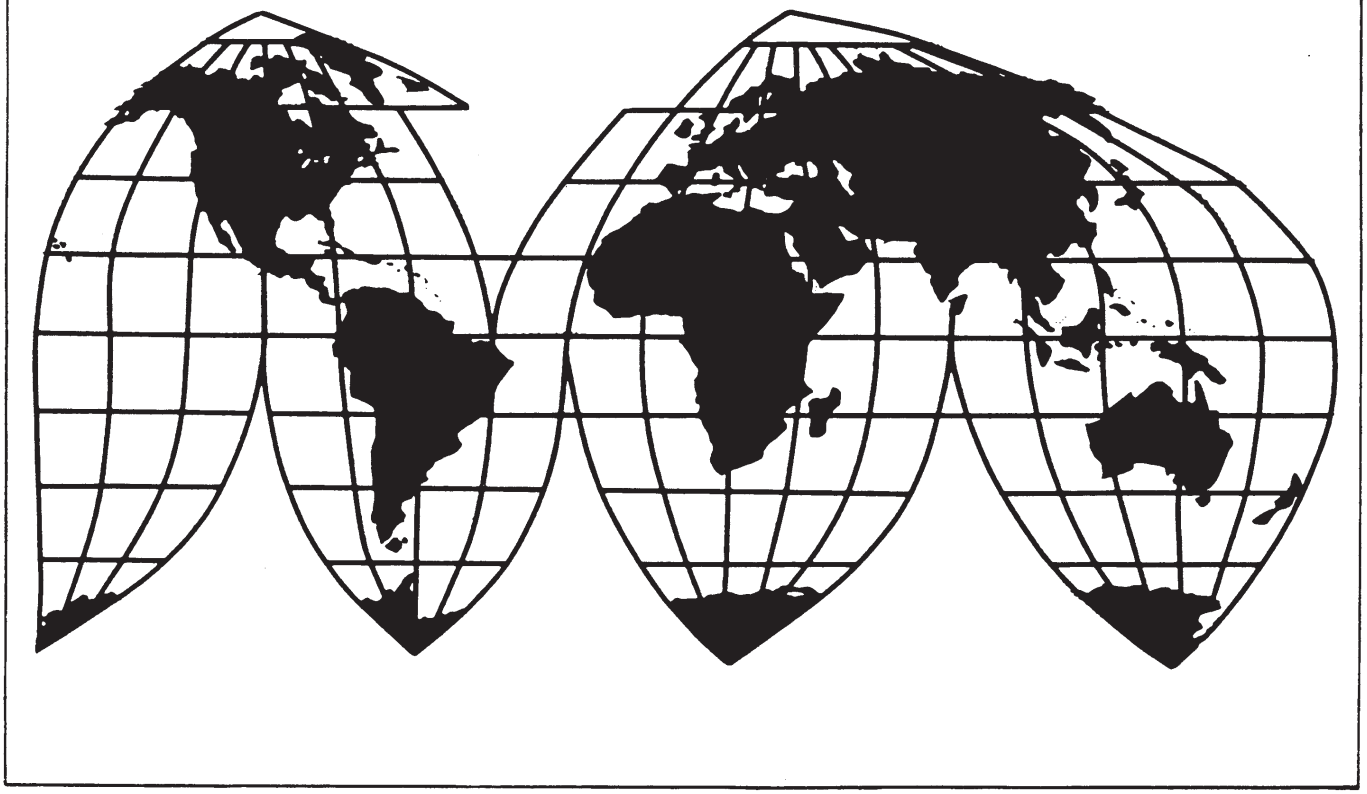
Advice Concerning the Addition of Certain Pharmaceutical Products and Chemical Intermediates to the Pharmaceutical Appendix to the Harmonized Tariff Schedule of the United States

Investigation No. 332-402

Publication 3167 **April 1999**

U.S. International Trade Commission



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Advice Concerning the Addition of Certain Pharmaceutical Products and Chemical Intermediates to the Pharmaceutical Appendix to the Harmonized Tariff Schedule of the United States

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ABSTRACT

On January 13, 1999, at the request of the Office of the United States Trade Representative (USTR),[1] the U.S. International Trade Commission (the Commission) instituted investigation No. 332-402, *Advice Concerning the Addition of Certain Pharmaceutical Products and Chemical Intermediates to the Pharmaceutical Appendix to the Harmonized Tariff Schedule of the United States*, pursuant to section 115 of the Uruguay Round Agreements Act and section 332(g) of the Tariff Act of 1930. As requested by USTR, the Commission's report on the investigation includes the following information:

- A summary description of the products contained in the existing Pharmaceutical Appendix and the modifications to be made to that appendix;
- An explanation of the relationship between the various elements in the Pharmaceutical Appendix and the Harmonized Tariff Schedule of the United States (HTS); and
- An estimate of the current U.S. imports and, where possible, U.S. exports of products included in the existing Pharmaceutical Appendix and the proposed additions to the appendix, based on product groupings as necessary.

As part of the Uruguay Round Agreements, the United States and 21 other major trading countries agreed to the reciprocal elimination of duties on approximately 7,000 pharmaceutical products and chemical intermediates (the latter to be used for the production of pharmaceuticals), as well as certain derivatives of the pharmaceutical products. Effective January 1, 1995, U.S. imports of these products, as enumerated in the Pharmaceutical Appendix to the HTS, have been eligible to enter free of duty under general note 13 to the tariff schedule when the pertinent HTS rate line has the program special rate of duty indicator. The 22 countries also agreed to conduct a review, at least once every 3 years, to identify further products that could be covered by the pharmaceutical duty elimination initiative. The first review concluded with the addition of 496 items,[2] implemented on April 1, 1997.

Participants, including the United States, have undertaken a second review, focusing on the addition of certain pharmaceutical products and chemical intermediates used for the production of pharmaceuticals. USTR has indicated that the Administration's Industry Sector Advisory Committee on Chemicals (ISAC-3) was consulted throughout the review process, and that this ISAC has endorsed the final list of 642 items under consideration.

Public notice of the investigation was posted in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and on the Commission's Internet server

[1] The request from USTR is reproduced in full in appendix A.

[2] For the purposes of this report, the term "items" includes a combination of pharmaceutical products, chemical prefixes and suffixes, and chemical intermediates. However, as noted in USITC Publication 3011 (available at http://www.usitc.gov/332s/332index.htm), the referenced 496 items do not include 81 chemical prefixes and suffixes also added in the first review.

(http://www.usitc.gov) and published in the *Federal Register* (64 FR 3310) of January 21, 1999.[3] Written submissions to the Commission were accepted to allow public comment on this investigation.[4] Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under statutory authority covering the same or similar subject matter.

[3] A copy of the Commission's notice of institution is included in appendix B.
[4] Copies of written submissions are included in appendix C.

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Appendices

CHAPTER 1
Purpose and Scope of Study

On December 23, 1998, the Commission received a letter from the United States Trade Representative (USTR) requesting the institution of an investigation under section 115 of the Uruguay Round Agreements Act (19 U.S.C. 3524) and section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) to provide advice concerning the addition of certain pharmaceutical products and chemical intermediates to the Pharmaceutical Appendix to the *Harmonized Tariff Schedule of the United States* (HTS). The 642 items[1] under consideration are enumerated in the annex to USTR's request letter.[2] Inclusion in the Pharmaceutical Appendix to the HTS would make these pharmaceutical products, certain chemical derivatives, and chemical intermediates, if originating from a normal-trade-relations (NTR)[3] country, eligible for duty-free entry into the United States whenever they are classifiable in an HTS rate line that is likewise eligible (by virtue of a special duty rate indicator) and the importer properly claims this treatment.

USTR asked the Commission to provide advice in the form of the following information: (1) a summary description of the products contained in the existing Pharmaceutical Appendix and the modifications to be made to that appendix; (2) an explanation of the relationship between the various elements in the Pharmaceutical Appendix and the HTS; and (3) an estimate of the current U.S. imports and, where possible, current U.S. exports of the products included in the existing Pharmaceutical Appendix and the proposed additions to the appendix, based on product groupings as necessary. USTR requested that the Commission submit this information in a report by April 1, 1999.

During the Uruguay Round, the United States proposed the reciprocal elimination of duties in several industrial sectors, including pharmaceuticals.[4] As part of the Uruguay Round Agreements, the United States and 21[5] other major trading countries negotiated the reciprocal elimination of duties on approximately 7,000 pharmaceutical products and chemical intermediates (the latter to be used for the production of pharmaceuticals), as well as certain derivatives of the pharmaceutical products. Effective January 1, 1995, U.S. imports of these products, as enumerated in the Pharmaceutical Appendix to the HTS, have been eligible to enter free of duty under general note 13 to the tariff schedule, as described above.

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[1] For the purposes of this report, the term "items" includes a combination of pharmaceutical products, chemical prefixes and suffixes, and chemical intermediates.

[2] A copy of the letter, including its annex, can be found in appendix A.

[3] Formerly most-favored-nation (MFN).

[4] This proposal by the United States was known as the "zero-for-zero" initiative.

[5] The 21 countries include the EU-15 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom), Canada, the Czech Republic, Japan, Norway, the Slovak Republic, and Switzerland. The Czech Republic and the Slovak Republic have agreed to the staged elimination of tariffs, while the other 20 countries eliminated their tariffs immediately.

The 22 countries also agreed to conduct a review, at least once every 3 years, to identify further products that could be covered by the pharmaceutical duty elimination initiative. The first review[6] concluded with the addition of 496 items to the Pharmaceutical Appendix, implemented on April 1, 1997. Participants, including the United States, have undertaken a second review, which has resulted in the 642 items included in this investigation. Of these, 272 are pharmaceutical products with International Nonproprietary Names[7] (INNs), 365 are chemical intermediates, and 5 are chemical prefixes or suffixes[8] that may be combined with approved INNs. These additional products represent products recommended by the U.S. private sector in response to a notice published by USTR in the *Federal Register* of December 29, 1997, as well as products proposed by the Governments of other participating countries. The Administration's Industry Sector Advisory Committee on Chemicals (ISAC-3) was consulted throughout the review process, and this ISAC has endorsed the final list of items under consideration.

Organization of the Report

In response to the USTR request for information in three specific areas, the Commission report has been organized into three chapters. This first chapter presents a summary description of the products contained in the existing Pharmaceutical Appendix as well as the proposed additions to the appendix. In order to explain the context in which these proposed tariff eliminations will likely occur, chapter 1 also includes an overview of the U.S. chemical and pharmaceutical industries. Chapter 2 explains the relationship of the various elements in the Pharmaceutical Appendix to the HTS. Chapter 3 provides estimates of U.S. imports and, where possible, U.S. exports of the products included in the Pharmaceutical Appendix and the proposed additions to the appendix, based on product groupings as necessary.

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[6] See USITC Publication 3011 (http://www.usitc.gov/332s/332index.htm) for the Commission's advice on the 496 items, not including 81 chemical prefixes and suffixes, added in the first review.

