Aqueous and Cosolvent Solubility Data for Drug-like Organic Compounds

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ABSTRACT

Recently 2 QSPR-based in silico models were developed in our laboratories to predict the aqueous and non-aqueous solubility of drug-like organic compounds. For the intrinsic aqueous solubility model, a set of 321 structurally diverse drugs was collected from literature for the analysis. For the PEG 400 cosolvent model, experimental data for 122 drugs were obtained by a uniform experimental procedure at 4 volume fractions of PEG 400 in water, 0%, 25%, 50%, and 75%. The drugs used in both models represent a wide range of compounds, with log P values from –5 to 7.5, and molecular weights from 100 to >600 g/mol. Because of the standardized procedure used to collect the cosolvent data and the careful assessment of quality used in obtaining literature data, both data sets have potential value for the scientific community for use in building various models that require experimental solubility data.

Keywords: solubility, aqueous, cosolvent, PEG 400, data, QSPR model

INTRODUCTION

With increasing pressure to identify high-quality drug candidates, it is critical to assess the Absorption, Distribution, Metabolism, Excretion (ADME) attributes of compounds early on during drug discovery. This may include properties such as aqueous solubility, permeability, metabolic stability, and in vivo pharmacokinetics. One of the properties crucial to candidate screening is the solubility of the compound. When the aqueous solubility of a drug candidate is inadequate to permit solution formulations, cosolvents are often employed to improve solubility.[1] When drugs are insoluble in water, polyethylene glycol (PEG) is an excipient of choice based on its good solubilization properties and overall acceptability in terms of side-effect profile.[2]

Although the literature presents several models for predicting solubilization, many require the collection of experimental data, a luxury often not afforded at this stage in drug discovery where compound is in short supply. Therefore, in silico models that can predict solubility without expending compound are of great value to the pharmaceutical scientist. Nevertheless, models can fail or result in little value if the data used to generate the model are of poor quality or were obtained under varied experimental conditions.[3]

We have received numerous requests for the raw data used to generate two Quantitative Structure Property Relationship (QSPR)-based in silico models for predicting both aqueous and cosolvent solubility in our laboratories.[4,5] For the aqueous solubility model, a set of 321 structurally diverse drugs, with their intrinsic aqueous solubility, was collected from literature and used in the analysis. For the PEG 400 cosolvent model, experimental data for 122 drugs were collected by a uniform experimental procedure at 4 volume fractions of PEG 400: 0% (aqueous), 25%, 50%, and 75%. The drugs used in both models represent a wide range of compounds, with log P values from –5 to 7.5, and molecular weights from 100 to >600 g/mol. Because of the standardized procedure used to collect the cosolvent data and the careful assessment of quality used in obtaining the literature data, both data sets have potential value for the scientific community for use in building various models that require experimental solubility data.

MATERIALS AND METHODS

Data Set Selection for the Aqueous Model

The solubility values of 321 compounds (listed in Table 1) were obtained from the Analytical Profile of Drug Substances, the Merck Index, and the literature.[6-22] To evaluate the quality of the data set, we carefully checked the original literature sources to ensure that the data met the following criteria: (1) the compound must be a drug or drug-like and solid at room temperature; (2) the solubility value must be reported as the solubility of unionized species (intrinsic solubility) at or around 25°C; (3) for solubility measurement, the equilibrium must be achieved over time, excess solid must be present at the end of testing, and acceptable analytical methods must be used for detection.

Corresponding Author: Kimberley A. Lentz, 5 Research Parkway, Wallingford, CT 06492-7660. Tel: (203) 677-7923; Fax: (203) 677-6193; Email: kimberley.lentz@bms.com

Experimental Data Collection for the Cosolvent Model

Details regarding the materials and methods used in determining the experimental solubility of compounds in PEG 400 have been described previously.[5] Briefly, all drugs studied experimentally (listed in Table 2) were purchased from Sigma-Aldrich, Inc (St Louis, MO). Only the free forms of each drug were used, and differential scanning calorimetry, X-ray diffractometry, and/or microscopy were used to verify each compound's crystallinity.

For each drug, an amount sufficient to ensure saturation was mixed with 200 μL of 0%, 25%, 50%, and 75% (vol/vol) PEG 400 (J.T. Baker, Phillipsburg, NJ) in separate vials. These vials were shaken at room temperature (23 ± 2°C) for at least 24 hours in order to obtain equilibrium, which was confirmed by comparing various samples at 24 and 48 hours. The vials were centrifuged at 14000 rpm for 15 minutes to separate the saturated solution from the excess solid. The supernatant from each vial was filtered and/or diluted as necessary for quantitation purposes. The diluted samples, along with an appropriate standard curve, were analyzed on a Waters 2690 High Performance Liquid Chromatography (HPLC), Milford, MA) with a Waters 996 Photodiode Array Detector. Solubility in 100% PEG 400 was also determined for 94 of the compounds in Table 2, but these data were not used in the in silico modeling previously described.[5] As each compound listed in Table 2 is also included in Table 1, the molecular weight, structure, and log P information does not reappear in Table 2.

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Table 1. Data Set Used for Generation of the Aqueous Model*

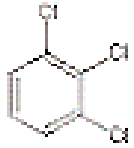
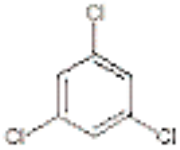
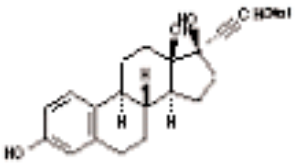
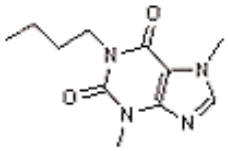
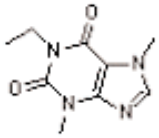
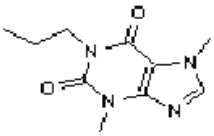
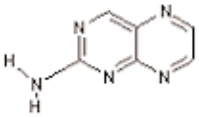
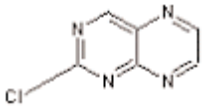
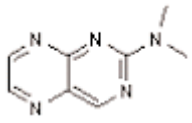
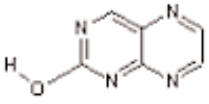
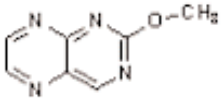
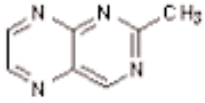
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
1,2,3-Trichlorobenzene		181.45	52.6	3.8	–3.76	18
1,3,5-Trichlorobenzene		181.45	63.4	4.3	–4.44	18
1,4-Dibromobenzene		235.91	87.31	4.1	–4.07	18
17Alpha-ethynylestradiol		296.41	143.5	4.5	–4.484	10
1-Butyltheobromine		236.27		0.9	–1.625	9
1-Ethyltheobromine		208.22		–0.2	–0.719	9
1-Propyltheobromine		222.25		0.4	–1.207	9
2-Aminopteridine		147.14		–1.5	–2.298	7
2-Chlorpteridine		166.57		0.0	–0.699	7
2-Dimethylaminopteridine		175.19		–1.2	0.36	7
2-Hydroxypteridine		148.12		–1.1	–1.947	7
2-Methoxypteridine		162.15		–0.6	–1.112	7
2-Methylpteridine		146.15		–1.0	–0.094	7

