

# Long-term calculation of Predicted Environmental Concentrations to assess the risk of anticancer drugs in environmental waters

**Pol Dominguez-García<sup>1</sup>, Marta Gibert<sup>1</sup>, Sílvia Lacorte<sup>2</sup> and Cristian Gómez-Canela<sup>1,\*</sup>**

<sup>1</sup> Department of Analytical and Applied Chemistry (Chromatography section), School of Engineering, Institut Químic de Sarrià-Universitat Ramon Llull, Via Agusta 390, 08017 Barcelona, Spain

<sup>2</sup> Institute for Environmental Assessment and Water Research (IDAEA-CSIC). Jordi Girona, 18. 08034 Barcelona, Spain

\* Cristian Gómez-Canela, Institut Químic de Sarrià-Universitat Ramon Llull, Via Agusta 390, 08017 Barcelona, Spain. Telephone: +34-932672343. E-mail: cristian.gomez@iqs.url.edu

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**Table S1.** Consumption data (t) of cytostatic families (ATC codes) from 2013 to 2017 period.

	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
G03- Sex hormones	0.021	0.019	0.018	0.018	0.018
H02- Corticosteroids	0.24	0.25	0.29	0.33	0.35
L01- Antineoplastic agents	1.64	1.63	1.72	1.78	1.87
L02- Endocrine therapy	0.42	0.41	0.41	0.43	0.43
L03-- Immunostimulants	0.01	0.01	0.0004	0	0
L04- Immunosuppressants	2.57	2.77	2.88	2.99	3.1
<b>TOTAL</b>	<b>4.89</b>	<b>5.1</b>	<b>5.33</b>	<b>5.55</b>	<b>5.76</b>

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**Table S2.** Levels of excretion and the percentage of removal for each cytostatic drug. F excretion is the contribution of both urine and feces excretion. Nd (no data available)

ATC code	Name	F excretion	Ref	Fwwtp removal	Ref
G03HA01	Cyproterone	0.33	[1]	0.15	[2]
H02AB07	Prednisone	0.5	nd	0.87	[2]
L01AA01	Cyclophosphamide	0.25	[3]	0.00	[4]
L01AA02	Chlorambucil	0.01	[5]	0.02	[2]
L01AA03	Melphalan	0.16	[3]	0.02	[2]
L01AA06	Ifosfamida	0.5	[4]	0.00	[4]
L01AA09	Bendamustine	0.05	[6]	0.16	[2]
L01AB01	Busulfan	0.02	[7]	0.02	[2]
L01AD02	Lomustine	0	[5]	0.04	[2]
L01AD04	Streptozocin	0.1	[7]	0.019	[2]
L01AD05	Fotemustine	0.5	nd	0.019	[2]
L01AX03	Temozolomide	0.38	[3]	0.0185	[2]
L01AX04	Dacarbazine	0.5	[4]	0.02	[2]
L01BA01	Methotrexate	0.9	[4]	0.95	[4]
L01BA03	Raltitrexed	0.5	[7]	0.0191	[2]
L01BA04	Pemetrexed	0.9	[3]	0.0185	[2]
L01BB02	Mercaptopurine	0.4	[7]	0.0186	[2]
L01BB03	Tioguanine	0.54	[7]	0.0185	[2]
L01BB04	Cladribine	0.44	[7]	0.0185	[2]
L01BB05	Fludarabine	0.6	[8]	0.0185	[2]
L01BB06	Clofarabine	0.6	[5]	0.0185	[2]
L01BB07	Nelarabine	0.066	[9]	0.0185	[2]
L01BC01	Cytarabine	0.1	[4]	0.50	[4]
L01BC02	Fluorouracil	0.39	[3]	0.90	[4]
L01BC03	Tegafur	0.05	[5]	0.02	[2]
L01BC05	Gemcitabine	0.1	[7]	0.40	[4]
L01BC06	Capecitabine	0.11	[8]	0.15	[4]
L01BC07	Azacitidine	0.85	[7]	0.02	[2]
L01BC53	Tegafur, combinations	0.5	nd	0.00	nd
L01CA01	Vinblastine	0.01	[7]	0.18	[2]
L01CA02	Vincristine	0.1	[7]	0.07	[2]
L01CA04	Vinorelbine	0.6	[3]	0.70	[2]
L01CA05	Vinflunine	0.33	[5]	0.87	[2]
L01CB01	Etoposide	0.93	[3]	0.0186	[2]
L01CD01	Paclitaxel	0.85	[3]	0.0938	[2]
L01CD02	Docetaxel	0.81	[3]	0.0448	[2]
L01CD04	Cabazitaxel	0.023	[5]	0.2257	[2]