[7] An International Nonproprietary Name is the name recommended by the World Health Organization (WHO) as a universal term for a given pharmaceutical. In contrast, a brand name is given by an individual company, and it may be completely different from the INN for the same product.

[8] The combination of the approved chemical prefixes or suffixes with any of the approved INNs results in a chemical derivative, known as a modified INN (INNM), that is also allowed duty-free entry.

Description of the Products Covered

The products addressed in this investigation include dosage-form pharmaceuticals, bulk pharmaceuticals, and chemical intermediates used in the production of pharmaceuticals. Dosage-form pharmaceuticals are those products formulated in dosage forms and packaged for retail sale. Bulk pharmaceuticals are active pharmaceutical ingredients that have not yet been put up in individual dosages and therefore are sold in bulk form. Chemical intermediates are those chemicals that form during interim chemical reaction steps in production processes that require multiple chemical reactions. As such, the chemical intermediates included in this study are the chemical precursors to final pharmaceutical products.

Pharmaceuticals (SIC 283, "Drugs")[9] are used in the prevention, diagnosis, alleviation, treatment, or cure of disease in humans or animals. However, the initiative to eliminate duties in the pharmaceutical sector only involves pharmaceuticals intended for human use. Dosage-form products are marketed or otherwise made available to the final consumer as generic or brand name products, either of which may require a prescription or be sold "over the counter" (OTC). Bulk active pharmaceutical ingredients are generally consumed by pharmaceutical firms and formulators in preparation of dosage-form products.

Dosage-form pharmaceutical products are generally classified in chapter 30 of the HTS, "Pharmaceutical Products." The majority of active pharmaceutical ingredients and chemical intermediates are organic chemicals. As a result of their chemical structures, these goods are primarily classified in chapter 29 of the HTS, "Organic Chemicals." Within chapter 29, there are certain 4-digit headings under which classes of bulk active ingredients are grouped by use, including:

HTS heading 2936 . . . . . Provitamins and vitamins
HTS heading 2937 . . . . . Hormones
HTS heading 2939 . . . . . Alkaloids
HTS heading 2941 . . . . . Antibiotics

In general, the remaining active pharmaceutical ingredients are classified in chapter 29 based on chemical structure, occasionally with 8-digit subheadings that are specifically applicable to drugs.

[9] The Standard Industrial Classification (SIC) system has been replaced by the North American Industry Classification System (NAICS). However, data used in this report were presented by SIC codes in U.S. Department of Commerce publications. SIC 283 corresponds to NAICS 3254, Pharmaceutical and Medicine Manufacturing.

Overview of the U.S. Chemical and Pharmaceutical Industries

Finished pharmaceutical products and pharmaceutical active ingredients are primarily manufactured by pharmaceutical companies. Chemical intermediates included in this investigation, however, may be produced either by chemical companies or by pharmaceutical companies, depending on several factors. Pharmaceutical companies are most likely to produce a chemical intermediate that occurs in a reaction step that immediately precedes the production of the desired final product, whereas chemical companies are often the source of a chemical intermediate that is produced early in the production process of an active pharmaceutical ingredient. The U.S. chemical and pharmaceutical industries typically have multinational operations, are subject to extensive regulation of their products, utilize state-of-the-art technology, and are capital- and technology-intensive. However, the U.S. chemical industry has production facilities throughout the United States, while the U.S. pharmaceutical industry is geographically concentrated in California, New Jersey, New York, and Pennsylvania.[10]

Both industries have large research and development (R&D) expenditures compared to other manufacturing industries. R&D spending by the chemical and allied products industry (SIC 28)[11] totaled $17.5 billion in 1996, reflecting a 1-percent rise over spending in 1995.[12] The Pharmaceutical Researchers and Manufacturers of America (PhRMA) reports that U.S. pharmaceutical companies spent about $13.6 billion on R&D in 1996, roughly 75 percent of the overall chemical industry total.[13] Because it is necessary to regulate the safety and prove the efficacy of pharmaceuticals more carefully than most other chemical products, product development is typically longer, and concomitantly more expensive, than in other chemical sectors.

At the aggregated level, data for the chemical and allied products industry include data for the pharmaceutical industry. Table 1-1 presents data for the overall chemical industry as well as the pharmaceutical sector and the industrial organic chemicals sector (SIC 286),[14] which includes the organic chemical intermediates under consideration in this investigation. In 1997, shipments by the chemical and allied product industry totaled approximately $362.0 billion. Industry employment for 1997 amounted to over 1.0 million employees, with production workers accounting for approximately 55 percent of the total. U.S. imports of products classified under SIC 28 were valued at $48.4 billion in 1997; U.S. exports were valued at $65.1 billion for the same year. In 1997, SIC 283 and SIC 286 combined accounted for

[10] For the purposes of this study, the U.S. chemical and pharmaceutical industries are considered to include firms of foreign ownership operating in the United States.

[11] Roughly corresponds to NAICS 325, Chemical Manufacturing; see footnote 9.

[12] "R&D Spending Rises in 1998," *Chemical and Engineering News*, Oct. 19, 1998, p. 65. The most recent aggregate data for the chemical industry, as compiled by the National Science Foundation, are for 1996.

[13] PhRMA, *Industry Profile, 1998*, p. 90.

[14] Corresponds to NAICS 325191, 32511 (pt.), 325132, 325192, 32511 (pt.), 325188 (pt.), 325193, 32512 (pt.), 325199 (pt.); see footnote 9.

approximately 46 percent of total U.S. apparent consumption of chemicals, 47 percent of total U.S. trade in chemicals, and 39 percent of total U.S. employment in the chemical industry.[15]

Table 1-1
SIC[1] 28, 283, and 286: U.S. shipments, imports for consumption, exports of domestic merchandise, trade balance, apparent consumption, total employment, and production workers, 1997

Product groupings	U.S. shipments[2]	U.S. imports	U.S. exports	U.S. trade balance	U.S. apparent consumption	Total employment[3]	Production workers[3]
	(Billion dollars)					*(Thousand persons)*	
SIC 28: Chemicals and Allied Products	362.0	48.4	65.1	16.7	345.3	1,027	568
SIC 283: Drugs	82.5	14.2	10.4	-3.8	86.3	260	117
SIC 286: Industrial Organic Chemicals	74.7	13.0	15.7	2.7	72.0	142	81

[1] The Standard Industrial Classification (SIC) system has been replaced by the North American Industry Classification System (NAICS); however, data used in this report were presented by SIC codes in U.S. Department of Commerce publications.
[2] Estimated by the U.S. Department of Commerce.
[3] "Facts and Figures for the Chemical Industry," *Chemical and Engineering News*, June 29, 1998, p. 43.

Source: Official statistics of the U.S. Department of Commerce, except as noted.

[15] Data from the official statistics of the U.S. Department of Commerce and "Facts and Figures for the Chemical Industry," *Chemical and Engineering News*, June 29, 1998, p. 43.

CHAPTER 2
Description of the Pharmaceutical Appendix to the Harmonized Tariff Schedule of the United States

The elimination of duties on certain pharmaceutical products, their derivatives, and chemical intermediates used in the production of pharmaceuticals was reflected in the HTS in two ways. First, the general (or NTR) tariffs were eliminated for all products classified in chapter 30 of the HTS, "Pharmaceutical Products," and in chapter 29 under the headings 2936, 2937, 2939, and 2941[16]. As a result, tariffs on most dosage-form pharmaceuticals (chapter 30) and many bulk active ingredients (chapter 29) were eliminated immediately. Second, the Pharmaceutical Appendix to the HTS was created to enumerate the products,[17] their derivatives, and the chemical intermediates that are eligible for duty-free entry.

In the HTS, the symbol "K" was added to the special rates of duty subcolumn for those 8-digit subheadings which contain active ingredients and chemical intermediates eligible for duty-free treatment along with other dutiable goods.[18] Because the "K" may appear for a subheading that includes a broad range of goods, an individual product must also be listed in the Pharmaceutical Appendix to be eligible to enter free of duty.[19] These special duty rates are available to NTR trading partners only and must be claimed by importers for each shipment.

The Pharmaceutical Appendix to the HTS comprises three tables. Table 1 lists eligible pharmaceuticals by their INNs. Originally, table 1 contained the pharmaceuticals found in the World Health Organization (WHO) Proposed INN Lists 1-69. In the first review of the Pharmaceutical Appendix, INNs from WHO lists 70-73 were added. This investigation includes 272 INNs from WHO lists 74-78. As noted above, any product classified in chapter 30 or in HTS subheadings 2936, 2937, 2939, or 2941 is eligible for duty-free entry regardless of whether that product is listed in the Pharmaceutical Appendix.

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[16] The exception is 2941.20.10, "Dihydrostreptomycin and its derivatives; salts thereof," which has a tariff of 3.5% ad valorem in the 1999 *HTS*.

[17] Although many finished pharmaceutical products and bulk active ingredients listed in the Pharmaceutical Appendix enter free of duty because of their classification in chapter 30 or the four headings of chapter 29, the names of such products were retained in the appendix to avoid the loss of duty-free status if those products were classified under any HTS subheadings other than those specified as being free of duty.

[18] Chapter 30 and subheadings 2936, 2937, 2939, and 2941 of the HTS do not use the "K" symbol because their general tariffs were eliminated for all products contained therein.

[19] Certain derivatives, which consist of an INN listed on Table 1 of the Pharmaceutical Appendix and a prefix or suffix found on Table 2 of the Pharmaceutical Appendix, enter free of duty if the subheading under which they are classified bears the "K" symbol.

Table 2 lists prefixes and suffixes that can be combined with the INNs found on table 1 to generate the names of approved chemical derivatives, such as acids, esters, or salts, of those INNs. The majority of these derivatives are classified in chapters 29, 30, and 39 of the HTS. Most INNs can form multiple permutations of derivatives, making it is impossible to quantify the exact number that are eligible for duty-free entry under the Pharmaceutical Appendix. Originally, there were 310 items listed in table 2. As a result of the first review process, 81 prefixes and suffixes were added; in this review, 5 prefixes and suffixes are under consideration for inclusion.

Table 3 lists chemicals used as intermediates in the production of pharmaceutical products. The majority of these chemicals are classified in chapters 29 and 39 of the HTS, although others are found in chapters 25, 28, 32, 34, 35, and 38. Over 300 chemicals were included on the original table 3, with another 232 chemicals added through the first review. In this second review, 365 chemical intermediates have been proposed for addition to the Pharmaceutical Appendix.