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

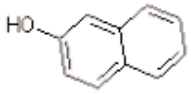
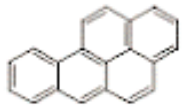
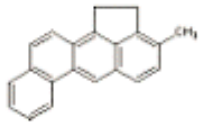
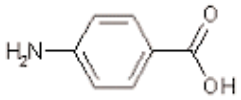
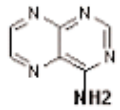
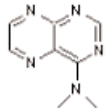
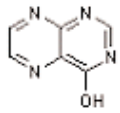
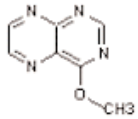
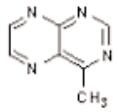
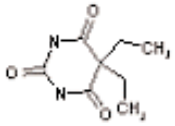
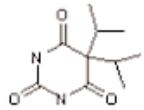
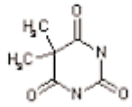
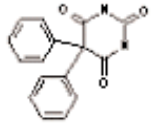
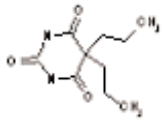
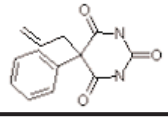
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
2-Naphthol		144.17	122	2.7	–2.159	M§
3,4-Benzopyrene		252.31	179	6.5	–7.82	18
3-Methylcholanthrene		268.36	179.5	7.1	–7.97	18
4-Aminobenzoic acid		137.14	187.75	0.0	–1.368	A‖
4-Aminopteridine		147.14		0.0	–2.313	7
4-Dimethylaminopteridine		175.19		0.2	–1.021	7
4-Hydroxypteridine		148.12		–1.2	–1.471	7
4-Methoxypteridine		162.15		–0.1	–1.112	7
4-Methylpteridine		146.15		–0.8	–0.466	7
5,5-Diethylbarbiturate		184.19	190	0.7	–1.41	8
5,5-Di-i-propylbarbiturate		212.25	227.5	1.4	–2.766	16
5,5-Dimethylbarbiturate		156.14	278	–0.4	–1.742	16
5,5-Diphenylbarbiturate		280.28	288	2.6	–4.196	16
5,5-Dipropylbarbiturate		212.25	146.5	1.7	–2.527	8
5-Allyl-5-phenylbarbiturate		244.25	158.5	2.0	–2.346	8

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

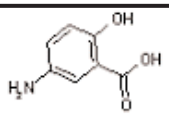
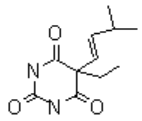
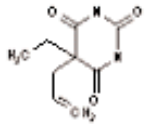
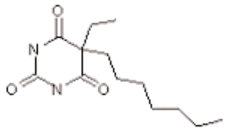
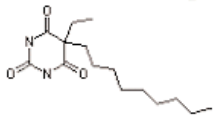
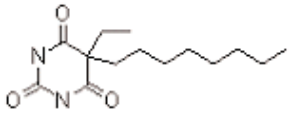
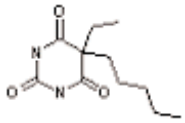
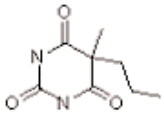
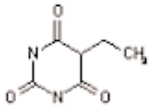
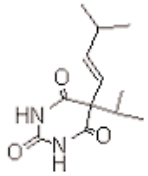
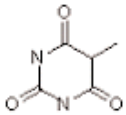
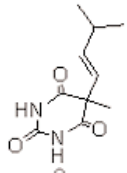
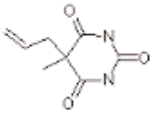
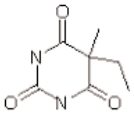
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
5-Aminosalicylic acid		153.14	280	0.5	–2.259	A
5-Ethyl-5-(3-methylbut-2-enyl)barbiturate		224.26	158.3	2.0	–2.253	16
5-Ethyl-5-allylbarbiturate		196.21	160.7	0.9	–1.614	16
5-Ethyl-5-heptylbarbiturate		254.33	118	3.3	–3.218	8
5-Ethyl-5-nonylbarbiturate		282.38	113	4.4	–4.462	8
5-Ethyl-5-octylbarbiturate		268.36	113	3.9	–3.943	8
5-Ethyl-5-pentylbarbiturate		226.27	135	2.3	–2.34	8
5-Ethyl-5-propylbarbiturate		198.22	144	1.2	–1.491	8
5-Ethyl-barbiturate		156.14	191	–0.4	–1.427	8
5-i-Propyl-5-(3-methylbut-2-enyl)barbiturate		238.29	131.3	2.3	–2.593	16
5-Methyl barbiturate		142.11	220	–0.9	–1.126	8
5-Methyl-5-(3-methylbut-2-enyl)barbiturate		210.23	193	1.5	–2.602	16
5-Methyl-5-allylbarbiturate		182.18	167	0.4	–1.16	16
5-Methyl-5-ethylbarbiturate		170.17	216	0.2	–1.162	8

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

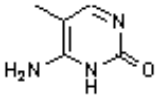
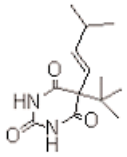
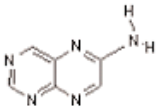
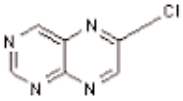
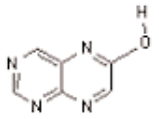
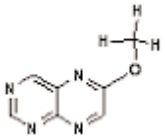
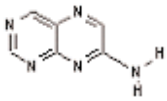
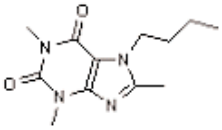
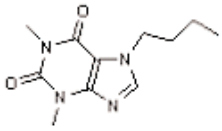
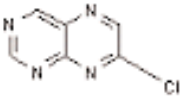
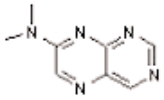
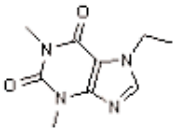
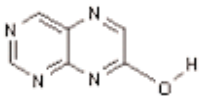
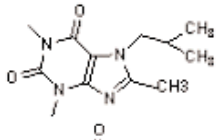
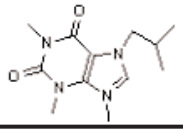
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
5-Methylcytosine		125.13		–1.7	–0.56	M
5-t-Butyl-5-(3-methylbut-2-enyl)barbiturate		252.31	212	2.7	–3.551	16
6-Aminopteridine		147.14		–0.9	–2.343	7
6-Chlorpteridine		166.57		–0.3	–1.124	7
6-Hydroxypteridine		148.12		–1.5	–2.714	7
6-Methoxypteridine		162.15		–0.4	–1.139	7
7-Aminopteridine		147.14		–0.9	–2.313	7
7-Butyl-8-methyltheophylline		250.30		1.6	–1.745	9
7-Butyltheophylline		236.27		1.5	–1.805	9
7-Chlorpteridine		166.57		–0.3	–0.876	7
7-Dimethylaminopteridine		175.19		–1.3	–0.021	7
7-Ethyltheophylline		208.22		0.5	–0.757	9
7-Hydroxypteridine		148.12		–1.5	–2.124	7
7-Isobutyl-8-methyltheophylline		250.30		1.4	–1.599	9
7-Isobutyltheophylline		236.27		1.3	–0.942	9

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

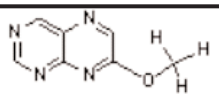
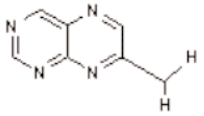
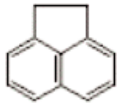
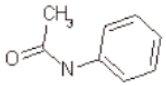
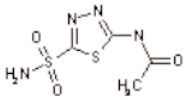
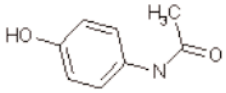
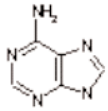
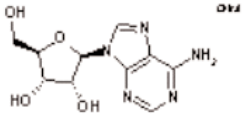
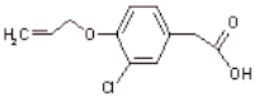
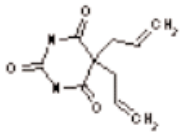
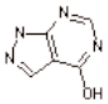
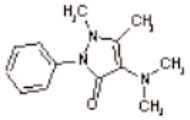
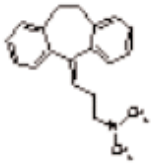
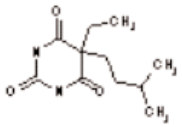
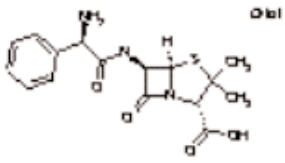
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
7-Methoxypteridine		162.15		–0.4	–0.91	7
7-Methylpteridine		146.15		–0.8	–0.854	7
Acenaphthene		154.21	95	4.0	–4.59	18
Acetanilide		135.17	114	1.1	–1.398	M
Acetazolamide		222.25	258.5	–0.3	–2.489	A
Acetaminophen		151.16	169.75	0.3	–1.074	A
Adenine		135.13		–0.1	–2.432	M
Adenosine		267.244	234.5	–1.3	–1.728	A
Alclofenac		226.66	92.5	2.8	–3.125	6
Allobarbital		208.22	172	1.2	–1.796	M
Allopurinol		136.11		–1.3	–2.453	A
Aminopyrine		231.30	108	0.8	–0.619	M
Amitriptyline		277.41		6.1	–4.456	15
Amobarbital		226.27	157	2.1	–2.47	M
Ampicillin		349.40	200.5	1.4	–1.539	A

