Essential Inventions, Inc.
P.O. Box 19367, Washington, DC 20036

29 January 2004

The Honorable Tommy Thompson
Secretary
Department of Health and Human Services
200 Independence Ave., S.W.
Washington D.C. 20201

Dear Secretary Thompson:

RE: Petition to use authority under Bayh-Dole Act to promote access to latanoprost, supported by U.S. Public Health Service Research Grant Numbers EY 00333 and EY 00402 from the National Eye Institute, Department of Health and Human Services.

Dear Secretary Thompson:

The enclosed petition formally requests that you use authority under the Bayh-Dole Act, 35 U.S.C. § 200 et seq., to authorize any party to use patents necessary for the manufacture and sale of latanoprost, an important medicine used to treat glaucoma.

Latanoprost was discovered through research funded by the National Institutes of Health. The patent rights for latanoprost are licensed to Pfizer, which markets the medicine under the trademark Xalatan. Despite the U.S. government's substantial investment in the development of the medicine, Xalatan is generally sold in the U.S. at 2-5 times the price as the same product sold by Pfizer in Canada and Europe. We believe that these terms are not reasonable to American consumers.

To remedy Pfizer's unreasonable pricing of Xalatan, we request that you issue an "open license" for all latanoprost patents that are subject to federal rights. An open license is a non-exclusive standard license that grants authority to use the subject invention to any qualified supplier on the same non-discriminatory terms.

We anticipate and share concerns that efforts to reduce prices for this government-funded invention will reduce profits to Pfizer and may reduce somewhat private sector incentives to invest in research and development. To address these concerns we propose terms that include both a 5% royalty to the patent holder on each generic sale and a special obligation for generic manufacturers of latanoprost to finance research and development for vision ailments.

We look forward to your prompt consideration of this urgent matter.

Sincerely

James Love, President
Essential Inventions, Inc.

Sean Flynn, Counsel
Essential Inventions, Inc.

PETITION TO USE AUTHORITY UNDER BAYH-DOLE ACT TO PROMOTE ACCESS TO LATANOPROST
SUPPORTED BY U.S. PUBLIC HEALTH SERVICE RESEARCH GRANT NUMBERS EY 00333 AND EY 00402 FROM THE NATIONAL EYE INSTITUTE, DEPARTMENT OF HEALTH AND HUMAN SERVICES

1 Executive Summary

Essential Inventions, Inc. requests the Secretary to exercise Bayh-Dole March-In rights and grant an open license to use a patent that is related to the manufacture of latanoprost, a

treatment for glaucoma. The patent in question is now used by Pfizer to sell latanoprost under the trade name Xalatan. The grounds for the march-in request are that Pfizer charges US consumers much higher prices than are charged in Canada or Europe, and that this is unreasonable when the invention was paid for by US taxpayers. The Secretary is asked to adopt a presumption that patent owners for the subject invention should not charge U.S. consumers more than is generally charged in countries that are defined by the World Bank as high income.

The requested license to manufacture, use, import, export and sell generic Latanoprost should be open to any qualified application. We propose that the license include a five percent royalty to the patent owner, calculated on the basis of the generic sale price. Moreover, we request that the open license also require every manufacturer of generic latanoprost to contribute to an R&D fund for vision impairments.

2 Essential Inventions, Inc.

Essential Inventions is a private, not-for-profit corporation organized under the laws of the District of Columbia. Essential Inventions' stated purpose is the promotion of access to essential inventions throughout the world, including access to needed medicines. As described in this petition, Essential Inventions seeks an open license under the Bayh-Dole Act that would allow it and others to supply latanoprost in the U.S. and abroad.

3 Request for licenses to patents on latanoprost

This petition requests that third parties be authorized to use the U.S. Patent No. 4599353. Authorization under this patent is necessary to manufacture latanoprost, an important medicine used to treat glaucoma.

4 Background on latanoprost

4.1 Discovery through federally funded research

Latanoprost is a compound that can reduce intraocular pressure and stave off blindness in patients with glaucoma. The compound was developed by Columbia University professor Laszlo Z. Bito in 1982. Dr. Bito's research in the late 1970s and early 1980s was funded with over $4 million in grants from the National Eye Institute at the National Institutes of Health.