CHAPTER 3
Estimates of Current U.S. Trade in the Products Included in the Existing Pharmaceutical Appendix and the Proposed Additions to the Appendix

Trade data are provided below for the products included in the existing Pharmaceutical Appendix as well as for the proposed additions to the appendix. The request from USTR asks for current U.S. imports and, where available, current U.S. exports. For products classified in chapter 30 of the HTS and HTS headings 2936, 2937, 2939, and 2941 (certain bulk active ingredients), U.S. import and U.S. export data for 1997-98 are found in table 3-1 of this report. For those products currently entering at the pharmaceutical special rate of duty, U.S. import data for 1997-98 are presented in table 3-2. Because U.S. export data are not reported using the "K" or any analogous symbol, no comparable statistics are available for exports of these products.

With regard to the proposed additions to the Pharmaceutical Appendix, the Commission is unable to provide official trade statistics because the 8-digit classifications of all goods included in this study cover multiple products. In the *Federal Register* notice announcing the institution of this study (64 FR 3310), the Commission requested written submissions concerning levels of trade for the proposed items. Only one submission was received.

U.S. industry representatives[20] provided trade data estimates on the proposed additions to the Pharmaceutical Appendix (table 3-3); these data should be taken as a lower bound estimate of the 1998 trade of these chemicals, in no way reflecting possible increases in trade that might result from duty elimination. Additionally, certain chemical intermediates may be used in pharmaceutical products that are in the final stages of the regulatory approval process; therefore, neither the final product nor the intermediate is currently produced or traded in large quantities. It can be expected that once such pharmaceutical products are approved, trade of the chemicals used in their production will rise significantly. Also, the data reported to the Commission do not include approximately 600 of the pharmaceutical products and chemical intermediates under review. Lastly, these data do not include trade of the INN derivatives that would enter as a result of the proposed changes to the Pharmaceutical Appendix.

[20] These data were submitted through legal counsel by the Pharmaceutical Researchers and Manufacturers of America (PhRMA), a trade association with approximately 100 member companies. The data covered 30 of the pharmaceutical products and chemical intermediates under review. A copy of the public version of this submission can be found in appendix C.

Because many of these items are patented or licensed chemicals, with production limited to one or two companies, the data on these products are considered proprietary. As a result, table 3-3 reports an aggregate estimate of trade for all items on which data were reported.

Table 3-1
Products covered under chapter 30[1] and subheadings 2936, 2937, 2939, and 2941 of the HTS: U.S. imports for consumption, exports of domestic merchandise, and trade balance, 1997-98

(Million dollars)

Product grouping	1997	1998
U.S. imports for consumption:		
2936	570	618
2937	372	332
2939	272	211
2941	754	763
Chapter 30	6,804	8,965
Total	8,772	10,889
U.S. domestic exports:		
2936	309	342
2937	354	455
2939	38	32
2941	1,060	1,135
Chapter 30	6,224	7,425
Total	7,985	9,389
U.S. trade balance:		
2936	-261	-276
2937	-18	123
2939	-234	-179
2941	306	372
Chapter 30	-580	-1,540
Total	-787	-1,500

[1] The majority of products covered in chapter 30 of the HTS are finished pharmaceutical products; however, the chapter also includes gauze, bandages, and certain other medical products that are not considered pharmaceuticals.

Source: Compiled by USITC staff from the official statistics of the U.S. Department of Commerce.

Table 3-2
Products imported at the pharmaceutical special rate of duty: U.S. imports for consumption, by six-digit subheadings, 1997-98

(Actual dollars)

Six-digit subheading	U.S. imports, 1997	U.S. imports, 1998
252620	2,130	0
283329	258,319	774,423
284110	0	0
284210	0	0
284290	0	33,517
284330	443,885	879,520
284390	360,122	874,065
284690	6,585,748	11,757,795
290219	160,256	221,159
290290	492,977	422,635
290322	295,366	73,268
290330	57,278	2,855
290344	0	0
290345	0	0
290346	0	0
290349	639,669	512,463
290351	434,665	0
290359	69,250	5,182
290362	0	0
290369	290,487	59,028
290410	0	0
290490	574,395	6,915
290519	14,254	860,315
290522	65,065,523	72,881,461
290529	991,967	34,020
290539	70,800	0
290549	11,000	5,556
290550	782,944	4,264,400
290619	0	230,708
290621	1,772,836	291,476
290629	0	0
290719	495,028	61,618
290729	35,973	1,017,151
290810	9,193,090	9,333,266
290820	0	49,320
290890	0	0
290919	34,446,678	31,281,029
290920	0	102,300
290930	5,420,685	1,548,044
290949	1,275,308	502,814
290950	16,975,371	22,464,306

Table 3-2—*Continued*
Products imported at the pharmaceutical special rate of duty: U.S. imports for consumption, by six-digit subheadings, 1997-98

(Actual dollars)

Six-digit subheading	U.S. imports, 1997	U.S. imports, 1998
291090	40,329	0
291100	150,703	778,301
291219	18,247	9,762
291229	61,698	0
291249	0	0
291419	8,393	6,937
291429	86,982	16,937
291439	1,175,451	1,824,559
291440	0	0
291450	120,311,190	107,598,488
291469	57,275,728	52,677,470
291470	6,598,256	9,783,093
291529	125,438	33,225
291539	4,751,240	4,253,542
291540	5,808	273,590
291550	0	0
291590	16,542,131	19,759,702
291619	60,004	16,048
291620	3,090,547	4,370,079
291631	58,074	435,665
291639	4,758,254	3,730,748
291713	252,330	195,162
291719	168,643	16,439
291720	203,918	118,616
291734	24,087	50,567
291811	103,817	0
291816	96,556	143,789
291817	129,360	92,000
291819	320,019,240	335,168,261
291822	8,036	0
291823	915,908	1,506,323
291829	3,745,667	7,203,877
291830	23,590,451	17,052,927
291890	163,600,006	112,606,004
291900	93,695	355,707
292010	0	0
292090	21,591	293,600
292112	0	0
292119	3,421,577	3,207,765
292129	1,057,618	203,413
292130	2,839,114	5,548,385
292142	233,686	631,325
292145	185,388	86,708

Table 3-2—*Continued*
Products imported at the pharmaceutical special rate of duty: U.S. imports for consumption, by six-digit subheadings, 1997-98

(Actual dollars)

Six-digit subheading	U.S. imports, 1997	U.S. imports, 1998
292149	22,856,735	20,583,615
292159	442,656	44,275
292211	0	0
292212	0	6,903
292219	236,763,853	331,594,472
292229	6,636,736	2,641,410
292230	14,722,469	2,619,411
292241	16,171,923	978,895
292242	1,018,902	610,298
292243	0	0
292249	65,575,454	66,801,170
292250	145,506,261	189,221,594
292310	790,870	531,813
292320	51,906	494,934
292390	27,530,688	24,687,751
292410	15,232,600	19,185,823
292421	5,014,805	6,825,686
292429	452,565,384	421,706,320
292519	11,677,873	12,723,278
292520	19,690,563	32,855,251
292690	33,849,719	28,033,716
292700	734,637	628,882
292800	21,230,264	43,609,126
292990	44,000	13,146
293010	0	0
293020	1,076,141	846,714
293030	0	46,420
293090	52,540,232	38,378,581
293100	226,485,309	374,237,519
293219	359,706,274	31,928,279
293221	95,832	140,491
293229	118,122,082	72,148,496
293299	159,540,916	269,094,181
293311	64,626	62,075
293319	258,143	433,125
293321	161,458	358,629
293329	98,320,453	120,643,123
293339	113,186,394	420,364,405
293340	155,316,057	263,717,893
293351	989,774	1,161,172
293359	177,613,054	152,361,308
293369	15,461,345	17,613,864
293379	17,537,147	29,716,884

Table 3-2—*Continued*
Products imported at the pharmaceutical special rate of duty: U.S. imports for consumption, by six-digit subheadings, 1997-98

(Actual dollars)

Six-digit subheading	U.S. imports, 1997	U.S. imports, 1998
293390	952,677,023	1,360,856,289
293410	92,651,271	199,404,919
293420	9,809,898	17,796,955
293430	13,742,411	13,902,878
293490	1,917,466,873	2,299,072,157
293500	553,143,856	547,027,273
293810	50,701	155,064
293890	13,389,605	14,593,579
294000	13,663,871	14,864,395
294200	6,998,081	8,215,607
320300	15,229	603,022
320413	42,703	0
320419	25,734,610	29,196,613
320490	9,953	0
340213	296,027	1,053,210
350790	11,057,431	9,889,190
380840	0	4,420
382490	9,649,196	12,545,150
390190	151,642	10,887
390290	17,875	103,317
390461	0	147,200
390591	72,852	44,351
390599	6,128,421	5,548,464
390690	1,925,129	237,767
390710	32,618	10,560
390720	49,526	164,920
390730	2,040,349	1,423,807
390760	1,543	534,527
390799	132,006	1,332,008
390810	379,914	352,939
390910	1,016	9,614
390940	149,688	365,587
391000	25,351	260,553
391190	176,845	40,988
391220	0	0
391231	7,678,666	11,696,633
391239	5,661,794	2,599,176
391290	0	30,531
391390	15,685,866	14,324,300
391400	446,011	338,216
Total	7,138,784,551	8,419,007,617

Table 3-2—*Continued*
Products imported at the pharmaceutical special rate of duty: U.S. imports for consumption, by six-digit subheadings, 1997-98

(Actual dollars)

Six-digit subheading	U.S. imports, 1997	U.S. imports, 1998

Note.—U.S. imports of products at the pharmaceutical special rate of duty are tracked using the "K" program code. U.S. export data are not reported using the "K" or any analogous symbol; therefore, no comparable statistics are available for exports of these products.

Source: Official statistics from the U.S. Department of Commerce

Table 3-3
Proposed additions to the Pharmaceutical Appendix to the HTS: Estimates of U.S. imports for consumption, exports of domestic merchandise, and trade balance, 1998

(Thousand dollars)

Product grouping	U.S. imports	U.S. exports	U.S. trade balance
Proposed additions to the Pharmaceutical Appendix[1]	438,204	8,583	-429,621

[1] These estimates include data submitted on approximately 30 of the pharmaceutical products and chemical intermediates under consideration. An aggregate estimate has been reported to protect business confidential information.

Source: Compiled by USITC staff from a submission by the Pharmaceutical Researchers and Manufacturers of America.

APPENDIX A
Request Letter From USTR and Attachment

(Not included in electronic version of this report)

APPENDIX B
Federal Register Notice

[Federal Register: January 21, 1999 (Volume 64, Number 13)]
[Notices]
[Page 3310-3317]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr21ja99-84]

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332-402]

Advice Concerning the Addition of Certain Pharmaceutical Products and Chemical Intermediates to the Pharmaceutical Appendix to the HTS

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation.

SUMMARY: Following receipt on December 23, 1998, of a request from the United States Trade Representative (USTR), the Commission instituted investigation No. 332-402, Advice Concerning the Addition of Certain Pharmaceutical Products and Chemical Intermediates to the Pharmaceutical Appendix to the Harmonized Tariff Schedule of the United States, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)).