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

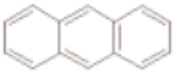
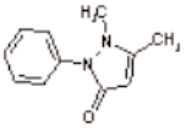
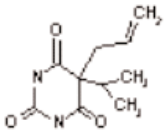
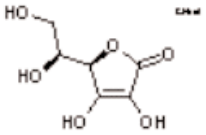
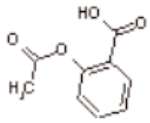
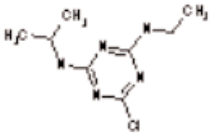
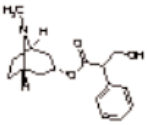
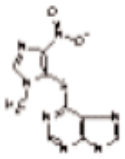
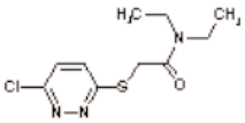
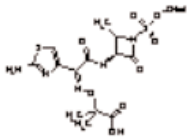
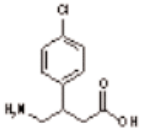
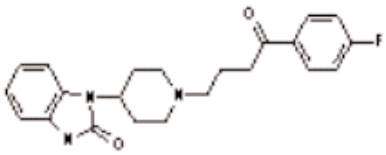
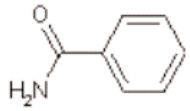
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Anthracene		178.23	218	4.6	–6.38	18
Antipyrine		188.23	112	0.3	0.48	14
Aprobarbital		210.23	142.7	1.3	–1.71	8
Ascorbic acid		176.13	191	–2.4	0.277	A
Aspirin		180.16	135	1.2	–1.733	M
Atrazine		215.69	172.5	1.0	–3.489	M
Atropine		289.37	115	1.5	–2.124	A
Azathioprine		277.26	243.5	0.9	–3.443	A
Azintamide		259.75	97.5	1.6	–1.716	A
Aztreonam		435.43	227	–2.2	–1.639	A
Baclofen		213.66		1.6	–1.696	A
Benperidol		381.45	170.9	3.7	–4.28	A
Benzamide		121.14	130	0.7	–0.953	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

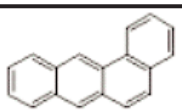
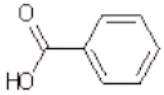
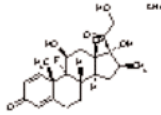
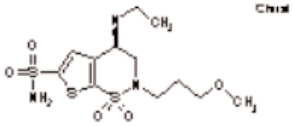
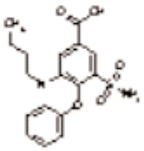
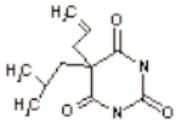
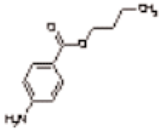
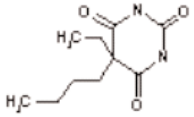
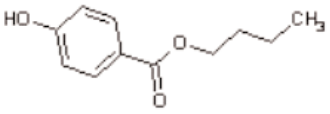
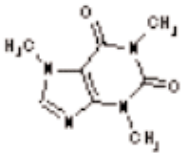
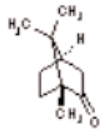
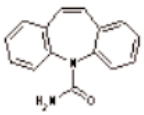
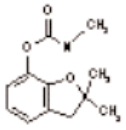
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Benzanthracene		228.30	160	5.9	–7.21	18
Benzoic acid		122.12	122.4	1.9	–1.555	A
Betamethasone		392.47	232.5	2.1	–3.77	17
Brinzolamide		383.50		0.2	–2.95	A
Bumetanide		364.42	230.5	2.8	–3.562	14
Busulfan		246.30	116	–0.5	–2.267	A
Butalbital		224.26	140	1.8	–2.119	8
Butamben		193.25	58	3.6	–3.131	M
Butobarbitone (Butethal)		212.25	125.5	1.7	–1.686	8
Butylparaben		194.23	68.5	3.5	–3.101	M
Caffeine		194.19		–0.1	–0.951	M
Camphor		152.24	179.8	2.1	–2.086	A
Carbamazepine		236.27	191.5	2.7	–3.294	A
Carbofuran		221.26	151.5	1.8	–2.5	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

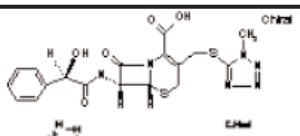
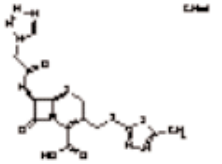
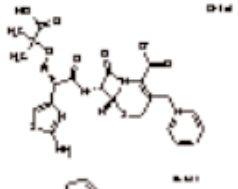
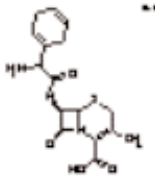
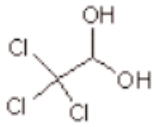
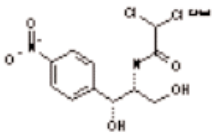
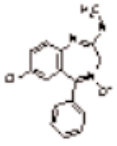
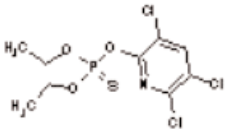
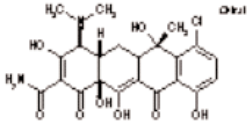
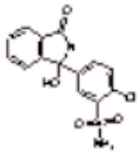
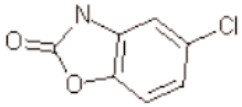
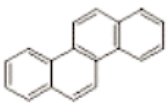
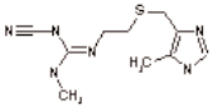
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Cefamandole		462.50		1.5	–0.143	14
Cefazolin		454.50	190	1.1	–2.616	A
Ceftazidime		546.57	136	0.0	–2.038	A
Cephradine		349.40		1.0	–1.215	A
Chloral hydrate		165.40	57	1.7	1.7	A
Chloramphenicol		323.13	151	1.0	–2.111	A
Chlordiazepoxide		299.76	236	1.0	–2.176	14
Chlorpyrifos		350.58	41.5	4.8	–5.244	M
Chlortetracycline		478.89	168.5	3.6	–2.94	A
Chlorthalidone		338.76	225	–0.7	–3.451	A
Chlorzoxazone		169.57	191.75	2.2	–2.831	A
Chrysene		228.29	254	5.0	–8.06	18
Cimetidine		252.34	142	0.4	–1.613	A

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

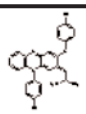
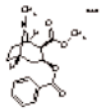
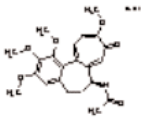
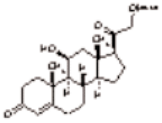
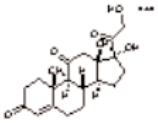
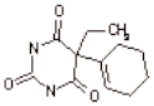
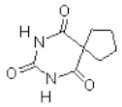
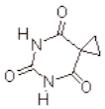
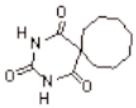
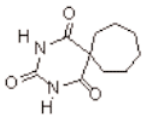
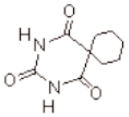
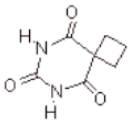
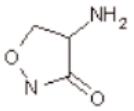
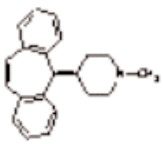
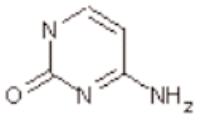
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Clofazimine		473.40	211	7.5	–5.8	A
Cocaine		303.36	98	3.0	–2.26	A
Colchicine		399.44	146	1.0	–0.944	A
Corticosterone		346.47	145	1.8	–3.24	17
Cortisone		360.45	222	1.2	–3.27	17
Cyclobarbital		236.27	172.5	2.1	–2.273	8
Cyclobutane-spirobarbiturate		182.18	271.5	0.1	–2.349	16
Cycloethane-spirobarbiturate		154.13	325	–1.0	–1.886	16
Cycloheptane-spirobarbiturate		224.26	228	1.8	–2.982	16
Cyclohexane-spirobarbiturate		210.23	266	1.2	–3.168	16
Cyclopentane-spirobarbiturate		196.21	288	0.7	–3.06	16
Cyclopropane-spirobarbiturate		168.15	257	–0.5	–1.655	16
Cycloserine		102.09	155.5	–1.8	–0.009	A
Cyproheptadine		287.40	112.8	6.6	–1.898	A
Cytosine		111.10		–1.7	–1.159	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