4.2 Identification of government rights on patent

The original patent on latanoprost was filed in 1982 by Dr. Bito, with Columbia University listed as the assignee. The patent contains the mandatory language identifying the invention as conceived of under research supported with federal funding, explaining under a clause labeled "Government Interests:"

> The invention described herein was made in the course of work under U.S. Public Health Service Research Grant Numbers EY 00333 and EY 00402 from the National Eye Institute, Department of Health and Human Services.

4.3 Licensing to Pharmacia/Pfizer

Latanoprost was subsequently licensed from Columbia University to Pharmacia Corp, now owned by Pfizer. Pharmacia Corp reportedly paid Columbia just $150,000 for the rights to the invention, plus royalty payments.

4.4 Pfizer's U.S. Pricing and Profits

Pharmacia Corp. developed latanoprost into a blockbuster drug, sold under the trademark Xalatan. Xalatan is priced in the U.S. for as much as $65 for a four to six week supply (depending on if one or two eyes are being treated). According to a 1999 story in the *New York Times*,[1] the production of the active ingredient, which takes place outside of the United States, costs less than 1% of the sales price. Sales of Xalantan totaled over $500 million per year by 2000, and now top $1 billion annually.

4.5 Survey of Global Prices for Xalatan

Table I presents a survey of Pfizer's price for Xalantan. Prices in the U.S. are generally 2-5 times the price in most European countries, despite American taxpayers funding its early development.

[1] Jeff Gerth and Sheryl Gay Stolberg, "Drug Companies Profit from Research Supported by Taxpayers," *New York Times*, April 23, 2000.

TABLE 1: Prices for Xalatan (2.5ML bottle 0.005% solution)

		Home Currency	*Exchange Rate*		*Price to Consumer in USD*
Australia	$	34.12	0.74	$	25.30
Canada	$	26.00	0.75222	$	19.56
Norway		188.9	0.14883	$	28.11
Belgium	€	30.22	1.2433	$	37.57
Denmark	€	7.93	1.2433	$	9.86
Finland	€	26.20	1.2433	$	32.57
France	€	20.89	1.2433	$	25.97
Germany	€	29.14	1.2433	$	36.23
Italy	€	24.53	1.2433	$	30.50
Netherlands	€	19.97	1.2433	$	24.83
Portugal	€	23.77	1.2433	$	29.55
Sweden		204	0.13708	$	27.96
UK		16.13	1.768	$	28.52
Poland		91.00	0.26723	$	24.32
US - Drugstore.com				**$**	**50.99**
CVS - no insurance				**$**	**63.99**
RSA		260.18	0.15003	$	39.03
Nicaragua				$	30.00

5 Legal Analysis

Pfizer's policy of charging U.S. consumers more than the other high-income countries is unreasonable, and threatens the health and safety of U.S. consumers, who are harmed by high prices for prescription drugs. The Bayh-Dole Act authorizes the Department of Health and Human Services to authorize any other person to use U.S. patent number 4599353 under these circumstances. We request that the Department use this authority and to remedy Pfizer's abusive practices and to increase access to a needed medicine.

5.1 Statutory background of the Bayh Dole Act

The Bayh-Dole Act in 1980, Pub. L. 96-517, §6, liberalized the circumstances under which recipients of federal funds could elect to retain title to inventions conceived in the performance of Federal contracts, subject to specific government rights to use the patent or license its use to others.[2] Congress believed that allowing contractors to elect to retain title to any subject invention would "use the patent system to promote the utilization [and commercialization] of inventions arising from federally supported research or development." 35 U.S.C. § 200. At the same time, Congress intended "to ensure that the Government obtains sufficient rights in federally supported inventions to meet the needs of the Government and protect the public against nonuse or unreasonable use of inventions." 35 U.S.C. § 200.

Section 203(a) of the Bayh-Dole Act authorizes the Government to take steps to ensure that inventions are licensed to the public on "terms that are reasonable under the circumstances".[3] The agency may require the contractor to issue licenses on reasonable terms or, if the contractor fails to do so, the agency may grant the license itself on such terms as it finds to be reasonable.

5.2 The patents cover "subject inventions" under the Bayh-Dole Act

The Bayh-Dole Act, 35 U.S.C. § 200 et seq, authorizes the Federal government to grant licenses to third parties to use any patented invention "conceived or first actually reduced to practice in the performance of work under a [Federal] funding agreement." 35 U.S.C. § 202(a); 35 U.S.C. 201(e). As described above, latanoprost was discovered or first actually reduced to practice in the performance of U.S. Public Health Service Research Grant Numbers EY 00333 and EY 00402 from the National Eye Institute, Department of Health and Human Services.