At the request of USTR, the Commission will provide: (1) A summary description of the products contained in the existing Pharmaceutical Appendix and the modifications to be made to that Appendix; (2) an explanation of the relationship of the various elements in the Appendix to the HTS; and (3) estimates of current U.S. imports, and where possible, U.S. exports of the products included in the Pharmaceutical Appendix and the proposed additions to the Appendix, based on product groupings as necessary. The Commission will submit its report to the USTR no later than April 1, 1999.

EFFECTIVE DATE: January 13, 1999.

FOR FURTHER INFORMATION CONTACT: Information on general aspects of the study may be obtained from Elizabeth Howlett, Office of Industries (202-205-3365), or, on legal aspects of the investigation, contact William Gearhart of the Commission's Office of the General Counsel (202-205-3091).

Background

As one part of the Uruguay Round Agreements, the United States and 21 other countries agreed to the reciprocal elimination of duties,

effective January 1, 1995, on approximately 7,000 pharmaceutical products and chemical intermediates used primarily for the production of pharmaceuticals. Commitments to eliminate duties on these products are reflected in each participant's market access schedule.

These countries also agreed to conduct a review, at least once every three years, to identify further products that could be covered by the pharmaceutical duty elimination initiative. The first review concluded with the addition of approximately 470 products, implemented on April 1, 1997. Participants, including the United States, are undertaking a second review, focusing on the addition of approximately 750 pharmaceutical products and chemical intermediates used primarily for the production of pharmaceuticals (a list of covered products is attached). According to USTR, these additional products represent products recommended by the U.S. private sector in response to a notice published by USTR in the Federal Register of December 29, 1997, as well as products proposed by the Governments of other participating countries. According to USTR, the Industry Sectoral Advisory Committee on Chemicals (ISAC-3) was consulted throughout the negotiations and this ISAC has endorsed the final list of products under consideration.

In section 111(b) of the URAA, Congress explicitly authorized the President to proclaim further modification of any duty for articles contained in a tariff category that was part of the U.S. ``zero-for-zero'' initiative. The Statement of Administrative Action which Congress approved in the URAA notes that the President would use section 111(b) authority to grant duty-free treatment for new pharmaceutical products such as those now under consideration. This authority is subject only to the conditions set forth in section 111 which include compliance with the consultation and layover provisions of section 115 of the URAA. One of the requirements set out in section 115 is that the President ``obtain advice regarding the proposed action'' from the Commission. Pursuant to section 115 and section 332(g) of the Tariff Act of 1930, USTR has requested that the Commission provide advice in the form of additional information on the pharmaceutical products and chemical intermediates currently under consideration.

Written Submissions

Interested persons are invited to submit written statements concerning the investigation. Written submissions should focus on the levels of exports and imports for the items included in this investigation. Written statements should be received by the close of business on February 17, 1999. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked ``Confidential Business Information'' at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business

information, will be made available for inspection by interested persons. All submissions should be addressed to the Secretary at the Commission's office in Washington, D.C. The Commission's rules do not authorize filing submissions with the Secretary by facsimile or electronic means.

Hearing-impaired individuals are advised that information on this matter can be obtained by contacting our TDD terminal on (202) 205-1810.

By order of the Commission.

Issued: January 14, 1999.
Donna R. Koehnke,
Secretary.

Additional Prefixes and Suffixes for Salts, Esters and Hydrates of INNS

Benzoate
Difumarate
Dipivoxil
Monobenzoate
Tetraisopropyl

International Nonproprietary Names (INN) Proposed for Duty Elimination

INN	CAS RN
Abacavir	136470-78-5
Abafungin	129639-79-8
Abarelix	183552-38-7
Abiraterone	154229-19-3
Acreozast	123548-56-1
Agomelatine	138112-76-2
Alatrofloxacin	157182-32-6
Alinastine	154541-72-7
Almotriptan	154323-57-6
Almurtide	61136-12-7
Amelometasone	123013-22-9
Amlintide	122384-88-7
Apadoline	135003-30-4
Arcitumomab	154361-48-5
Aripiprazole	129722-12-9
Arofylline	136145-07-8
Aseripide	153242-02-5
Asimadoline	153205-46-0
Atiprimod	123018-47-3
Atizoram	135637-46-6
Atliprofen	108912-17-0
Atreleuton	154355-76-7

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Aviptadil	40077-57-4
Avitriptan	151140-96-4
Avorelin	140703-49-7

Avotermin	**182212-66-4**
Bamaquimast	**135779-82-7**
Basiliximab	**179045-86-4**
Becaplermin	**165101-51-9**
Bectumomab	**158318-63-9**
Belaperidone	**156862-51-0**
Beloxepin	**135928-30-2**
Bepotastine	**125602-71-3**
Bibapcitide	**153507-46-1**
Biricodar	**159997-94-1**
Blonanserin	**132810-10-7**
Brasofensine	**171655-91-7**
Brinzolamide	**138890-62-7**
Carafiban	**177563-40-5**
Cariporide	**159138-80-4**
Cedelizumab	**156586-90-2**
Ceftizoxime alapivoxil	**135821-54-4**
Celgosivir	**121104-96-9**
Cemadotin	**159776-69-9**
Cerivastatin	**145599-86-6**
Cetermin	**157238-32-9**
Cevimeline	**107233-08-9**
Choriogonadotropin alfa	**177073-44-8**
Cizolirtine	**142155-43-9**
Clenoliximab	**182912-58-9**
Clevidipine	**166432-28-6**
Clevudine	**163252-36-6**
Colesevelam	**182815-43-6**
Dabelotine	**118976-38-8**
Dalcotidine	**120958-90-9**
Danaparoid sodium	**83513-48-8**
Daniplestim	**161753-30-6**
Dapitant	**153438-49-4**
Declopramide	**891-60-1**
Deltibant	**140661-97-8**
Dexefaroxan	**143249-88-1**
Dexsotalol	**30236-32-9**
Donepezil	**120014-06-4**
Dronedarone	**141626-36-0**
Droxinavir	**159910-86-8**
Dutasteride	**164656-23-9**
Ecenofloxacin	**162301-05-5**
Edrecolomab	**156586-89-9**
Efavirenz	**154598-52-4**
Elacridar	**143664-11-3**
Eldacimibe	**141993-70-6**
Eletriptan	**143322-58-1**
Elinafide	**162706-37-8**
Embusartan	**156001-18-2**
Emoctakin	**142298-00-8**
Eniluracil	**59989-18-3**
Enlimomab pegol	**169802-84-0**
Ensaculin	**155773-59-4**
Eperezolid	**165800-04-4**
Eplerenone	**107724-20-9**
Eptifibatide	**148031-34-9**
Fabesetron	**129300-27-2**
Fandofloxacin	**164150-99-6**
Faralimomab	**167816-91-3**
Fasidotril	**135038-57-2**
Fasoracetam	**110958-19-5**
Felvizumab	**167747-20-8**
Fexofenadine	**83799-24-0**

Fidarestat	**136087-85-9**
Filaminast	**141184-34-1**
Flibanserin	**167933-07-5**
Follitropin beta	**150490-84-9**
Fomivirsen	**144245-52-3**
Forasartan	**145216-43-9**
Foropafant	**136468-36-5**
Frovatriptan	**158747-02-5**
Fudosteine	**13189-98-5**
Fulvestrant	**129453-61-8**
Furomine	**142996-66-5**
Gacyclidine	**68134-81-6**
Ganaxolone	**38398-32-2**
Gatifloxacin	**160738-57-8**
Gavestinel	**153436-22-7**
Glaspimod	**134143-28-5**
Glufosfamide	**132682-98-5**
Hemoglobin crosfumaril	**142261-03-8**
Ibutamoren	**159634-47-6**
Icopezil	**145508-78-7**
Igovomab	**171656-50-1**
Indinavir	**150378-17-9**
Indisetron	**141549-75-9**
Infliximab	**170277-31-3**
Insulin aspart	**116094-23-6**
Insulin glargine	**160337-95-1**
Interferon alfacon-1	**118390-30-0**
Iocanlidic acid (123 I)	**74855-17-7**
Ioflupane (123 I)	**155798-07-5**
Iometopane (123 I)	**136794-86-0**
Ipamorelin	**170851-70-4**
Iroplact	**154248-96-1**
Israpafant	**117279-73-9**
Ivabradine	**155974-00-8**
Keliximab	**174722-30-6**
Lagatide	**157476-77-2**
Landiolol	**133242-30-5**
Lanepitant	**170566-84-4**
Lasinavir	**175385-62-3**
Ledoxantrone	**113457-05-9**
Lefradafiban	**149503-79-7**
Levocetirizine	**130018-77-8**
Levosalbutamol	**34391-04-3**
Licostinel	**153504-81-5**
Linetastine	**159776-68-8**
Linezolid	**165800-03-3**
Lintitript	**136381-85-6**
Lintuzumab	**166089-32-3**
Lirexapride	**145414-12-6**
Lodenosine	**110143-10-7**
Lotrafiban	**171049-14-2**
Lumefantrine	**82186-77-4**
Lurtotecan	**149882-10-0**
Mazokalim	**164178-54-5**
Melagatran	**159776-70-2**
Meluadrine	**134865-33-1**
Mespiperone (11 C)	**94153-50-1**
Metesind	**138384-68-6**
Milacainide	**141725-10-2**
Milameline	**139886-32-1**
Milfasartan	**148564-47-0**
Milodistim	**137463-76-4**
Minalrestat	**129688-50-2**

Minodronic acid	**127657-42-5**
Miproxifene	**129612-87-9**
Mitiglinide	**145375-43-5**
Mivobulin	**122332-18-7**
Moxifloxacin	**151096-09-2**
Moxilubant	**146978-48-5**
Nagrestipen	**166089-33-4**
Nateglinide	**105816-04-4**
Nelfinavir	**159989-64-7**
Nelzarabine	**121032-29-9**
Nepadutant	**183747-35-5**
Nepafenac	**78281-72-8**
Nepaprazole	**156601-79-5**
Nepicastat	**173997-05-2**
Nerelimomab	**162774-06-3**
Nifekalant	**130636-43-0**
Nolatrexed	**147149-76-6**
Nolpitantium besilate	**155418-06-7**
Nonacog alfa	**113478-33-4**
Oberadilol	**114856-44-9**
Omapatrilat	**167305-00-2**
Omiloxetine	**176894-09-0**
Opanixil	**152939-42-9**
Opratonium iodide	**146919-78-0**
Oprelvekin	**145941-26-0**
Orazipone	**137109-78-5**
Orbofiban	**163250-90-6**
Osanetant	**160492-56-8**
Osutidine	**140695-21-2**
Pagoclone	**133737-32-3**
Palinavir	**154612-39-2**
Palonosetron	**135729-56-5**
Pamaqueside	**150332-35-7**
Pamiteplase	**151912-42-4**
Paricalcitol	**131918-61-1**
Pegmusirudin	**186638-10-8**
Peldesine	**133432-71-0**
Pelubiprofen	**69956-77-0**
Pemetrexed	**137281-23-3**
Perifosine	**157716-52-4**
Pexiganan	**172820-23-4**
Pibutidine	**103922-33-4**
Pifonakin	**112721-39-8**
Pleconaril	**153168-05-9**
Pralmorelin	**158861-67-7**
Pramlintide	**151126-32-8**
Pranazepide	**150408-73-4**
Pregabalin	**148553-50-8**
Prucalopride	**179474-81-8**
Pumaprazole	**158364-59-1**
Quetiapine	**111974-69-7**
Quilostigmine	**139314-01-5**
Raltitrexed	**112887-68-0**
Ranelic acid	**135459-90-4**
Rapacuronium bromide	**156137-99-4**
Resocortol	**76675-97-3**
Retigabine	**150812-12-7**
Revatropate	**149926-91-0**
Rifalazil	**129791-92-0**
Rismorelin	**146706-68-5**
Ritonavir	**155213-67-5**
Rituximab	**174722-31-7**
Rivastigmine	**123441-03-2**