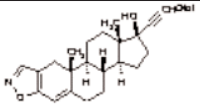
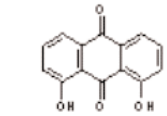
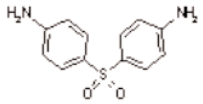
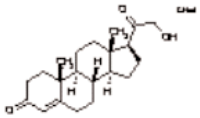
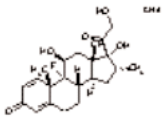
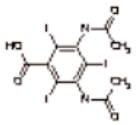
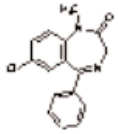
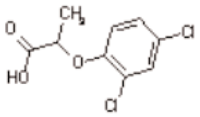
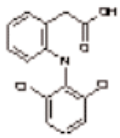
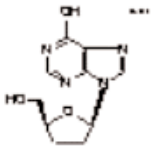
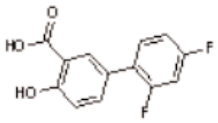
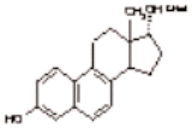
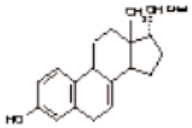
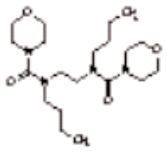
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Danazol		337.46	225.6	4.7	–5.507	11
Danthron		240.21	195	3.8	–5.187	M
Dapsone		248.30	175.5	0.9	–3.094	A
Deoxycorticosterone		330.47	141.5	3.4	–3.45	17
Dexamethasone		392.47	263	2.1	–3.59	17
Diatrizoic acid		613.90		1.6	–2.788	A
Diazepam		284.74	125.5	3.0	–3.754	14
Dichlorprop		235.07	117.5	2.9	–2.827	M
Diclofenac		296.15	157	3.3	–5.097	6
Didanosine		236.23	161.5	–1.3	–0.937	A
Diflunisal		250.20	210.5	4.3	–4.479	A
Dihydroequilenin		268.35	174.5	4.0	–4.642	10
Dihydroequilin		270.37	174	3.8	–4.402	10
Dimorpholamine		398.54	41.5	–0.2	0.098	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

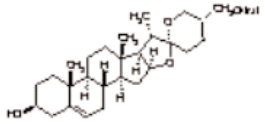
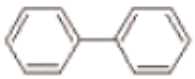
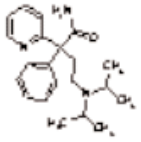
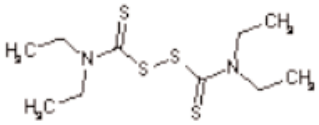
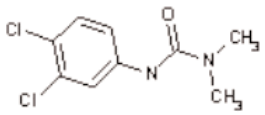
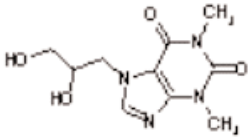
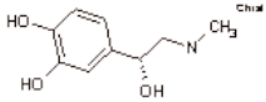
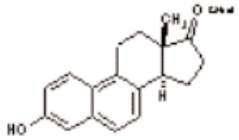
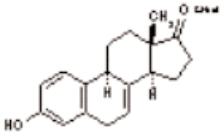
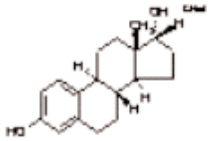
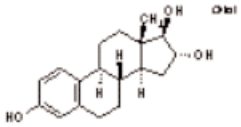
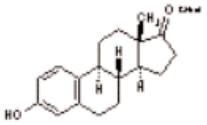
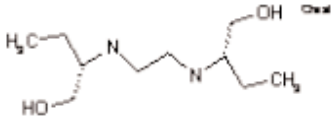
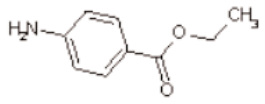
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Diosgenin		414.63	205.5	5.7	–2.618	A
Diphenyl		154.21	70	4.0	–4.34	18
Disopyramide		339.48	94.75	2.9	–1.701	14
Disulfiram		296.52	70	4.0	–2.995	A
Diuron		233.10	158.5	2.8	–3.76	M
Dyphylline		254.25	158	–1.1	0.118	M
Epinephrine		183.21	211.5	–0.6	–2.74	A
Equilenin		266.34	258.5	3.8	–5.249	10
Equilin		268.35	239	3.5	–5.282	10
Estradiol		272.39	176	4.1	–4.845	10
Estriol		288.39	282	2.9	–4.955	10
Estrone		270.37	255.3	3.7	–3.955	M
Ethambutol		204.31	88.2	–0.1	–0.565	14
Ethyl-4-aminobenzoate (Benzocaine)		165.19	89	2.5	–2.616	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

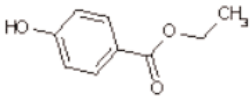
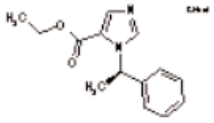
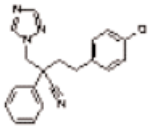
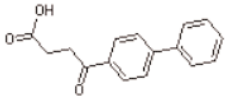
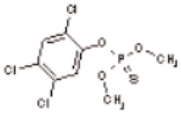
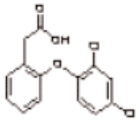
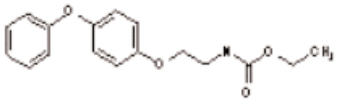
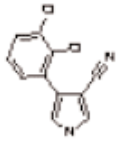
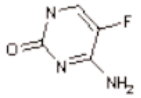
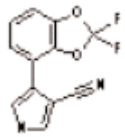
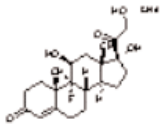
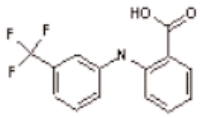
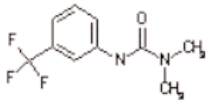
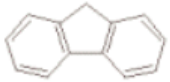
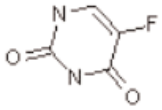
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Ethylparaben		166.18	116	2.4	–2.346	M
Etomidate		244.29	67	3.4	–6.735	A
Fenbuconazole		336.82	125	3.9	–6.226	M
Fenbufen		254.28	186	3.0	–5.301	6
Fenchlorphos		321.55	41	4.8	–3.905	M
Fenclofenac		297.14	135	4.9	–3.854	6
Fenoxycarb		301.34	53.5	3.8	–4.719	M
Fenpiclonil		237.09	152.9	2.7	–5.074	M
Flucytosine		129.09	296	–1.8	–0.959	A
Fludioxonil		248.19	199.4	0.4	–5.21	M
Fludrocortisone		380.46	261	1.3	–3.434	A
Flufenamic acid		281.23	125	5.6	–4.623	A
Fluometuron		232.20	163.5	2.4	–3.463	M
Fluorene		166.22	116.5	4.5	–4.92	18
Fluorouracil		130.08	282	–0.8	–1.028	A

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

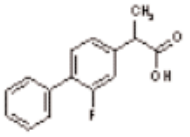
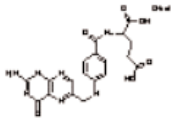
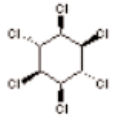
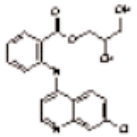
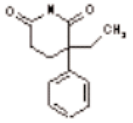
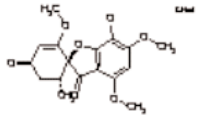
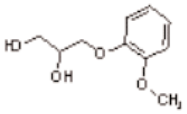
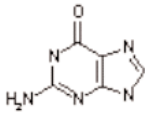
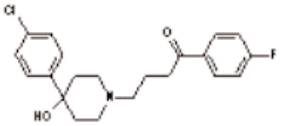
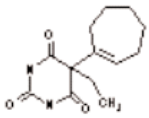
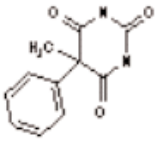
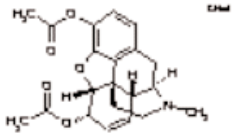
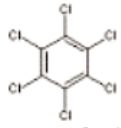
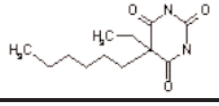
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Flurbiprofen		244.26	110	4.1	–3.74	19
Folic acid		441.40		–2.1	–5.441	A
G-BHC (Lindane)		290.83	112.5	3.9	–4.6	19
Glafenine		372.81	169.5	3.9	–4.571	A
Glutethimide		217.27	87.5	2.7	–2.337	A
Griseofulvin		352.77	220	2.4	–3.246	A
Guaifenesin		198.22	78.75	0.6	–0.598	A
Guanine		151.13		–0.9	–3.577	9
Haloperidol		375.87	148.7	4.1	–4.429	A
Heptabarbital		250.30	175	2.7	–3	8
Heptobarbital		218.21	228.5	1.2	–2.38	16
Heroin		369.42	173	2.1	–2.798	A
Hexachlorobenzene		284.78	231	6.5	–7.76	18
Hexethal		240.30	125	2.8	–3.049	8