The relevant patent contains an admission that it is a subject invention under the Bayh-Dole Act. Federal regulations implementing the Bayh-Dole Act require that contractors identify all inventions conceived or reduced to practice in the performance of a federal grant by including, on all patent applications and any patent issuing, the statement: "This invention

---

[2] The original Act was limited to nonprofit or small businesses. Executive Order 12591, 52 Fed.Reg. 13414 (1987) extended the benefits of Bayh-Dole to all government contractors, including larger businesses.

[3] Section 203(a) states:

With respect to any subject invention in which a small business firm or nonprofit organization has acquired title under this chapter, the Federal agency under whose funding agreement the subject invention was made shall have the right, in accordance with such procedures as are provided in regulations promulgated hereunder to require the contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the contractor, assignee or exclusive licensee refuses such request, to grant such a license itself, if the Federal agency determines that such--

1. action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;
2. action is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees;
3. action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee, or licensees; or
4. action is necessary because the agreement required by section 204 has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of its agreement obtained pursuant to section 204.5

was made with government support under (identify contract) awarded by (identify the Federal agency). The government has certain rights in the invention." 34 C.F.R. § 401.14(f)(4). Patent number 4599353 contains this admission, stating under the heading Government Rights:

> The invention described herein was made in the course of work under U.S. Public Health Service Research Grant Numbers EY 00333 and EY 00402 from the National Eye Institute, Department of Health and Human Services.

5.3 The inventions are subject to government march-in under section 203

The march-in rights in Section 203(a) authorize the funding agency to require the patent assignee or exclusive licensee to grant a license "to a responsible applicant or applicants, upon terms that are reasonable under the circumstances." If the assignee or exclusive licensee refuses such request, the agency may grant the license itself if it determines that one of several grounds for a march-in exists.

The first ground for a march-in is when "action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention." 35 U.S.C. § 203(a)(1). The Act defines "practical application" as including "that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms." 35 U.S.C. § 201(f). A second ground exists if "action is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee, or their licensees." 35 U.S.C. § 203(a)(2). Both of these grounds exist in the case of Abbott's marketing practices with respect to latanoprost.

6 Latanoprost is not being made available to the public on reasonable terms

6.1 Under section 203, "reasonable terms" includes a reasonable price

As professors Peter Arno and Michael Davis demonstrate through a survey of case law, the ordinarily understood meaning of the words "reasonable terms" in U.S. law includes reasonable prices:

> In the United States in similar contexts, the words "reasonable terms" have uniformly been interpreted to include price. In *Byars v. Bluff City News Co.*, the United States Court of Appeals for the Sixth Circuit, recognizing that establishing "reasonable terms" is necessary to remedy a monopolistic market, noted that "[t]he difficulty of setting reasonable terms, especially price, should be a substantial factor" in how to proceed. Similarly, in *American Liberty Oil Co. v. Federal Power Commission*, the United States Court of Appeals for the Fifth Circuit, interpreting a statute that allows the Federal Power Commission to establish "reasonable terms and conditions," concluded that this meant that the "price . . . must be reasonable." In *Commercial Solvents Corp. v. Mellon*, the United States Court of Appeals for the D.C. Circuit addressed prices under a statute that demanded "reasonable terms as to quality, price and delivery"; this language shows that the word "terms" includes, as a matter of common sense, the element of price. In *United States v. Mississippi Vocational Rehabilitation for the Blind*, the United States District Court for the Southern District

> of Mississippi similarly interpreted a statute that allowed organizations to operate vending machines on "reasonable terms" at the Stennis Space Center. Such reasonable terms, the court implied, include "prices and vending operations." . . . In *United States v. United States Gypsum Co.*, the United States District Court for the D.C. Circuit held that "reasonable terms and conditions" includes prices. Finally, in *South Central Bell Telephone Co. v. Louisiana Public Service Commission*, the Louisiana Supreme Court considered the meaning of "reasonable terms" and concluded that, although such things as timing and performance might be important, the most important and central factor is, of course, price.[4]

The legislative history demonstrates that Congress intended the "reasonable terms" language in section 203 to include reasonable pricing. Throughout the hearings and other legislative history of the Bayh-Dole Act, "Congress's concern with march-rights focused exclusively on maintaining competitive conditions, controlling profits, and doing so through price control."[5] This consensus was recorded in the Senate's Committee Report on the bill, which explained that march-in rights were intended to insure that no "windfall profits" or other "adverse effects result from retention of patent rights by these contractors."[6] Notably, the proposal by the Electronic Industry Association that "practical application" be rewritten to mean "that the invention is being worked *or* that its benefits are available to the public either on reasonable terms or through reasonable licensing" was rejected.[7] To meet the practical application definition, the invention must both be practiced *and* available to the public on reasonable terms.