Rizatriptan..... 144034-80-0
Robalzotan..... 169758-66-1
Roflumilast..... 162401-32-3
Rosiglitazone..... 122320-73-4
Roxifiban..... 170902-47-3
Rupatadine..... 158876-82-5
Sabcomeline..... 159912-53-5
Samarium (153 Sm) lexidronam..... 154427-83-5

Sampatrilat..... 129981-36-8
Saredutant..... 142001-63-6
Scopinast..... 145574-90-9
Seocalcitol..... 134404-52-7
Sevelamer..... 52757-95-6
Sibrafiban..... 172927-65-0
Sildenafil..... 139755-83-2
Silperisone..... 140944-31-6

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Sinapultide..... 138531-07-4
Sinitrodil..... 143248-63-9
Sipatrigine..... 130800-90-7
Sitafloxacin..... 127254-12-0
Sivelestat..... 127373-66-4
Soretolide..... 130403-08-6
Sulesomab..... 167747-19-5
Sunepitron..... 148408-65-5
Taltirelin..... 103300-74-9
Talviraline..... 169312-27-0
Targinine..... 17035-90-4
Tasonermin..... 94948-59-1
Tazomeline..... 131987-54-7
Technetium (99m Tc) nofetumomab merpentan..... 165942-79-0
Technetium (99m Tc) pintumomab..... 157476-76-1
Technetium (99mTc) apcitide..... 178959-14-3
Temiverine..... 173324-94-2
Temocaprilat..... 110221-53-9
Terbogrel..... 149979-74-8
Tererstigmine..... 147650-57-5
Ticolubant..... 154413-61-3
Tifacogin..... 148883-56-1
Tilnoprofen arbamel..... 159098-79-0
Tivirapine..... 137332-54-8
Tobicillin..... 151287-22-8
Trafermin..... 131094-16-1
Trastuzumab..... 180288-69-1
Trecovirsen..... 148998-94-1
Tresperimus..... 160677-67-8
Upenazime..... 95268-62-5
Urokinase alfa..... 99821-47-3
Valganciclovir..... 175865-60-8
Valnemulin..... 101312-92-9
Valspodar..... 121584-18-7
Vatanidipine..... 116308-55-5
Vedaclidine..... 141575-50-0
Vinflunine..... 162652-95-1
Xaliproden..... 135354-02-8
Xemilofiban..... 149820-74-6
Ziconotide..... 107452-89-1
Zinostatin stimalamer..... 123760-07-6
Zolmitriptan..... 139264-17-8

Pharmaceutical Intermediates Proposed for Duty Elimination

IUPAC Name	CAS No.
(S)-but-3-yn-2-ol	2914-69-4
2-(4-fluorobenzyl)thiophene	63877-96-3
5-amino-N,N'-bis[2-acetoxy-1-(acetoxymethyl)ethyl]-2,4,6-triiodoisophthalamide	148051-08-5
5-amino-N,N'-bis(2,3-dihydroxypropyl)-2,4,6-triiodoisophthalamide	76801-93-9
(S)-alpha-chloroformylethyl acetate	36394-75-9
Diethyl dipropylmalonate	6065-63-0
5-methyl-N-[4-(sulfamoyl)phenethyl]pyrazine-2-carboxamide	33288-71-0
(5aR,11bS)-9,10-dimethoxy-2-propyl-4,5,5a,6,7,11b-hexahydrobenzo[f]thieno[2,3-c] quinoline hydrochloride.	178357-37-4
Methyl N-(phenoxycarbonyl)-L-valinate	153441-77-1
(+-)-6-fluoro-1-methyl-4-oxo-7-(piperazin-1-yl)-4H-[1,3]thiazeto-[3,2-a]quinoline-3 -carboxylic acid	112984-60-8
Methyl 3-amino-4,6-dibromo-o-toluate	119916-05-1
4,6-dibromo-3-fluoro-o-toluic acid	119916-27-7
7-bromo-1-cyclopropyl-6-fluoro-5-methyl-4-oxo-1,4-dihydroquinoline-3-carboxylic acid	119916-34-6
2-mercapto-5-(trifluoromethyl)anilinium chloride	4274-38-8
2-(3-bromophenoxy)tetrahydropyran	57999-49-2
6-chloro-5-(2-chloroethyl)indol-2(3H)-one	118289-55-7
6-chloroindol-2(3H)-one	56341-37-8
6-methoxy-1,2,3,4-tetrahydro-1-naphthone	1078-19-9
N-[N-(tert-butoxycarbonyl)-L-alanyl]-L-alanine hydrate	90303-36-9
2,2'-dithiodibenzonitrile	33174-74-2
2-ethoxy-5-[(4-methylpiperazin-1-yl)sulfonyl]benzoic acid	194602-23-8
1-methyl-4-nitro-3-propylpyrazole-5-carboxamide	139756-01-7
(S)-2-(4-fluorophenyl)-3-methylbutyric acid	55332-37-1
[3-(benzimidazol-2-yl)propyl]methylamine	64137-52-6
7-chloro-5-(2-fluorophenyl)-1H-1,4-benzodiazepin-2(3H)-one	2886-65-9
2-bromo-4'-chloro-2'-(2-fluorobenzoyl)acetanilide	1584-62-9
2'-benzoyl-2-bromo-4'-chloroacetanilide	41526-21-0
(RS)-serinohydrazide hydrochloride	55819-71-1
2,3,4-trihydroxybenzaldehyde	2144-08-3
Dimethyl chloromalonate	28868-76-0
4,6-dichloro-5-(2-methoxyphenoxy)-2,2'-bipyrimidinyl	150728-13-5
4-tert-butylbenzenesulfonamide	6292-59-7
Methyl 3-[(methoxycarbonylmethyl)sulfamoyl]thiophene-2-carboxylate	106820-63-7
Methyl 4-hydroxy-2-methyl-2H-thieno[2,3-e][1,2]thiazine-3-carboxylate 1,1-dioxide	59804-25-0
Tert-butyl(1S,9S)-6,10-dioxo-9-phthalimidooctahydropyridazo[1,2-a][1,2]diazepine-1-carboxylate	106928-72-7
Ethyl (R)-2-hydroxy-4-phenylbutyrate	90315-82-5
1-benzyl hydrogen (S)-4-phthalimidoglutarate	88784-33-2
(S)-1-(benzyloxycarbonyl)hexahydropyridazine-3-carboxylic acid	65632-62-4
Methyl {(1S,2R)-1-benzyl-3-[(3S,4aS,8aS)-3-(tert-butylcarbamoyl)decahydro -2-isoquinolyl]-2-hydroxypropyl}carbamate	178680-13-2
(3S,4aS,8aS)-2-[(2R,3S)-3-amino-2-hydroxy-4-phenylbutyl]-N-tert-butyldecahydroisoquinoline-3-carb oxamide	136522-17-3
4-[(S)-3-amino-2-oxopyrrolidin-1-yl)benzonitrile hydrochloride	175873-08-2
Ethyl3-(3-{(S)-1-[4-(N'2-hydroxyamidino)phenyl]-2-	

oxopyrrolidin-3-yl}ureido)propionate..... 175873-10-6
4-[5-(p-tolyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl]benzenesulfonamide..... 169590-42-5
4-hydrazonobenzenesulfonamide hydrocholoride..... 17852-52-7
4'-amidinosuccinanilic acid hydrochloride..... 149177-92-4
Ethyl (S)-3-aminopent-4-ynoate hydrochloride..... 154772-45-9
11-alpha-hydroxy-7-alpha-(methoxycarbonyl)-3-oxopregn-4-ene-21,17-alpha-carbolactone..... 192704-56-6
11-alpha-hydroxy-3-oxopregna-4,6-diene-21,17-alpha-carbolactone..... 73726-56-4
4-(5-methyl-3-phenylisoxazol-4-yl)benzenesulfonamide.... 181695-72-7
5-methyl-3,4-diphenyl-4,5-dihydroisoxazol-5-ol..... 181696-73-1

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N-[4-(5-methyl-3-phenylisoxazol-4-yl)phenylsulfonyl]propionamide, sodium salt..... 198470-85-8
Pivaloyloxymethyl 7-{(Z)-2-[2-(tert-butoxycarbonylamino)thiazol 4-yl]pent-2-enamido}-3-(carbamoyloxymethyl)-3-cephem-4-carboxylate..... 105889-80-3
Benzhydryl 6-(4-methylbenzamido)penicillanic acid 4-oxide..... 77887-68-4
Benzhydryl 7-{(Z)-2-[2-(tert-butoxycarbonylamino)thiazol-4-yl]-4-(3-methylbut-2-enyloxycarbonyl)but-2-enamido}-3-cephem-4-carboxylate..... 174761-17-2
N-(2-quinolylcarbonyl)-L-asparagine..... 136465-98-0
Methyl N-(methoxycarbonyl)-L-phenylalaninate..... 41844-71-7
N-[(2,6-diisopropylphenoxy)sulfonyl]-2-(2,4,6-triisopropylphenyl)acetamide..... 166518-60-1
(2S,3S)-3-methyl-2-(3-oxo-2,3-dihydro-1,2-benzisothiazol-2-yl)valeric acid..... 177785-47-6
(1S,4R)-1-azabicyclo[2.2.1]heptan-3-one O-[(Z)-(3-methoxyphenyl)ethynyl]oxime--maleic acid (1:1)..... 180050-34-4
N-[(R)-9-methyl-4-oxo-1-phenyl-3,4,6,7-tetrahydro[1,4]diazepino[6,7,1-hi]indol-3-yl]isonicotinamide..... 179024-48-7
4-acetamido-2'-aminobenzanilide..... 112522-64-2
N,N'-bis[3-(ethylamino)propyl]propane-1,3-diamine tetrahydrochloride..... 156886-85-0
Ethyl 5-(but-3-enyl)thiophene-2-carboxylate..... 208337-82-0
Ethyl 5-[(3R)-3,4-dihydroxybutyl]thiophene-2-carboxylate 208337-83-1
Ethyl 5-[(3R)-4-amino-3-hydroxybutyl]thiophene-2-carboxylate..... 208337-84-2
Ethyl 5-[(3R)-4-(tert-butoxycarbonylamino)-3-hydroxybutyl]thiophene-2-carboxylate..... 186521-38-0
Ethyl 5-[(3R)-4-(tert-butoxycarbonylamino)-3-(mesyloxy)butyl]thiophene-2-carboxylate..... 186521-39-1
Ethyl 5-[(3S)-3-(acetylthio)-4-(tert-butoxycarbonylamino)butyl]thiophene-2-carboxylate..... 186521-40-4
Dimethyl 2-[(S)-1-(tert-butoxycarbonylaminomethyl)-2-(5-ethoxycarbonyl-2-thienyl)propylthio] malonate..... 186521-41-5
Methyl (S)-6-{2-[5-ethoxycarbonyl)-2-thienyl]ethyl}-3-oxo-1,4-thiazinane-2-carboxylate..... 186521-42-6
Ethyl (6S)-5-[2-(2-amino-4-oxo-4,6,7,8-tetrahydro-3H-pyrimido[5,4-b][1,4]thiazin-6-yl)ethyl] thiophene-2-carboxylate..... 186521-44-8
(6S)-5-[2-(2-amino-4-oxo-4,6,7,8-tetrahydro-3H-pyrimido[5,4-b][1,4]thiazin-6-yl)ethyl]thiophene-2-carboxylic acid..... 186521-45-9
Diethyl N-{5-[2-((6S)-2-amino-4-oxo-4,6,7,8-tetrahydro-3H-pyrimido[5,4-b][1,4]thiazin-6-yl) ethyl]-2-thenoyl}-L-glutamate..... 177575-19-8
4-chloropyridine hydrochloride..... 7379-35-3