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L01CX01	Trabectedin	0.01	[5]	0.0212	[2]
L01DB01	Doxorubicin	0.5	[4]	0.0192	[2]
L01DB03	Epirubicin	0.1	[7]	0.0192	[2]
L01DB06	Idarubicin	0.07	[7]	0.0235	[2]
L01DB07	Mitoxantrone	0.23	[7]	0.026	[2]
L01DC01	Bleomycin	0.7	[7]	0.00	nd
L01DC03	Mitomycin	0.1	[4]	0.02	[2]
L01XA01	Cisplatin	0.6	[8]	0.02	[2]
L01XA02	Carboplatin	1	[4]	0.59	[10]
L01XA03	Oxaliplatin	0.5	[7]	0.00	nd
L01XC02	Rituximab	0.5	nd	0.00	nd
L01XC03	Trastuzumab	0.5	nd	0.00	nd
L01XC04	Alemtuzumab	0.5	nd	0.00	nd
L01XC06	Cetuximab	0.5	nd	0.00	nd
L01XC07	Bevacizumab	0.5	nd	0.00	nd
L01XC08	Panitumumab	0.5	nd	0.00	nd
L01XD03	Methyl aminolevulinate	0.5	nd	0.02	[2]
L01XD04	Aminolevulinic acid	0.5	nd	0.02	[2]
L01XE01	Imatinib	0.25	[4]	0.06	[2]
L01XE02	Gefitinib	0.05	[4]	0.19	[2]
L01XE03	Erlotinib	0.02	[4]	0.04	[2]
L01XE04	Sunitinib	0.77	[3]	0.04	[2]
L01XE05	Sorafenib	0.51	[5]	0.85	[2]
L01XE06	Dasatinib	0.19	[7]	0.02	[2]
L01XE07	Lapatinib	0.67	[5]	0.85	[2]
L01XE08	Nilotinib	0.69	[7]	0.78	[2]
L01XE09	Temsirolimus	0.05	[7]	0.00	nd
L01XE10	Everolimus	0.85	[3]	0.00	nd
L01XE11	Pazopanib	0.82	[3]	0.08	[2]
L01XX05	Hydroxycarbamide	0.5	[4]	0.02	[2]
L01XX08	Pentostatin	0.9	[5]	0.02	[2]
L01XX09	Miltefosine	0.5	nd	0.12	[2]
L01XX11	Estramustine	0.05	[4]	0.88	[2]
L01XX14	Tretinoin	0.63	[7]	0.93	[2]
L01XX17	Topotecan	0.66	[5]	0.02	[2]
L01XX19	Irinotecan	0.5	[4]	0.03	[2]
L01XX23	Mitotane	0.6	[4]	0.92	[2]
L01XX25	Bexarotene	0.01	[7]	0.94	[2]
L01XX27	Arsenic trioxide	0.15	[5]	0.02	[2]
L01XX32	Bortezomib	0.5	nd	0.02	[2]
L01XX33	Celecoxib	0.01	[5]	0.12	[2]
L01XX35	Anagrelide	0.01	[5]	0.02	[2]
L02AA01	Dietilestilbestrol	0.5	nd	0.80	[2]