6.2 Pfizer's policy of charging US consumers more for Xalatan is not reasonable

Pfizer's pricing policies clearly violate the reasonable terms requirement of the Bayh-Dole Act. U.S. consumers are being charged a higher price for latanoprost than every country surveyed by Essential Inventions, Inc. Indeed, Pfizer is charging U.S. consumers 2-5 times the price that most consumers in Canada and Europe are charged. A reasonable price for U.S. consumers, who funded the early development of latanoprost, would be a *lower* price than in developed economies that did not invest in the development of the drug. Pricing policies for a U.S. government funded invention cannot be reasonable when they discriminate against U.S. consumers.

---

[4] Peter S. Arno & Michael H. Davis, *Why Don't We Enforce Existing Drug Price Controls? The Unrecognized and Unenforced Reasonable Pricing Requirements Imposed upon Patents Derived in Whole or in Part from Federally Funded Research*, 75 Tulane L. Rev. 631, 660-661 (2001) (internal citations omitted).

[5] Arno and Davis at 659; *see* Government Patent Policy: Hearings Before the Subcommittee on Science, Research and Technology of the House Committee on Science and Technology, 96th Cong. 1st Session at 48 (1979) (statement of Harry F. Manbeck, General Patent Counsel for General Electric Company, that "if [a contractor] fails to supply the market adequately at a fair price, then there is reason for requiring it to license both the background patents and the patents stemming from the contract work."); *see id.* at 317 (statement of Mr. Manbeck that march in rights are "part of the answer to the so-called windfall situation").

[6] S. Rep. No. 96-480 at 30; *accord* The University And Small Business Patent Procedures Act, Hearings Before the Senate Committee on Judiciary, 96th Cong., 1st Sess., 1979, at 44 (statement of Senator Bayh that the march-in provisions were meant to control the ability of "the large, wealthy, corporation to take advantage of Government research and thus to profit at taxpayers' expense.").

[7] Patent Policy: Hearings on S.1215 Before the Subcommittee on Science, Technology and Space of the Senate Committee on Commerce, Science and Transportation, 96th Cong. at 221 (1979) (statement of Peter F. McCloskey, President, Electronic Industry Assn.) (emphasis added).

We propose that the Secretary adopt a presumption that patent owners should not charge US consumers more than is generally charged in countries that are defined by the World Bank as high income.

6.3 Action is needed to alleviate health needs

Action by the government in this case is necessary to alleviate the financial strain on consumers of latanoprost. Latanoprost is the most commonly used medicine to treat glaucoma, a condition that primarily affects older Americans and African Americans. Consumers who cannot afford the medication may go blind.

90,000 - 120,000 Americans are currently blind as a result of glaucoma. About 1 in 30 Americans over the age of 40 (between 2 and 3 million) have glaucoma now. Less than half of people with glaucoma are receiving the treatment they need. African Americans are 4-5 times more likely to develop glaucoma than whites, and are also more likely to be living in poverty and to be uninsured. About a fifth of the U.S. population that is over 45 and living in poverty is uninsured.

Poor and elderly Americans cannot afford Pfizer's discriminatory pricing. At $50 for a 4-6 week supply, a year's supply of Xalatan will cost $450 to $650. These amounts are equal to 5-8% of the total income of a single, elderly, individual at the poverty line.

7 Remedy requested

The Bayh-Dole Act authorizes the Department of Health to require that Pfizer issue a license under "terms that are reasonable under the circumstances" and, if Pfizer refuses the request, to grant such a license itself. 35 U.S.C. § 203(a). We request that this authority be used to demand that Pfizer issue an open license for use of the latanoprost patent subject to this complaint. The terms of the license should include a reasonable royalty to Pfizer as well as a contribution to a research and development fund to support discovery of new medicines.