4-phenoxypyridine..... 4783-86-2
4-(4-pyridyloxy)benzenesulfonic acid..... 192329-80-9
4-(4-pyridyloxy)benzenesulfonyl chloride hydrochloride.. 192330-49-7
(3S)-2,2-dimethyl-1,4-thiazinane-3-carboxylic acid..... 84915-43-5
(3S)-2,2-dimethyl-4-[4-(4-pyridyloxy)phenylsulfonyl]-1,4-thiazinane-3-carboxylic acid..... 192329-83-2
2-amino-5-bromo-6-methylquinazolin-4(1H)-one..... 147149-89-1
3-acetoxy-o-toluic acid..... 168899-58-9
(4R,5R)-4,5-bis(mesyloxymethyl)-1,3,2-dioxathiolane 2,2-dioxide..... 208338-09-4
(2R,3R)-1,4-bis(mesyloxy)butane-2,3-diol..... 1947-62-2
3,7,11-trimethyldodeca-1,6,10-trien-3-ol..... 7212-44-4
(6E,10E,14E)-3,7,11,15-tetramethylhexadeca-1,6,10,14-tetraen-3-ol..... 1113-21-9
Methyl 4-amino-5-nitro-o-anisate..... 59338-84-0
Methyl 5-(ethylsulfonyl)-o-anisate..... 62140-67-4
Methyl 5-sulfamoyl-o-anisate..... 33045-52-2
3-methoxy-5-sulfamoyl-o-anisic acid..... 66644-80-2
1-benzylpiperidine-4-carbaldehyde..... 22065-85-6
{(E)-3-[(6R,7R)-7-amino-2-carboxylato-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]allyl}(carbamoylmethyl)(ethyl)methylammonium..... 160115-08-2
[4-(3-methoxypropoxy)-3-methyl-2-pyridyl]methanol..... 118175-10-3
(Z)-2-(5-amino-1,2,4-thiadiazol-3-yl)-2-[(fluoromethoxy)imino]acetic acid..... 116833-10-4
2-(ethylmethylamino)acetamide..... 116833-20-6
4-chloro-2-[(Z)-(methoxycarbonyl)methoxyimino]-3-oxobutyric acid..... 84080-70-6
2-(5-ethyl-2-pyridyl)ethanol..... 5223-06-3
2-(4-aminophenoxymethyl)-2,5,7,8-tetramethyl-4-oxochroman-6-yl acetate..... 107188-37-4
Chloromethyl pivalate..... 18997-19-8
7-ethyl-3-[2-(trimethylsilyloxy)ethyl]indole..... 185453-89-8
5-amino-2,4,6-triiodoisophthalic acid..... 35453-19-1
4-hydroxyindole..... 2380-94-1
Thiazolidine-2,4-dione..... 2295-31-0
2-bromo-3-methylthiophene..... 14282-76-9
5-methyluracil..... 65-71-4
Thymidine..... 50-89-5
3-methyl-4-(2,2,2-trifluoroethoxy)-2-pyridylmethanol.... 103577-66-8
3-(cyanoimino)-3-piperidinopropiononitrile..... 56488-00-7
N-acetyl-3-(3,4-dimethoxyphenyl)-DL-alanine..... 27313-65-1
2,5,7,8-tetramethyl-2-(4-nitrophenoxymethyl)-4-oxochroman-6-yl acetate..... 107188-34-1
Methyl 4-(bromomethyl)-m-anisate..... 70264-94-7
9-bromononyl 4,4,5,5,5-pentafluoropentyl sulfide..... 148757-89-5
2-(phenylthio)aniline..... 1134-94-7
4,4,5,5,5-pentafluoropentan-1-ol..... 148043-73-6
Methyl (S)-2-amino-4-(1H-tetrazol-5-yl)butyrate..... 127105-49-1
(3-chloro-4-fluorophenyl)[7-methoxy-6-(3-morpholinopropoxy)quinazolin-4-yl]amine..... 184475-35-2
5-hydroxy-1,2,3,4-tetrahydro-1-naphthone..... 28315-93-7
(R)-1-chloro-2,3-epoxypropane..... 51594-55-9
Methyl 4-acetamido-o-anisate..... 4093-29-2
4-acetamido-5-chloro-o-anisic acid..... 24201-13-6

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Methyl (1S,2S)-1-benzyl-3-chloro-2-hydroxypropylcarbamate..... 176972-62-6
Ethyl 2-chloronicotinate..... 1452-94-4
Ethyl 6-chloronicotinate..... 49608-01-7
6-hydroxynicotinic acid..... 5006-66-6

6-chloronicotinic acid..... 5326-23-8
1-acetylpiperazine..... 13889-98-0
8-azaspiro[4.5]decane-7,9-dione..... 1075-89-4
(S)-2-(4-{[(2,7-dimethyl-4-oxo-1,4-dihydroquinazolin-6-yl)methyl](prop-2-ynyl)amino}-2-fluorobenzamido)-4-(1H-tetrazol-5-yl)butyric acid..... 153537-73-6
SC-59735..... 116638-33-6
SC-70935..... 193700-51-5
6,7-dichloro-2,3-dimethoxyquinoxalin-5-ylamine..... 178619-89-1
4-(2-methyl-1H-imidazo[4,5-c]pyridin-1-yl)benzoic acid.. 132026-12-1
Methyl(4'-nitrophenethyl)amine hydrochloride..... 166943-39-1
2-chloroethyl 4-nitrophenyl ether..... 3383-72-0
(2RS,3SR)-2-(2,4-difluorophenyl)-3-(5-fluoropyrimidin-4-yl)-1-(1H-1,2,4-triazol-1-yl)butan-2-ol--(1R,4S)-2-oxobornane-10-sulfonic acid (1:1)..... 188416-34-4
6-ethyl-5-fluoropyrimidin-4(1H)-one..... 137234-87-8
Diphenyl[(S)-pyrrolidin-3-yl]acetonitrile hydrobromide.. 194602-27-2
(2,3-dihydrobenzofuran-5-yl)acetic acid..... 69999-16-2
Cyclohexylammonium 1-[(S)-2-(tert-butoxycarbonyl)-3-(2-methoxyethoxy)propyl]cyclopentanecarboxylate..... 167944-94-7
Cis-4-(benzyloxycarbonyl)cyclohexylammonium tosylate.... 67299-45-0
5-bromo-3-[(R)-1-methylpyrrolidin-2-ylmethyl]indole..... 143322-57-0
Meso-3-benzyl-6-nitro-3-azabicyclo[3.1.0]hexane..... 151860-16-1
Diethyl (6-chloro-9H-carbazol-2-yl)methylmalonate..... 71208-55-4
Beta-cyclodextrin sulfobutyl ethers, sodium salts..... 182410-00-0
N-(2-chloroethyl)pyrrolidine hydrochloride..... 7250-67-1
6,7-bis(2-methoxyethoxy)quinazolin-4(1H)-one..... 179688-29-0
Ethyl 3,4-dihydroxybenzoate..... 3943-89-3
3-{(Z)-1-[4-(2-dimethylaminoethoxy)phenyl]-2-phenylbut-1-enyl}phenol..... 83647-29-4
2-[1-(tert-butoxycarbonyl)-4-piperidyl]acetic acid..... 157688-46-5
4-pyridylacetic acid hydrochloride..... 6622-91-9
a,a,a-trifluoro-4-nitro-m-toluidine..... 393-11-3
Methyl 1-(2,3,5-tri-O-acetyl-beta-D-ribofuranosyl)-1H-1,2,4-triazole-3-carboxylate..... 39925-10-5
N'a-(tert-butoxycarbonyl)-N'w-nitro-L-arginine..... 2188-18-3
N'a-(tert-butoxycarbonyl)-N-methoxy-N-methyl-N'w-nitro-L-argininamide..... 139976-34-4
(2S,3S)-3-amino-2-ethoxy-N-nitropiperidine-1-carboxamidine hydrochloride..... 180250-77-5
(S)-O-benzyllactaldehyde-N-(tert-butoxycarbonyl)hydrazone..... 192802-28-1
Phenyl {4-[4-(4-hydroxyphenyl)piperazin-1-yl]phenyl}carbamate..... 184177-81-9
[(3S,5S)-5-(2,4-difluorophenyl)-5-(1H-1,2,4-triazol-1-ylmethyl)tetrahydrofuran-3-yl]methyl 4-chlorobenzenesulfonate..... 175712-02-4
8-chloro-11-(4-piperidylidene)-5,6-dihydro-11H-benzo[5,6]cyclohepta[1,2-b]pyridine..... 100643-71-8
2-hydroxy-2-methyl-4'-nitro-3'-(trifluoromethyl)propionanilide..... 52806-53-8
5-acetylsalicylamide..... 40187-51-7
8-chloro-5,6-dihydro-11H-benzo[5,6]cyclohepta[1,2-b]pyridin-11-one..... 31251-41-9
1-nitro-4-(1,2,2,2-tetrachloroethyl)benzene..... 4714-32-3
3-chloropropyldimethylammonium chloride..... 5407-04-5
3-(trichlorovinyl)aniline hydrochloride..... 81972-27-2
2-[1-(mercaptomethyl)cyclopropyl]acetic acid..... 162515-68-6
3-(4-bromobenzyl)-2-butyl-4-chloro-1H-imidazol-5-ylmethanol..... 151015-31-6
4-chloro-1-methylpiperidine hydrochloride..... 5382-23-0
Methyl2-[(S)-3-{(E)-3-[2-(7-chloro-2-quinolyl)vinyl]phenyl}-3-hydroxypropyl]benzoate..... 181139-72-0