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

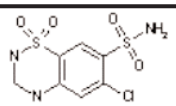
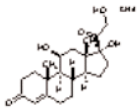
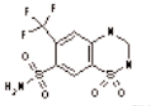
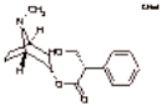
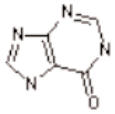
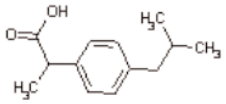
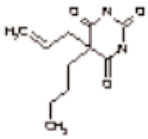
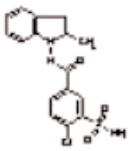
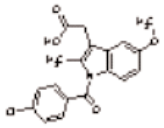
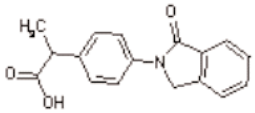
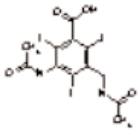
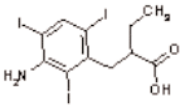
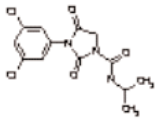
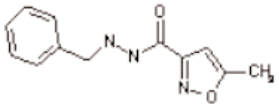
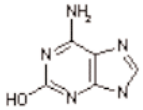
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Hydrochlorothiazide		297.74	274	–0.1	–2.689	A
Hydrocortisone		362.47	218.5	1.4	–3.1	A
Hydroflumethiazide		331.28	272.5	0.5	–3.043	A
Hyoscyamine		289.37	108.5	1.5	–1.91	A
Hypoxanthine		136.11		–0.9	–2.28	M
Ibuprofen		206.28	76	3.7	–3.42	6
Idobutal		224.26	128	2.0	–2.172	8
Indapamide		365.84	161	2.1	–3.792	A
Indomethacin		357.79		3.1	–4.775	A
Indoprofen		281.31	213.5	1.7	–4.824	6
Iodamide		627.94	256	0.1	–2.321	A
Iopanoic acid		570.93	156.1	5.2	–4.58	A
Iprodione		330.17	136	1.8	–4.405	M
Isocarboxazid		231.25	105.5	1.0	–2.461	A
Isoguanine		151.13		–2.1	–3.401	9

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

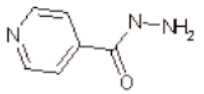
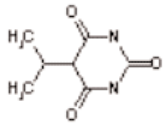
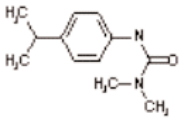
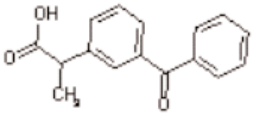
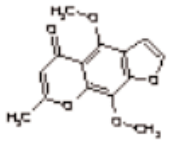
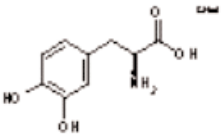
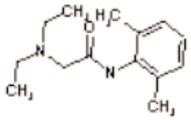
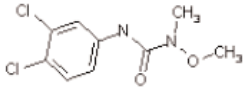
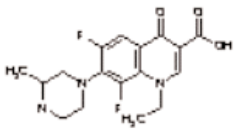
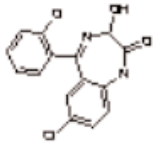
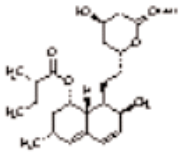
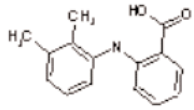
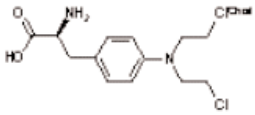
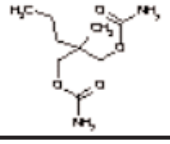
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Isoniazid		137.14	171.4	–0.9	0.009	A
Isopropylbarbiturate		170.17	216	0.0	–1.456	8
Isoproturon		206.29	158	2.3	–3.469	M
Ketoprofen		254.28	94	2.8	–3.155	6
Khellin		260.25	154.5	1.7	–3.017	A
L-DOPA		198.19	277	–0.2	–1.818	A
Lidocaine		234.34	68.5	2.4	–1.768	A
Linuron		249.10	93.5	3.2	–3.521	M
Lomefloxacin		351.35	239.75	2.4	–2.533	A
Lorazepam		321.16	167	2.5	–3.604	M
Lovastatin		404.55	174.5	4.1	–6	A
Mefenamic acid		241.29	230.5	5.3	–3.77	M
Melphalan		305.20	182.5	2.4	–3.485	A
Meprobamate		218.25	105	0.7	–1.807	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

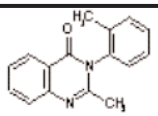
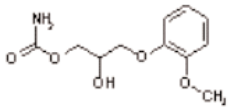
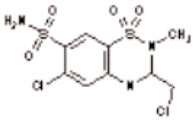
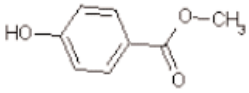
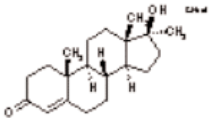
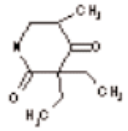
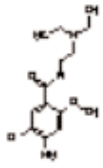
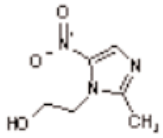
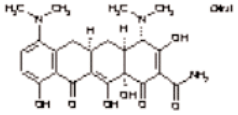
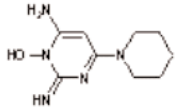
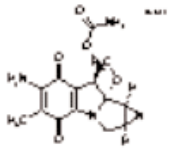
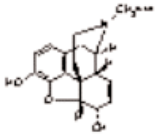
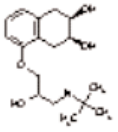
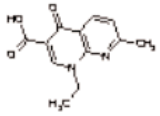
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Methaqualone		250.30	120	2.7	–2.921	A
Methocarbamol		241.24	93	0.5	–0.985	A
Methyclothiazide		360.23	225	1.8	–3.778	A
Methyl-p-hydroxybenzoate		152.15	131	1.9	–1.705	M
Methyltestosterone		302.46	163.5	4.0	–3.99	12
Methyprylon		183.25	75.5	0.2	–0.382	A
Metoclopramide		299.80	147.25	2.3	–3.176	A
Metronidazole		171.16	159	0.0	–1.212	A
Minocycline		457.48		3.4	–0.944	A
Minoxidil		209.25	248	–1.5	–1.978	A
Mitomycin C		334.33	> 360	0.1	–2.564	A
Morphine		285.34	254	1.0	–3.154	A
Nadolol		309.40	125	1.3	–1.008	A
Nalidixic acid		232.24	229.5	0.2	–3.366	M