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L02AA04	Fosfestrol	0.5	nd	0.67	[2]
L02AB01	Megestrol	0.78	[7]	0.96	[11]
L02AB02	Medroxyprogesterone	0.5	nd	0.13	[2]
L02AE01	Buserelin	0.2	[7]	0.02	[2]
L02AE02	Leuprorelin	0.05	[7]	0.02	[2]
L02AE03	Goserelin	0.9	[1]	0.00	nd
L02AE04	Triptorelin	0.42	[5]	0.00	nd
L02BA01	Tamoxifen	0.5	[3]	0.93	[2]
L02BA02	Toremifene	0.5	nd	0.94	[2]
L02BA03	Fulvestrant	0.9	[3]	0.94	[2]
L02BB01	Flutamide	0.1	[4]	0.10	[2]
L02BB03	Bicalutamide	0.55	[4]	0.03	[2]
L02BG03	Anastrozole	0.1	[12]	0.03	[2]
L02BG04	Letrozole	0.06	[12]	0.03	[2]
L02BG06	Exemestane	0.01	[12]	0.90	[4]
L02BX03	Abiraterone	0.93	[3]	0.87	[2]
L03AA02	Filgrastim	0.5	nd	0.00	nd
L03AA10	Lenograstim	0.01	[5]	0.00	nd
L03AA13	Pegfilgrastim	0.5	nd	0.00	nd
L03AB03	Interferon gamma	0.5	nd	0.00	nd
L03AB04	Interferon alfa-2a	0.5	nd	0.00	nd
L03AB05	Interferon alfa-2b	0.5	nd	0.00	nd
L03AB07	Interferon beta-1a	0.5	nd	0.00	nd
L03AB08	Interferon beta-1b	0.5	nd	0.00	nd
L03AB10	Peginterferon alfa-2b	0.5	nd	0.00	nd
L03AB11	Peginterferon alfa-2a	0.5	nd	0.00	nd
L03AC01	Aldesleukin	0.5	nd	0.00	nd
L03AX03	BCG vaccine	0.5	nd	0.00	nd
L03AX13	Glatiramer, acetate	0.5	nd	0.00	nd
L03AX16	Plerixafor	0.7	[5]	0.02	[2]
L04AA04	Antithymocyte immunoglobulin (rabbit)	0.5	nd	0.00	nd
L04AA06	Mycophenolic acid	0.63	[9]	0.41	[2]
L04AA10	Sirolimus	0.02	[9]	0.71	[2]
L04AA13	Leflunomide	0.91	[3]	0.03	[2]
L04AA18	Everolimus	0.85	[3]	0.58	[2]
L04AA23	Natalizumab	0.5	nd	0.00	nd
L04AA24	Abatacept	0.5	nd	0.00	nd
L04AA25	Eculizumab	0.5	nd	0.00	nd
L04AA27	Fingolimod	0.025	[5]	0.80	[2]
L04AB01	Etanercept	0.5	nd	0.00	nd
L04AB02	Infliximab	0.5	nd	0.00	nd
L04AB04	Adalimumab	0.5	nd	0.00	nd
L04AB05	Certolizumab pegol	0.5	nd	0.00	nd













Immunomodulatory Agents																	
Category		Drug		Mean Age (years)		Mean Disease Duration (years)		Mean Disease Activity Index (DAI) Score		Mean Disease Activity Index (DAI) Score (n=1)		Mean Disease Activity Index (DAI) Score (n=2)		Mean Disease Activity Index (DAI) Score (n=3)		Mean Disease Activity Index (DAI) Score (n=4)	
L04AA	23	Natalizumab	3.7	1.8	0.071	3.6	1.8	0.069	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AA	24	Abatacept	7.1	3.6	0.14	4.5	2.3	0.088	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AA	25	Eculizumab	0.84	0.43	0.016	1.3	0.66	0.025	1.6	0.79	0.031	1.9	0.95	0.037	2.5	1.3	0.049
L04AA	27	Fingolimod	0.087	0.00043	7	0.16	78	0.00003	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AB	01	Etanercept	16	7.9	0.31	16	8	0.31	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AB	02	Infliximab	13	6.5	0.25	14	6.8	0.26	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AB	04	Adalimumab	8.6	4.3	0.17	9.2	4.6	0.18	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AB	05	Certolizumab pegol	2.6	1.3	0.052	3.7	1.8	0.071	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AC	06	Golimumab	0.46	0.23	0.0089	0.72	0.36	0.014	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AC	03	Anakinra	4.1	2.1	0.08	6.1	3.1	0.12	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AC	05	Ustekinumab	0.3	0.15	0.0058	0.4	0.2	0.0079	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AC	07	Tocilizumab	6.3	3.2	0.12	7.3	3.7	0.14	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AC			0.006		0.00	0.004											
L04AD	08	Canakinumab	6	0.0033	0.00013	9	6	0.00018	nq	nq	nq	nq	nq	nq	nq	nq	nq
L04AD	01	Ciclosporin	300	3	0.11	290	2.9	0.11	280	2.8	0.11	270	2.7	0.11	250	2.5	0.095
L04AD	02	Tacrolimus	20	0.082	0.0032	23	0.092	0.0035	25	0.1	0.0039	32	0.13	0.005	36	0.14	0.0055
L04AX	01	Azathioprine	670	13	0.51	710	14	0.54	750	15	0.58	790	16	0.61	810	16	0.62
L04AX	04	Lenalidomide	1.7	1.5	0.059	1.9	1.8	0.069	2	1.9	0.072	2.8	2.6	0.1	3.7	3.5	0.13