Methyl 2-(3-{(E)-3-[2-(7-chloro-2-quinolyl)vinyl]phenyl}-3-oxopropyl)benzoate..... 149968-11-6
2-(2-trityl-2H-tetrazol-5-yl)phenylboronic acid..... 143722-25-2
(3aS,8aR)-3-[(2R,4S)-2-benzyl-4,5-epoxyvaleryl]-2,2-dimethyl-3,3a,8,8a-tetrahydro-2H -indeno[1,2-d]oxazole. 158512-24-4
N-[(4S,6S)-6-methyl-7,7-dioxo-5,6-dihydro-4H-thieno[2,3-b]thiopyran-4-yl]acetamide..... 147086-83-7
N-[(4S,6S)-6-methyl-7,7-dioxo-2-sulfamoyl-5,6-dihydro-4H-thieno[2,3-b]thiopyran-4-yl] acetamide..... 147200-03-1
5-iodouracil..... 696-07-1
N'1-methyl-1H-pyrazole-1-carboxamidine hydrochloride.... 59194-35-3
(S)-tetrahydrofuran-3-ol..... 86087-23-2
Ethyl 4,6-dichloro-3-formylindole-2-carboxylate..... 153435-96-2
3-oxoandrost-4-ene-17-beta-carboxylic acid..... 302-97-6
alpha,alpha,alpha,alpha',alpha',alpha'-hexafluoro-2,5-xylidine..... 328-93-8
(<plus-minus>)-2-azabicyclo[2.2.1]hept-5-en-3-one..... 61865-48-3
(1R,4S)-2-azabicyclo[2.2.1]hept-5-en-3-one..... 79200-56-9
[(1S,4R)-4-(2-amino-6-chloro-9H-purin-9-yl)cyclopent-2-enyl]methanol hydrochloride..... 172015-79-1
N-(2-amino-4,6-dichloropyrimidin-5-yl)formamide..... 171887-03-9
4-fluorobenzyl 4-(methylthio)phenyl ketone..... 87483-29-2
2-amino-3-pyridyl methyl ketone..... 65326-33-2
6-methoxy-1H-purin-2-ylamine..... 20535-83-5
1-(beta-D-arabinofuranosyl)pyrimidine-2,4(1H,3H)-dione.. 3083-77-0
(2R)-4-methyl-2-[(S)-2,2-dimethyl-5-oxo-1,3-dioxolan-4-yl]valeric acid..... 157518-70-2
(S)-2-amino-3,3-dimethyl-N-2-pyridylbutyramide..... 171764-07-1

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3-nitro-4-pyridone..... 5435-54-1
2,6-difluorobenzylamine..... 69385-30-4
L-ribose..... 24259-59-4
(5,6-dichloro-1H-benzimidazol-2-yl)isopropylamine..... 176161-55-0
(R)-2-amino-2-ethylhexan-1-ol..... 151851-75-1
3-methylenecyclobutanecarbonitrile..... 15760-35-7
4-tert-butylbenzyl 2-{(2R,3S)-3-[(R)-1-(tert-butyldimethylsilyloxy)ethyl]-2-[(1R,3S)-3-methoxy-2-oxocyclohexyl]-4-oxoazetidin-1-yl}-2-oxoacetate..... 159593-17-6
methyl (3aR,4R,7aR)-2-methyl-4-[(1S,2R)-1,2,3-triacetoxypropyl]-3a,7a-dihydro-4H-pyrano [3,4-d]oxazole-6-carboxylate..... 78850-37-0
(4S,5R,6R)-5-acetamido-4-amino-6-[(1R,2R)-1,2,3-trihydroxypropyl]-5,6-dihydropyran-2 -carboxylic acid.. 130525-62-1
Pyrazole-1-carboxamidine hydrochloride..... 4023-02-3
2-acetoxy-5-acetylbenzyl acetate..... 24085-06-1
(R)-1,2,3,4-tetrahydropapaverine hydrochloride..... 54417-53-7
Trans-2-chloro-3-[4-(4-chlorophenyl)cyclohexyl]-1,4-naphthoquinone..... 153977-22-1
1,3-dichloroacetone..... 534-07-6
3,5-dimethylpiperidine..... 35794-11-7
2,6-diaminopyrimidin-4-ol..... 56-06-4
1-(2-chloroethyl)piperidinium chloride..... 2008-75-5
Diethyl L-glutamate hydrochloride..... 1118-89-4
Tert-butyl (1R,4S)-4-(hydroxymethyl)cyclopent-2-enylcarbamate..... 168960-18-7
2-butyl-1,3-diazaspiro[4.4]non-1-en-4-one hydrochloride. 151257-01-1
Tert-butyl 2-{[1-(2-aminothiazol-4-yl)-2-(benzisothiazol-2-ylthio)-2-oxoethylidene] aminooxy}-2-methylpropionate 89604-92-2
Bis[(isopropyloxycarbonyloxy)methyl [(R)-2-(6-amino-9H-purin-9-yl) -1-methylethoxy]methyl phosphonate--fumaric acid (1:1)..... 202138-50-9

(R)-[2-(6-amino-9H-purin-9-yl)-1-methylethoxy]methylphosphonic acid..... 147127-20-6
(R)-propylene carbonate..... 16606-55-6
6-amino-9H-purin-9-ylethanol..... 707-99-3
(R)-2-(6-amino-9H-purin-9-yl)-1-methylethanol..... 14047-28-0
Chloromethyl isopropyl carbonate..... 35180-01-9
Diethyl (tosyloxy)methylphosphonate..... 31618-90-3
(R)-3-chloropropane-1,2-diol..... 57090-45-6
(S)-[(trityloxy)methyl]oxirane..... 129940-50-7
(S)-2-(2-amino-5-chlorophenyl)-4-cyclopropyl-1,1,1-trifluorobut-3-yn-2-ol..... 154598-58-0
10,10-bis[(2-fluoro-4-pyridyl)methyl]anthrone..... 160588-45-4
(S)-N-{(1S,2R)-3-[(1,3-benzodioxol-5-ylsulfonyl)(isobutyl)amino]-1-benzyl-2-hydroxypropyl}-3,3-dim ethyl-2-(sarcosylamino)butyramide..... 183556-68-5
(4R,5S,6S,7R)-1-[(3-amino-1H-indazol-5-yl)methyl]-4,7-dibenzyl-3-butyl-5,6-dihydroxyhexahydro-2H-1,3-diazepin-2-one..... 188978-02-1
(2S)-N-[(R)-1-(1,3-benzodioxol-5-yl)butyl]-3,3-diethyl-2-{4-[(4-methylpiperazin-1-yl) carbonyl]phenoxy}-4-oxoazetidine-1-carboxamide..... 157341-41-8
2-(piperazin-1-yl)pyrimidine..... 20980-22-7
4-bromo-2,2-diphenylbutanenitrile..... 39186-58-8
Bromomethylcyclopropane..... 7051-34-5
Cyclobutanecarboxylic acid..... 3721-95-7
2-phenyl-2-pyridylacetonitrile..... 5005-36-7
5-methyl-2,3,4,5-tetrahydro-1H-pyrido[4,3-b]indol-1-one. 122852-75-9
4-(2-methyl-2-phenylhydrazino)-5,6-dihydro-2-pyridone... 139122-76-2
4,5,6,7-tetrahydrothieno[3,2-c]pyridine hydrochloride... 28783-41-7
Methyl 2-(2-chlorophenyl)-2-(4,5,6,7-tetrahydrothieno[3,2-c]pyridin-5-yl)acetate hydrochloride..... 130209-90-4
2-bromo-2-(2-chlorophenyl)acetic acid..... 141109-25-3
Disodium (2S,3R)-2-hydroxy-3-isobutylsuccinate..... 157604-22-3
7-amino-3-(2-furoylthiomethyl)-3-cephem-4-carboxylic acid..... 80370-59-8
Methyl 5-chloro-o-anisate..... 33924-48-0
4-[(4-mesylamino)phenyl]-4-oxobutyric acid..... 100632-57-3
Benzyl (3-fluoro-4-morpholinophenyl)carbamate..... 168828-81-7
(3R)-3-[(S)-1-(methylamino)ethyl]pyrrolidine..... 155322-92-2
(4-carboxybutyl)triphenylphosphonium bromide..... 17814-85-6
(3aS,9aS,9bR)-3a-methyl-6-[2-(2,5,5-trimethyl-1,3-dioxan-2-yl)ethyl]-1,2,4,5,8,9,9a,9b-octahydro-3aH-cyclopenta[a]naphthalene-3,7-dione..... 88128-61-4
2-amino-2',5-dichlorobenzophenone..... 2958-36-3
21-chloro-16-alpha-methylpregna-1,4,9(11)-triene-3,20-dione..... 151265-34-8
3,20-dioxopregna-1,4,9(11),16-tetraen-21-yl acetate..... 37413-91-5
Uracil..... 66-22-8
Tetrabutylammonium (6-iodo-1H-purin-2-yl)amide..... 156126-48-6
(1S,2S,3S)-2,3-bis(benzoyloxymethyl)cyclobutanol..... 132294-17-8
5-methyluridine..... 1463-10-1
Benzyl (1-carbamoyl-2-hydroxypropyl)carbamate..... 91558-42-8
5,8-dihydro-1-naphthol..... 27673-48-9
Potassium (R)-N-(3-ethoxy-1-methyl-3-oxoprop-1-enyl)-2-phenylglycine..... 961-69-3
Triethylaniline..... 33881-72-0
1-[4-(2-dimethylaminoethoxy)[14C]phenyl)]-1,2-diphenylbutan-1-ol..... 82407-94-1
o-chlorothiophenol..... 6320-03-2
Cytidine 5'-(dihydrogen phosphate)..... 63-37-6
2-[benzyl(methyl)amino]ethyl acetoacetate..... 54527-65-0