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

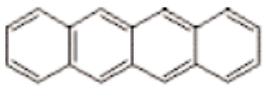
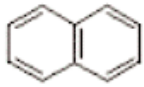
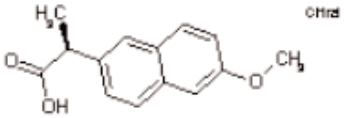
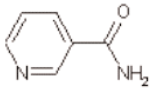
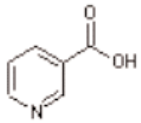
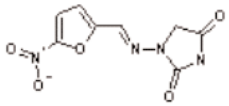
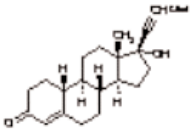
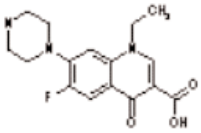
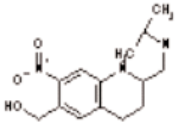
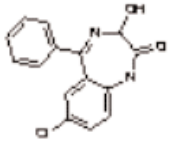
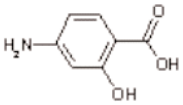
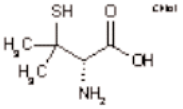
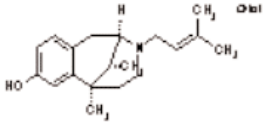
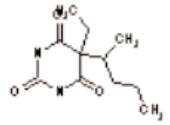
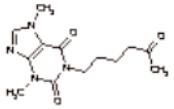
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Naphthacene		228.29	357	5.9	–8.69	18
Naphthalene		128.17	80.2	3.4	–3.61	18
Naproxen		230.26	153	3.0	–4.155	6
Nicotinamide		122.13	129.5	–0.1	0.913	A
Nicotinic acid		123.11	236.6	0.8	–0.85	A
Nitrofurantoin		238.16		–0.5	–3.477	A
Norethisterone		298.42	203.5	3.4	–4.63	12
Norfloxacin		319.33	220.5	1.5	–3.057	A
Oxamniquine		279.34	148	1.5	–2.965	A
Oxazepam		286.72	205.5	2.3	–3.952	11
p-Aminosalicylic acid		153.14	150.5	0.3	–1.963	A
Penicillamine		149.21	204	0.9	–0.128	A
Pentazocin		285.43	146	5.3	–3.803	11
Pentobarbital		226.27	129.5	2.1	–2.41	8
Pentoxifylline		278.31	105	0.4	–0.558	A

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

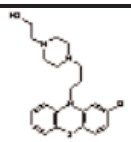
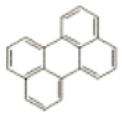
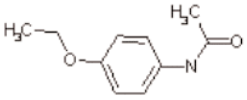
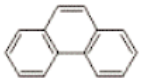
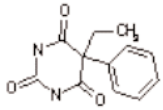
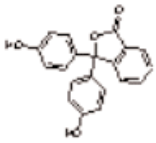
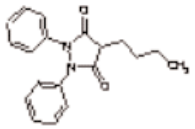
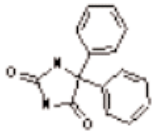
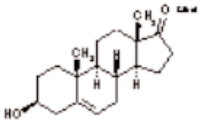
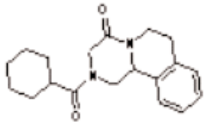
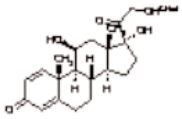
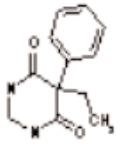
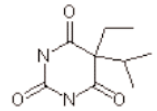
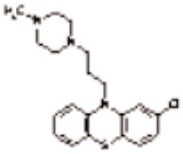
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Perphenazine		403.97	97	4.5	–4.155	15
Perylene		252.31	273.5	6.5	–8.8	18
Phenacetin		179.22	134.5	1.6	–2.371	M
Phenanthrene		178.23	100	4.6	–5.15	18
Phenobarbital		232.24	175	1.7	–2.366	8
Phenolphthalein		318.33	260	3.3	–2.9	19
Phenylbutazone		308.38	105	3.5	–2.644	A
Phenytoin		252.27	296.5	2.5	–4.226	A
Prasterone		288.43	140.5	3.4	–4.064	13
Praziquantel		312.41	137	3.6	–2.893	A
Prednisolone		360.45		1.7	–3.18	17
Primidone		218.25	281.5	–1.0	–2.64	A
Probarbital		198.22	198	1.0	–2.153	8
Prochlorperazine		373.94		4.8	–4.398	15

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

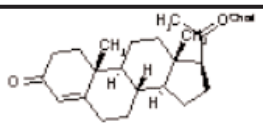
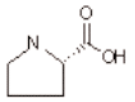
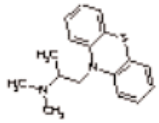
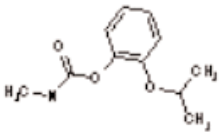
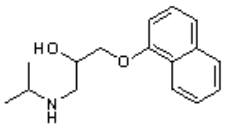
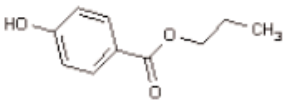
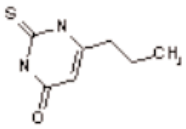
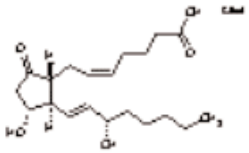
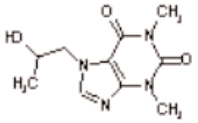
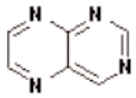
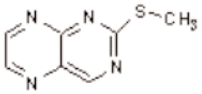
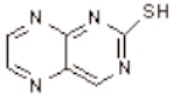
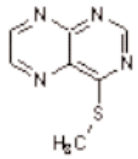
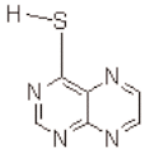
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Progesterone		314.47	126	4.0	–4.42	17
Proline		115.13	221	–0.6	1.149	M
Promethazine		284.42	60	4.7	–4.26	15
Propoxur		209.24	91.5	1.6	–2.02	M
Propranolol		259.35	96	3.1	–0.714	14
Propylparaben		180.20	96.5	2.9	–2.557	M
Propylthiouracil		170.23	220	1.4	–2.185	A
Prostaglandin E2		352.47	67	2.2	–2.47	18
Proxyphlline		238.25	135.5	–0.2	0.623	M
Pteridine		132.12		–1.3	0.021	7
Pteridine-2-methyl-thiol		178.21		0.0	–1.754	7
Pteridine-2-thiol		164.18		–0.1	–2.629	7
Pteridine-4-methyl-thiol		178.21		0.1	–2.365	7
Pteridine-4-thiol		164.18		–0.1	–2.646	7

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

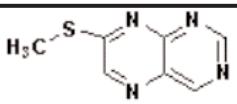
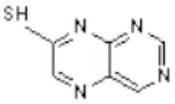
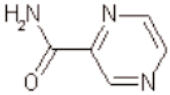
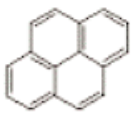
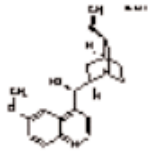
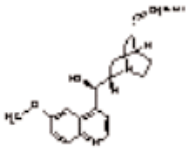
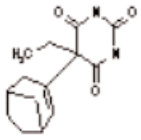
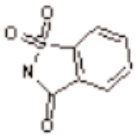
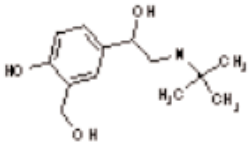
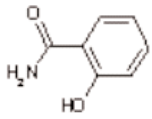
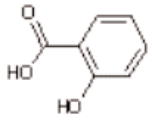
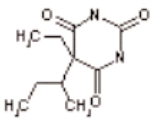
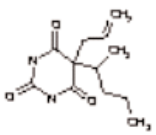
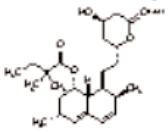
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Pteridine-7-methyl-thiol		178.21		0.2	–1.551	7
Pteridine-7-thiol		164.18		0.0	–2.706	7
Pyrazinamide		123.11	190	–0.4	–0.914	A
Pyrene		202.26	156	5.2	–6.18	18
Quinidine		324.42	174.5	3.4	–2.812	M
Quinine		324.42	177	3.4	–2.79	A
Reposal		262.31	213	2.5	–2.773	8
Saccharin		183.18	229.25	0.9	–1.725	A
Salbutamol		239.31		0.0	–1.224	A
Salicylamide		137.14	140	1.4	–1.836	A
Salicylic acid		138.12	158	2.1	–1.804	A
Secbutabarbital		212.25	166.5	1.6	–2.333	8
Secobarbital		238.29	95	2.3	–2.333	8
Simvastatin		418.57	136.5	4.4	–4.145	A