7.1 Open license

7.1.1 Definition of an open license

An open license is a non-exclusive license that is available to any supplier willing to meet standard non-discriminatory terms.

7.1.2 Right to manufacture and export world-wide

The open license should include the full rights under each patent, including the right to manufacture the product abroad and to export to overseas markets. These rights are necessary to enable economies of scale for any supplier to produce at the lowest possible price and to contribute to the alleviation of global treatment needs.

7.2 Proposed Terms of Open License

The Bayh-Dole Act requires that march-in licenses include "terms that are reasonable under the circumstances". We propose that reasonable terms for this case include a royalty to the

patent holder and a special obligation for manufacturers of latanoprost to finance research and development for new medicines.

7.2.1 Royalty to patent owner

We propose that the Bayh-Dole open license provide to the owners of the latanoprost patent a combined royalty of 5 percent of the net sales of the generic latanoprost. The five percent royalty is roughly equal to the average US pharmaceutical royalty payment, as reported by the pharmaceutical manufacturing sector to the US Internal Revenue Service. This is adequate given that the invention was made through a government funding agreement and that Pfizer's robust sales have more than compensated for its contribution to the development of the medicine plus a healthy profit.

8 Special obligation to finance R&D

We anticipate and share concerns that efforts to reduce prices for this government-funded invention will reduce profits to Pfizer and may reduce somewhat private sector incentives to invest in research and development. The open license for the production and sale of latanoprost can include a special requirement that a portion of sales be directed to Fund for research and development of new treatments for vision impairment. We outline different models that could be used to manage this Fund. One possible approach is the creation of a privately managed fund for research and development on new medicines. Another option is to require that the R&D funds be managed by the NIH's National Eye Institute, which funded the initial invention.

8.1 Creation of fund for neglected R&D

We propose that the open license contain a provision that requires every manufacturer of generic latanoprost to make a contribution to a Fund for research and development of new treatments for vision impairments. The Secretary has wide latitude to determine if such a Fund is necessary, and if so, the size of the contributions to the Fund, the management of the Fund, and the allocation of intellectual property rights. The following proposals are among those the Secretary might consider:

8.1.1 Mission of the fund

The mission of the fund could be to support development of new treatments based on novel scientific ideas that may not receive adequate investment but for the presence of the fund.

8.1.2 Required contribution to fund

Each manufacturer of latanoprost under the open license could be required to contribute to an R&D Fund. We recommend consideration of the following required contributions:

1. For the US and other countries designated by the World Bank as High Income, a sum such as $5 for each equivalent unit (2.5ML bottle 0.005% solution).

2. For countries designed by the World Bank as Low Income, a minimum contribution of zero.

3. For countries designed by the World Bank as middle income, the minimum contribution of $5 for each equivalent unit (2.5ML bottle 0.005% solution), multiplied by the ratio of the country per capita income divided by the average per capita income of the countries designed by the World Bank as high income.

8.1.3 Advisory board

The Secretary should appoint an advisory board that includes representatives from the community of people with vision impairments and experts in medical research, to review Fund investments.

8.1.4 Management of the Fund

There are a variety of approaches that could be used to manage the Fund, including but not limited the following options:

1. The NIH could manage the R&D Fund
2. A private non-profit foundation could be identified or created to manage the R&D Fund.
3. A for-profit investment Fund could be created, with shares allocated on the basis of contributions to the fund.

8.1.5 Ownership of intellectual property rights

The Secretary could choose different approaches to the allocation of intellectual property rights. Essential Inventions, Inc. recommends that commercial discoveries be treated in one of the following manners.

1. The inventions could be owned by the Federal Government. This approach might be particularly appropriate if the Fund is managed by the NIH.
2. The inventions could be owned by the investors in the Fund.
3. The inventions could be owned by the original patent owners.
4. The commercial rights in the inventions could be split evenly between the original patent owners and the investors in the Fund.

Essential Inventions preferred approach is (4).

8.1.6 Transparency of R&D

All contributions to the Fund and all distributions from the fund should be made transparent to the public through appropriate means.

9 Conclusion

The Bayh-Dole Act provides the government with the tools it needs to lower the prices of government funded medicines where the patent holder is abusing its rights, including through the objectionable pricing practices described in this case. We request that you use the march-in provisions of the Act to remedy the abusive practices of Pfizer in its marketing of latanoprost.