Ref. No. (aka E. no.)".[16] The idea is that one can search the E. no of an invention in the *Find Technologies* search engine, and the engine will return an abstract for the invention. That is not the case for the inventions covered by the prospective license. A search for all three E. nos returns no results in the search engine. This is because rather than creating a separate abstract or description for each of the covered inventions, the NIH instead chose to add the E. nos. to the list of mutated KRAS TCRs featured in the abstract for Invention No. E-175-2016. The fine print of the amended KRAS TCR table adding the covered E. Nos. is not a reasonable method of alerting potential commercial partners that the TCRs are available for licensing. The NIH also advertises technologies as available for licensing in the Federal Register, but no such notice of the inventions involved in this license exists.

If the NIH did not investigate the possibility of granting a non exclusive or co-exclusive license, limiting the term of the proposed license, or otherwise limiting the terms, such as granting exclusivity only to non-US high income countries, it has not satisfied its obligations under 35 U.S.C. § 209(a)(1)-(2).

2. The NIH withheld relevant, non-confidential information about the license, limiting KEI's right to comment on it, a right that is guaranteed to the public by 35 U.S.C. § 209(e).

"No exclusive or partially exclusive license may be granted under section 207(a)(2) unless public notice of the intention to grant an exclusive or partially exclusive license on a federally owned invention has been provided in an appropriate manner at least 15 days before the

[15] https://www.ott.nih.gov/sites/default/files/documents/policy/pdfs/302-Policy.pdf.
[16] https://www.ott.nih.gov/licensing/licensing-process.

license is granted, and the Federal agency has considered all comments received before the end of the comment period in response to that public notice." 35 U.S.C. § 209(e).

The NIH's lack of full transparency about the license has limited our ability to comment on it.

As noted above, KEI emailed Dr. Burke a list of questions about the license, and he declined to answer several of the questions, referring KEI to the NIH's past answers about unrelated licensing decisions.

The questions that Dr. Burke declined to answer regarding the instant license include the following:

1. How much did the NCI spend to develop the inventions?
2. How did NIH determine that exclusivity is a reasonable and necessary incentive?
3. How did NIH determine that the scope of the license is not broader than necessary?
4. What is the period of exclusivity?
5. Have/will NCI consider a period shorter than life of patent?

In declining to answer each of the questions listed above, Dr. Burke stated as follows: "This question has been addressed in past correspondence between my office and your organization. Please refer to our previous answers." Of course, that statement was not correct, because KEI had not previously inquired about the instant license. KEI informed Dr. Burke that the questions he declined to answer had not been answered, and he did not reply to that email.

In the past, the NIH has declined to answer some of KEI's questions, such as questions regarding the term of exclusivity and royalty payments for the license, on the basis that the information sought by KEI was confidential business information.

The detailed description of the May 28, 2019 license between the NCI and Ziopharm in Ziopharm's most recent 10-Q demonstrates that the terms of the license are not confidential business information.

By failing to provide information that is relevant to whether the NIH may grant the prospective license, that NIH was not fully transparent about the license and interfered with our ability to comment on the license, which is guaranteed under 35 U.S.C. § 209(e).

3. The NIH apparently has not sought the antitrust advice of the U.S. Attorney General regarding the license, as required by 40 U.S.C. § 559.

We object to the license because the NIH has not first obtained the antitrust advice of the United States Attorney General before disposing of government-owned property.

Under the Federal Property and Administrative Services Act, 40 U.S.C. § 101 *et seq.*, "[a]n executive agency shall not dispose of property to a private interest until the agency has received the advice of the Attorney General on whether the disposal to a private interest would tend to create or maintain a situation inconsistent with antitrust law." 40 U.S.C. § 559(b)(1).

This includes when the NIH proposes to grant an exclusive license in federally-owned technology. "Property" is defined at 40 U.S.C. § 102 to mean "any interest in property." The statute exempts personal property if the fair market value is less than $3,000,000, but specifically excludes "a patent, process, technique, or invention" from that exception.

The regulation 41 C.F.R. § 102-75.270 also makes clear the inclusion of patents "irrespective of cost."

KEI asked Dr. Burke whether the NIH requested the advice of the U.S. Attorney General concerning the licenses. Dr. Burke did not answer. In the past, the NIH has asserted its position with respect to 40 U.S.C. § 559 as follows:

> The statute you reference is directed to the disposal (assignment) of government property. It has little relevance to our patent licensing activities, which are principally governed by the Bayh-Dole Act and its regulations.

We disagree.