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

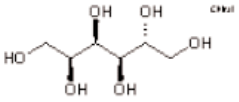
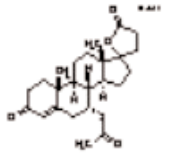
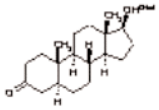
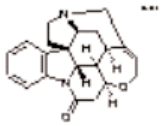
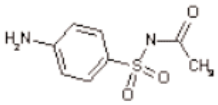
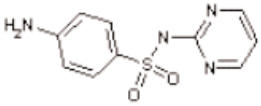
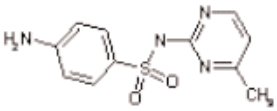
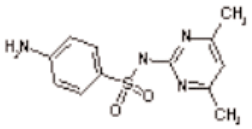
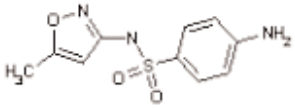
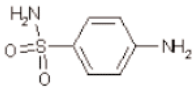
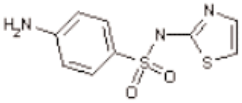
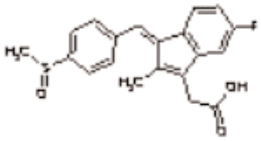
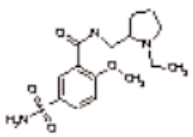
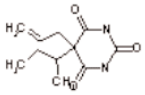
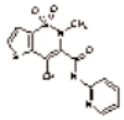
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Sorbitol		182.17	111	–5.0	1.148	A
Spironolactone		416.57		3.2	–4.173	A
Stanolone		290.44	181	3.8	–4.743	13
Strychnine		334.42	280	1.7	–3.33	A
Sulfacetamide		214.24	183	–0.9	–1.507	A
Sulfadiazine		250.27	252.5	–0.1	–3.529	A
Sulfamerazine		264.30	236.5	0.3	–1.218	A
Sulfamethazine		278.33	176	0.8	–2.268	A
Sulfamethoxazole		253.28	171.5	0.9	–2.705	A
Sulfanilamide		172.20	165.5	–0.7	–1.361	M
Sulfathiazole		255.31	202	0.3	–2.805	A
Sulindac		356.41	183.5	3.6	–5	6
Sulpiride		341.42	179	0.5	–2.876	A
Talbutal		224.26	109	1.8	–2.016	8
Tenoxicam		337.38	211	–0.3	–3.875	A

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

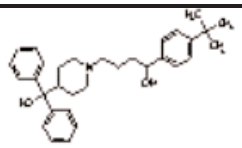
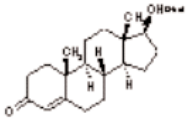
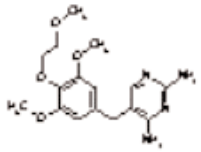
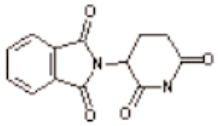
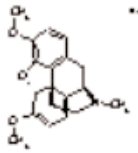
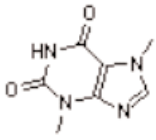
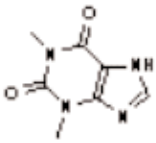
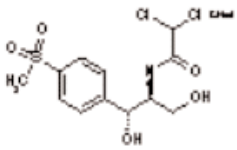
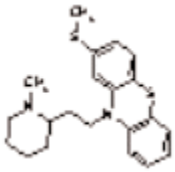
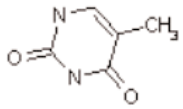
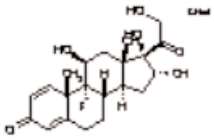
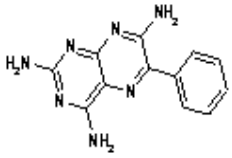
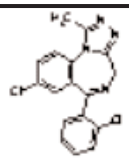
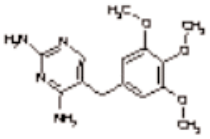
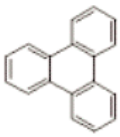
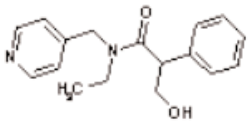
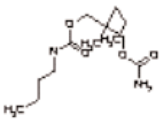
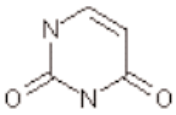
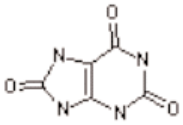
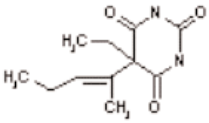
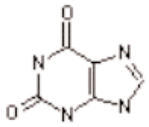
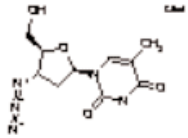
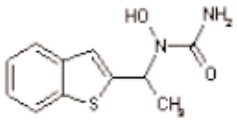
Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Terfenadine		471.68	147.5	6.9	–4.674	A
Testosterone		288.43	155	3.5	–4.07	17
Tetroxoprim		334.38	154.5	0.5	–2.101	M
Thalidomide		258.23	270	0.5	–3.699	M
Thebaine		311.38	193	4.6	–2.658	M
Theobromine		180.17		–0.8	–2.557	M
Theophylline		180.17		0.1	–1.335	M
Thiamphenicol		356.22	165.3	–0.3	–2.154	A
Thioridazine		370.57	73	6.1	–5.824	15
Thymine		126.11		–0.1	–1.499	M
Triamcinolone		394.44	270	1.1	–3.693	A
Triamterene		253.27		1.3	–3.946	¶

Table 1. Data Set Used for Generation of the Aqueous Model (Continued)*

Name	Structure	MW	MP (°C)	log P†	logS‡	Ref.
Triazolam		343.21	234	2.7	–4.09	14
Trimethoprim		290.32	201	0.8	–2.861	A
Triphenylene		228.29	199	5.5	–6.73	18
Tropicamide		284.36	98	1.2	–1.698	A
Tybamate		274.36	51.5	2.9	–2.739	A
Uracil		112.09		–1.1	–1.493	M
Uric acid		168.11		–2.4	–3.402	M
Vinbarbital		224.26	165	1.8	–2.458	8
Xanthine		152.11		–0.6	–2.483	9
Zidovudine		267.24	109	–0.6	–1.029	A
Zileuton		236.29	157.5	2.9	–3.373	A

*MW indicates molecular weight; MP, Melting Point; Ref, reference number.

† log P calculated using ACD software.

‡ Aqueous solubility (mol/L) reported in literature.

§ M: data from the Merck Index.

‖ A: data from the Analytical Profile of Drug Substances.

¶ Triamterene is not among the 321 compounds in Reference 4, but is among the 122 compounds in Reference 5.

Table 2. Data Set Used for Generation of the Cosolvent Model*

	Experimental logS†				
Name	**Aqueous**	**25% PEG**	**50% PEG**	**75% PEG**	**100% PEG**
Acetazolamide	–2.443	–2.021	–1.332	–1.105	–1.318
Adenine	–2.051	–1.608	–1.408	–1.137	–1.345
Adenosine	–1.704	–1.342	–1.220	–1.155	–1.637
Allopurinol	–2.000	–1.629	–1.350	–1.202	ND
p-Aminobenzoic acid	–0.993	–0.649	–0.034	0.303	0.304
Aminopyrine	–1.040	–0.613	–0.648	–0.631	–0.591
5-Aminosalicylic acid	–2.180	–1.925	–1.628	–1.767	ND
p-Aminosalicylic acid	–2.007	–1.250	–0.555	–0.049	–0.134
Ampicillin	–1.645	–1.345	–1.603	–1.929	–3.115
Aspirin	–1.681	–1.080	–0.564	–0.303	–0.132
Atropine	–2.183	–1.575	–1.297	–1.249	–1.339
Azathioprine	–3.279	–2.772	–2.260	–1.611	–1.389
Baclofen	–1.781	–1.760	–1.963	–2.244	ND
Benzamide	–1.074	–0.511	–0.193	–0.389	–0.555
Benzocaine	–2.212	–1.507	–0.796	–0.088	0.046
Benzoic acid	–1.598	–0.948	–0.168	0.323	0.219
Biphenyl	–4.894	–3.292	–2.334	–1.108	ND
Bumetanide	–4.118	–3.477	–2.179	–0.959	–0.521
Butamben	–3.051	–2.070	–1.031	0.273	0.475
Butylparaben	–2.963	–1.955	–0.908	0.405	0.425
Caffeine	–1.017	–1.108	–1.131	–1.220	–1.219
DL-Camphor	–2.005	–1.680	–1.418	–0.870	ND
Carbamazepine	–3.159	–2.126	–1.433	–0.736	–0.862
Cephradine	–1.232	–1.423	–1.756	–2.038	–3.143
Chloramphenicol	–1.937	–1.592	–0.936	–0.370	–0.324
Chlorthalidone	–3.336	–2.233	–1.269	–0.822	–0.878
Chlorzoxazone	–2.873	–2.277	–1.496	–0.568	–0.493
Cimetidine	–1.074	–1.026	–0.670	–0.519	–0.800
Clofazimine	–6.244	–3.224	–2.943	–2.854	–1.721
Corticosterone	–3.179	–2.756	–2.190	–2.021	ND
Cortisone	–3.175	–2.774	–2.382	–1.808	–1.660
Cytosine	–1.213	–1.105	–1.046	–1.112	–1.814
Dapsone	–3.070	–1.629	–0.556	–0.169	–0.748
Deoxycorticosterone	–3.589	–2.881	–2.400	–1.385	–0.961
Dexamethasone	–3.681	–2.957	–2.243	–1.377	–1.372
Diatrizoic acid	–2.006	–2.592	–2.301	–1.611	–0.996
Diflunisal	–4.114	–3.187	–2.128	–1.208	–1.332
Diosgenin	–5.075	–5.266	–4.699	–3.647	–2.111
5,5-Diphenylhydantoin	–4.123	–3.003	–1.937	–1.154	ND
Disopyramide	–1.750	–1.841	–1.438	–0.787	–0.339
Diuron	–3.949	–3.412	–2.938	–2.829	ND
Equilin	–4.994	–3.903	–2.891	–1.752	–1.193
Estradiol-17-alpha	–5.310	–3.944	–2.826	–1.629	–1.373
Estriol	–4.095	–3.089	–2.187	–1.315	–1.341
Estrone	–5.255	–4.281	–3.257	–2.251	–1.871
Ethylparaben	–2.291	–1.423	–0.475	0.261	0.242
Ethynylestradiol-17-alpha	–4.506	–3.000	–1.681	–1.097	ND
Fenbufen	–4.144	–3.618	–2.727	–1.520	–1.006
Flufenamic acid	–4.408	–3.583	–2.368	–1.354	–1.074