Dibenzyl 1-(2,4-difluorophenyl)-2-(1H-1,2,4-triazol-1-yl)-1-(1H-1,2,4-triazol-1-ylmethyl)ethyl phosphate..... 194602-25-0
(S)-2-{3-[(2-fluorobenzyl)sulfonylamino]-2-oxo-2,3-dihydro-1-pyridyl}-N-(1-formyl-4 - guanidinobutyl)acetamide..... 179524-67-5
4-[4-(4-{4-[(3R,5R)-5-(2,4-difluorophenyl)-5-(1H-1,2,4-triazol-1-ylmethyl)tetrahydrofuran-3-ylmethyl oxy]phenyl}piperazin-1-yl)phenyl]-1-[(1S,2S)-1-ethyl-2-hydroxypropyl]-1,2,4-triazol-5(4H)-one..... 171228-49-2
4-{4-[(11R)-3,10-dibromo-8-chloro-5,6-dihydro-11H-benzo[5,6]cyclohepta[1,2-b]pyridin-11-yl]piperid inocarbonylmethyl}piperidine-1-carboxamide..... 193275-84-2
4-{4-[(11S)-3,10-dibromo-8-chloro-5,6-dihydro-11H-benzo[5,6]cyclohepta[1,2-b]pyridin-11-yl]piperidi nocarbonylmethyl}piperidine-1-carboxamide..... 193275-85-3
N-(1-ethyl-1,4-diphenylbut-3-enyl)cyclopropanecarboxamide..... 137246-21-0
(<plus-minus>)-1-azabicyclo[2.2.1]heptan-3-ol..... 142034-92-2
(<dagger>)-1-azabicyclo[2.2.1]heptan-3-one..... 21472-89-9
Ethyl[3-(4-bromo-2-fluorobenzyl)-7-chloro-2,4-dioxo-1,2,3,4-tetrahydroquinazolin-1-yl] acetate..... 112733-28-5
2,6-diisopropylphenyl sulfamate..... 92050-02-7
Diethyl (1-cyano-3-methylbutyl)malonate..... 186038-82-4
2-imino-1,3-thiazol-4-one..... 556-90-1
3,5-di-tert-butyl-4-hydroxybenzaldehyde..... 1620-98-0
N-(biphenyl-2-yl)-4-[(2-methyl-4,5-dihydro-1H-imidazo[4,5-d][1]benzazepin-6-yl)carbonyl]benzamide.... 179528-39-3
3-(aminomethyl)-5-methylhexanoic acid..... 128013-69-4
2-(2,4,6-triisopropylphenyl)acetic acid..... 4276-85-1
N,N'-[dithiobis(o-phenylenecarbonyl)]bis-L-isoleucine... 182149-25-3
(1R,4S)-1-azabicyclo[2.2.1]heptan-3-one..... 142034-97-7
3-amino-7-methyl-5-phenyl-1H-1,4-benzodiazepin-2(3H)-one 70890-50-5
1-ethyl-1,4-diphenylbut-3-enylamine..... 129140-12-1
Sodium 1,2,3-triazole-5-thiolate..... 59032-27-8
(3-ethynylphenyl)[6,7-bis(2-methoxyethoxy)quinazolin-4-yl]amine hydrochloride..... 183319-69-9
1-[(1S,2S)-2-hydroxy-2-(4-hydroxyphenyl)-1-methylethyl]-4-phenylpiperidin-4-ol methanesulfonate trihydrate..... 189894-57-3
(5R,6S)-6-phenyl-5-[4-(2-pyrrolidinoethoxy)phenyl]-5,6,7,8-tetrahydro-2-naphthol--(-)-tartaric acid (1:1). 190791-29-8
1-[(S)-3-(acetylthio)-2-methylpropionyl]-L-proline..... 64838-55-7
4'-benzyloxy-2-[(1-methyl-2-phenoxyethyl)amino]propiophenone hydrochloride..... 35205-50-6
5-(3-dimethylaminopropyl)-10,11-dihydrodibenzo[a,d]cyclohepten-5-ol..... 1159-03-1
2-aminoethyldiethylamine..... 100-36-7
Isopropyl (Z)-7-[(1R,2R,3R,5S)-3,5-dihydroxy-2-{(E)-(3R)-3-hydroxy-4-[3-(trifluoromethyl)phenoxy] but-1-enyl}cyclopentyl]hept-5-enoate..... 157283-68-6
21-benzyloxy-9-alpha-fluoro-11-beta,17-alpha-dihydroxy-16-alpha-methylpregna-1,4-diene-3,20-dione..... 150587-07-8
Pilocarpine..... 92-13-7
Atropine..... 51-55-8
4-nitrobenzyl (4R,5R,6S)-3-(diphenoxyphosphoryloxy)-6-[(R)-1-hydroxyethyl]-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate..... 90776-59-3
2-aminopropane-1,3-diol..... 534-03-2
Methyl 4-(bromomethyl)benzoate..... 2417-72-3
2-butylimidazole-5-carbaldehyde..... 68282-49-5
Ethyl hydrogen (2-thienylmethyl)malonate..... 143468-96-6
4-(2-butyl-5-formylimidazol-1-ylmethyl)benzoic acid..... 152146-59-3

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2,6-dichloro-4-methylnicotinonitrile..... 875-35-4
3,5-diacetamido-2,4,6-triiodobenzoic acid dihydrate..... 50978-11-5
2,2,2-trifluoroethanol..... 75-89-8
13-ethyl-17-alpha-hydroxy-18,19-dinorpregn-4-en-20-yn-3-one oxime..... 53016-31-2
Estropipate..... 7280-37-7
4-(4-cyclohexyl-2-methyloxazol-5-yl)-2-fluorobenzenesulfonamide..... 180200-68-4
17-alpha-hydroxy-3,20-dioxopregna-4,9(11)-diene-21-yl acetate..... 7753-60-8
Hemocyanins, megathura crenulata, reaction products with 1-O-[O-2-acetamido-2-deoxy-beta-D-galactopyranosyl-(1,4)-O-(N-acetyl-alpha-neuraminosyl)-(2,3)]-O-beta-D-galactopyranosyl-(1,4)-beta-D-glucopyranose..... 195993-11-4
1-(28-{O-D-apio-beta-D-furanosyl-(1,3)-O-beta-D-xylopyranosyl-(1,4)O-6-deoxy-alpha-L-mannopyranosyl)-(1,2)-4-O-[5-(5-alpha-L-arabinofuranosyloxy-3-hydroxy-6-methyloctanoyloxy)-3-hydroxy-6-methyloctanoyl]-6-deoxy-beta-D-galactopyranosyloxy}-16-alpha-hydr ox..... 141256-04-4
1-O-[O-(N-acetyl-alpha-neuraminosyl)-(2,3)-O-[O-beta-D-galactopyranosyl-(1,3)-2-acetamido-2-deoxy-beta-D-galactopyranosyl-(1,4)]-O-beta-D-galactopyranosyl-(1,4)-beta-D-glucopyra nosyl]ceramide..... 104443-62-1
1-O-[O-2-acetamido-2-deoxy-beta-D-galactopyranosyl-(1,4)-O-(N-acetyl-alpha-neuraminosyl)-(2,3)-O-beta-D-galactopyranosyl-(1,4)-beta-D-glucopyranosyl]ceramide.. 104443-57-4
N-{[(1R,2R)-1-[O-(N-acetyl-alpha-neuraminosyl)-(2,3)-O-2-acetamido-2-deoxy-beta-D-galactopyranosyl-(1,4)-O-beta-D-galactopyranosyl-(1,4)-beta-D-glucopyranosyloxymethyl]-2-hydroxy-3-formylpropyl}stearamide..... 196085-62-8
Ferristene..... 155773-56-1
Codeine phosphate hemihydrate..... 41444-62-6
Trans-1-benzoyl-4-phenyl-L-proline..... 120851-71-0
5-methyluridine hemihydrate..... 25954-21-6
5'-benzoyl-2',3'-didehydro-3'-deoxythymidine..... 122567-97-9
3',5'-anhydrothymidine..... 38313-48-3
4'-(benzyloxycarbonyl)-4'-demethylepipodophyllotoxin.... 23363-33-9
2,3,4,6-tetra-O-benzyl-1-O-(trimethylsilyl)-b-D-glucose. 80312-55-6
2,3,4,6-tetra-O-benzyl-D-glucose..... 4132-28-9
6-iodo-1H-purin-2-ylamine..... 19690-23-4
(1R,2R,3S)-2-amino-9-[2,3-bis(benzoyloxymethyl)cyclobutyl]-9H-purin-6-one..... 156126-53-3
(1RS,2RS,3SR)-2,3-bis(benzoyloxymethyl)cyclobutylamine.. 151807-53-3
(1RS,2RS,3RS)-2,3-bis(benzoyloxymethyl)cyclobutanol..... 127759-90-4
(1R,2R,3S)-9-[2,3-bis(benzoyloxymethyl)cyclobutyl]-6-iodo-9H-purin-2-ylamine..... 156126-89-3
(2S,3S)-2,3-bis(benzoyloxymethyl)cyclobutanone..... 132294-16-7
(S)-5-(1,3-dioxolan-4-yl)-2-aminovaleric acid..... 170242-34-9
N,N'-bis(trifluoroacetyl)-DL-homocystine..... 105996-54-1
(S)-2-(acetylthio)-3-phenylpropionic acid--dicyclohexylamine (1:1)..... 157521-26-1
Methyl (4S,7S,10aS)-4-amino-5-oxooctahydro-7H-pyrido[2,1-b][1,3]thiazepine-7-carboxylate..... 167304-98-5
4'-(2-butyl-4-oxo-1,3-diazaspiro[4.4]non-1-en-3-ylmethyl)biphenyl-2-carbonitrile..... 138401-24-6
DL-5-(1,2-dithiolan-3-yl)valeramide..... 3206-73-3
4-(4-methoxyphenyl)butan-2-one..... 104-20-1
Tetraisopropyl methylenediphosphonate..... 1660-95-3
(S)-1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid.... 74163-81-8
(S)-N-tert-butyl-1,2,3,4-tetrahydroisoquinoline-3-carboxamide hydrochloride..... 149057-17-0
(S)-N-tert-butyl-1,2,3,4-tetrahydroisoquinoline-3-

carboxamide sulfate..... 186537-30-4
(3S)-tetrahydrofuran-3-yl (1S,2R)-3-[(4-
aminophenylsulfonyl)(isobutyl)amino]-1-benzyl-2-
hydroxypropylcarbamate..... 161814-49-9
6-benzyl-1-(ethoxymethyl)-5-isopropylpyrimidine-
2,4(1H,3H)-dione..... 149950-60-7
(2R,5S)-4-amino-5-fluoro-1-[2-(hydroxymethyl)-1,3-
oxathiolan-5-yl]pyrimidin-2(1H)-one..... 143491-57-0
3'-azido-2',3'-dideoxy-5-methylcytidine hydrochloride... 108895-45-0
(2R,4R)-4-(2,6-diamino-9H-purin-9-yl)-1,3-dioxolan-2-
ylmethanol..... 145514-04-1
(4R,5S,6S,7R)-1,3-bis(3-aminobenzyl)-4,7-dibenzyl-5,6-
dihydroxyhexahydro-2H-1,3-diazepin-2-one
dimethanesulfonate..... 177932-89-7

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APPENDIX C
Written Submissions From the Public to the Commission

(Not included in electronic version of this report)