35 U.S.C. § 209(a)(4) allows a federal agency to grant an exclusive license only if the license "will not tend to substantially lessen competition or create or maintain a violation of the Federal antitrust laws." 35 U.S.C. § 211 provides that "[n]othing in this chapter shall be deemed to convey to any person immunity from civil or criminal liability, or to create any defenses to actions, under any antitrust law[.]" The Bayh-Dole Act sets out the areas in which the statute "shall take precedence over any other Act which would require a disposition of rights in subject inventions[,]" 35 U.S.C. § 210, and mentions 21 separate statutes, but not the FPASA.

The term "disposal" is not a defined term under 40 U.S.C. § 102 of the FPASA, and is not limited to "assignment" or "sale." In fact, there are many examples of regulations and laws that include licensing amongst dispositions, either explicitly or by implication.

If NIH grants an exclusive license in a federally-owned invention, it is disposing of a government property interest so as to trigger 40 U.S.C. § 559.

4. In the event that the NIH decides to grant the license over our objections, we recommend that the NIH includes a series of provisions designed to safeguard the public interest and ensure that the license implements the governing principles listed in the Public Health Service (PHS) technology transfer manual.

In the event that the NIH proceeds with the license, KEI requests that it includes the following provisions to protect the public's interest in the NIH-funded technology:

1. **Geographic scope of exclusivity.** If the NIH decides to grant exclusive rights to the subject inventions, it should limit exclusivity to the European Union, Japan and other high-income countries, but not the United States, so that countries that did not fund the R&D underlying the inventions would bear the costs of the exclusivity, while the US residents would not. The NIH should also limit exclusivity in moderate and lower income countries, where the monopoly is likely to have an adverse impact on access with almost no benefit in terms of the incentives for the company.

2. **Price discrimination.** Any medical technology using the patented invention should be available in the United States at a price that does not exceed the median price in the seven largest economies by GDP that have at least 50 percent of the GNI per capita as the United States, using the World Bank Atlas method. This is a modest safeguard.

3. **Low and middle income countries.** The exclusive license should not extend to countries with a per capita income less than 30 percent of the United States, in order to ensure that the patents do not lead to restricted and unequal access in developing countries. If the NIH rejects this suggestion, it needs to provide something that will give effect to the policy objective in the "United States Public Health Service Technology Transfer Policy Manual, Chapter No. 300, PHS Licensing Policy," which states the following: "PHS seeks to promote commercial development of inventions in a way that provides broad accessibility for developing countries."

4. **Global registration and affordability.** The license should require Ziopharm to disclose the steps it will take to enable the timely registration and availability of the medical technology at an affordable price in the United States and in every country with a demonstrated need, according to the Centers for Disease Control and Prevention (CDC) and/or the World Health Organization (WHO), either by supplying a country directly at an affordable, publicly disclosed price and with sufficient quantities, or by providing technology transfer and rights to all intellectual property necessary for third parties to do so.

5. **Medicines Patent Pool.** The NIH should retain a right to grant the WHO, the Medicines Patent Pool or other governments the rights to use the patent rights to procure the medical technology from competitive suppliers, including technology transfer, in

developing countries, upon a finding by HHS or the WHO that people in these markets do not have sufficient access to the medical technology.

6. **Years of exclusivity.** We propose the license reduces the years of exclusivity when revenues are large. The NIH has many options, including by providing an option for non-exclusive licensing, such as was done in the ddI case. We propose that the exclusivity of the license be reduced when the global cumulative sales from products or services using the inventions exceed certain benchmarks. For example, the period of exclusivity in the license could be reduced by one year for every $500 million in global cumulative revenue after the first one billion in global sales. This request is consistent with the statutory requirements of 35 U.S.C. § 209, which requires that "the proposed scope of exclusivity is not greater than reasonably necessary to provide the incentive for bringing the invention to practical application[.]"

7. **Transparency of R&D outlays.** The licensee should be required to file an annual report to the NIH, available to the public, on the research and development (R&D) costs associated with the development of any product or service that uses the inventions, including reporting separately and individually the outlays on each clinical trial. We will note that this is not a request to see a company business plan or license application. We are asking that going forward the company be required to report on actual R&D outlays to develop the subject inventions. Reporting on actual R&D outlays is important for determining if the NIH is meeting the requirements of 35 U.S.C. § 209, that "the proposed scope of exclusivity is not greater than reasonably necessary to provide the incentive for bringing the invention to practical application." Specifically, having data on actual R&D outlays on each clinical trial used to obtain FDA approval provides evidence that is highly relevant to estimating the risk adjusted costs of bringing NIH licensed inventions to practical application.

Conclusion

We object to the proposed amendment to the license to Ziopharm for the reasons stated herein. In the event that the NIH grants the license, we ask that it incorporates the provisions listed above, which are designed to protect the public interest in the licensed technologies and to accomplish the policies outlined in the PHS Technology Transfer Manual and Section 200 of the Bayh-Dole Act.

Sincerely,

Knowledge Ecology International
Union for Affordable Cancer Treatment