Table 2. Data Set Used for Generation of the Cosolvent Model* (Continued)

	Experimental logS†				
Name	**Aqueous**	**25% PEG**	**50% PEG**	**75% PEG**	**100% PEG**
5-Fluorocytosine	–1.153	–0.938	–1.279	–2.066	ND
5-Fluorouracil	–0.980	–1.055	–0.930	–1.786	ND
Flurbiprofen	–3.865	–2.955	–1.664	–0.148	0.102
Folic acid	–4.886	–4.097	–3.806	–3.123	ND
Glafenine	–4.537	–3.099	–2.671	–1.734	–1.358
Griseofulvin	–4.560	–2.506	–1.356	–0.210	–0.162
Guaifenesin	–0.960	–0.368	–0.078	–0.025	–0.308
Guanine	–4.069	–4.272	–4.014	–3.956	–4.243
Haloperidol	–4.975	–2.048	–1.976	–2.236	ND
Hydrochlorothiazide	–2.783	–1.751	–0.968	–0.661	–1.072
Hydrocortisone	–3.031	–2.539	–2.133	–1.456	–1.855
Hydroflumethiazide	–3.086	–2.183	–1.362	–1.331	–1.480
Hyoscyamine	–1.724	–1.357	–1.316	–1.179	ND
Ibuprofen	–3.625	–2.092	–1.866	–0.261	0.079
Indapamide	–3.696	–2.830	–1.813	–0.477	–0.619
Indoprofen	–4.308	–3.592	–2.593	–1.547	–1.267
Iopanoic acid	–5.477	–4.172	–2.809	–1.027	–0.569
Ketoprofen	–3.282	–2.364	–1.214	–0.068	–0.020
Khellin	–3.124	–2.438	–2.167	–2.153	ND
Linuron	–3.594	–2.738	–1.757	–1.526	ND
Mefenamic acid	–5.182	–3.801	–3.269	–1.868	–1.054
Methocarbamol	–1.322	–1.366	–1.996	–2.031	ND
Methylparaben	–2.057	–1.095	–0.352	–0.196	–0.843
Metronidazole	–1.131	–1.210	–1.054	–1.010	–1.159
Minoxidil	–1.938	–1.467	–1.295	–1.681	–1.836
Nadolol	–1.008	–1.165	–1.006	–0.914	–1.115
Nalidixic acid	–3.503	–3.606	–3.359	–2.570	–2.207
Naphthalene	–3.672	–2.599	–1.772	–0.702	0.047
2-Naphthol	–2.269	–1.138	–0.056	–0.030	–0.144
Naproxen	–3.787	–2.706	–1.634	–0.571	–0.286
Nitrofurantoin	–3.489	–3.264	–2.681	–1.780	–1.369
Norethisterone	–4.657	–3.526	–3.142	–2.196	–1.556
Norfloxacin	–2.761	–2.671	–2.538	–2.524	–1.695
Paracetamol	–1.077	–0.446	–0.024	0.167	–0.063
Perphenazine	–4.339	–2.962	–1.912	–1.837	ND
Phenacetin	–2.348	–1.771	–1.275	–0.701	–0.534
Phenolphthalein	–4.999	–2.903	–1.360	–1.094	–1.128
Phenylbutazone	–4.127	–3.630	–2.766	–1.675	–0.716
Praziquantel	–3.193	–2.875	–2.334	–1.640	ND
Prednisolone	–3.178	–2.592	–1.981	–1.182	–1.223
Primidone	–2.364	–2.337	–1.807	–1.526	–1.630
Progesterone	–4.169	–3.731	–3.021	–2.159	–1.397
Propylparaben	–2.740	–1.784	–0.719	0.031	0.118
Pyrazinamide	–0.565	–0.521	–0.520	–0.543	ND
Quinidine	–2.768	–2.660	–2.002	–1.298	–1.166
Quinine	–2.426	–2.171	–1.356	–0.756	–0.361
Salicylamide	–1.773	–1.028	–0.394	0.148	0.331
Salicylic acid	–1.857	–1.173	–0.374	0.321	0.362
Spironolactone	–4.195	–3.518	–2.832	–1.866	–1.238

Table 2. Data Set Used for Generation of the Cosolvent Model* (Continued)

	Experimental logS†				
Name	**Aqueous**	**25% PEG**	**50% PEG**	**75% PEG**	**100% PEG**
Strychnine	–3.733	–1.932	–1.989	–2.639	ND
Sulfacetamide	–1.535	–0.826	–0.212	0.166	ND
Sulfadiazine	–3.604	–2.831	–2.124	–1.403	–1.173
Sulfamerazine	–3.114	–2.516	–1.666	–1.332	ND
Sulfamethazine	–2.860	–2.145	–1.639	–1.390	–1.290
Sulfamethoxazole	–2.851	–1.813	–0.849	–0.101	–0.070
Sulfanilamide	–1.415	–0.769	–0.642	–0.761	–0.733
Sulfathiazole	–2.177	–1.634	–0.874	–0.199	–0.163
Sulindac	–4.351	–3.508	–2.320	–1.756	ND
Sulpiride	–2.750	–2.023	–1.850	–1.879	ND
Tenoxicam	–3.937	–3.341	–2.715	–2.135	–1.801
Terfenadine	–4.871	–2.408	–2.287	–2.455	ND
Tetraethylthiuram disulfide	–4.610	–3.975	–3.005	–1.635	ND
Theobromine	–2.629	–2.557	–2.569	–2.607	–2.736
Theophylline	–1.196	–1.309	–1.310	–1.259	–1.157
Thiamphenicol	–1.858	–1.580	–1.122	–0.546	–0.564
Thymine	–1.574	–1.491	–1.420	–1.266	–1.471
Triamcinolone	–3.613	–2.988	–2.394	–1.739	–1.851
Triamterene	–3.946	–2.682	–2.150	–1.604	–1.342
1,2,3-Trichlorobenzene	–5.472	–3.718	–2.225	–1.164	–0.384
Trimethoprim	–2.352	–1.760	–1.308	–1.249	–1.249
Uracil	–1.806	–1.601	–1.540	–1.485	ND
Uric acid	–3.613	–3.592	–3.425	–3.313	–4.215
Xanthine	–3.871	–3.607	–3.496	–3.346	–3.783

*PEG indicates polyethylene glycol; ND, not determined.

†Solubility in mol/L.