

Curriculum Vitae

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Born: 1967 in Ottobeuren, Germany

Eawag - Swiss Federal Institute
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[Personal Homepage](#)

[Research Group Homepage](#)

[Personal Research Statement](#) (in 'The Analytical Scientist, issue 2015')

Education

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| 1987 - 1991 | Studies in Chemistry
University of Applied Sciences, Isny, Germany |
| 1991 | Diploma in Analytical Chemistry |

Professional Experience

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| | Eawag , Dübendorf, Switzerland |
| 2005 - present | Group Leader of Environmental Analytical Chemistry in the
Department of Environmental Chemistry |
| 2000 - 2005 | Senior Scientist, Department of Water and Agriculture |
| 1997 - 1999 | Scientist, Department of Chemistry |
| | Research Foundation of the Paper Industry , Munich, Germany |
| 1992 – 1997 | Head of Laboratory, Department of Waste Water
Management |
| | Eawag , Dübendorf, Switzerland |
| 1991 - 1992 | Research Assistant, Department of Chemistry |

Major Research Areas

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| Analytical Chemistry | <ul style="list-style-type: none">▪ Development of a transportable high resolution mass spectrometer platform in a trailer (MS2field)▪ Method development for the target, suspect and non-target screening of organic contaminants in ground water, surface water and waste waters by liquid chromatography coupled to high resolution mass spectrometry▪ Development of software workflows and webservices for the mining of high resolution mass spectrometry data (collaboration with Eawag Spin-off of Martin Loos, enviBee GmbH)▪ Hyphenation of gas and liquid chromatography with mass spectrometry (Orbitrap, ToF, TripleQuad instruments) and/or ion mobility spectrometry (IMS) using available atmospheric pressure interfaces (ESI, APCI, APPI, APGC)▪ Advancement of existing active and passive sampling techniques for surface waters▪ Online coupling of sample preparation with LCMS detection for high-throughput measurements of field study samples |
| Environmental Chemistry | <ul style="list-style-type: none">▪ Localization of sources and input pathways of chemicals discharged into surface water by households, agriculture and industry▪ Determination of the occurrence, fate and behavior of emerging contaminants in natural water systems |

Teaching Activities

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| 2007 - present | ETH, Zuerich, Master course on 'Agriculture and Water Quality' |
| 2010 - present | ETH, Zuerich, Master practical course on 'Analysis of Organic Pollutants' |

Major Projects

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| 2020 - 2024 | Input of pharmaceuticals into surface water by the waste water of galenical industry; FOEN, Industries, Cantons, PI |
| 2020 - 2021 | Identification of toxicity in production waste water of an industrial factory using biotests and high resolution mass spectrometry; Industry, PI |
| 2017 - 2019 | MS2field: High-frequency in-situ measurements of organic contaminants in the aquatic environment with a transportable high resolution mass spectrometer (MS2field); Eawag, Co-PI |

2017 - 2020	Measurement and assessment of pyrethroid and organophosphate insecticides in small rivers; FOEN, Cantons, PI
2016 - 2020	Waste water of pharmaceutical and chemical industry as sources of contaminants to natural surface waters; FOEN, Industries, PI
2014 - 2017	Pesticide monitoring in agricultural headwater catchments in Switzerland (NAWA-SPEZ II), FOEN and Cantons, PI
2009 - 2015	Identification of unknown compounds at the international monitoring station Basel; FOEN, Canton Basel City, Federal State of Baden-Wuerttemberg LUBW (Germany), PI
2013 - 2014	Elimination of organic micropollutants in German and Swiss waste water treatment plants with advanced treatment technologies; FOEN, PI
2011 - 2013	Comprehensive assessment of pesticides in medium sized rivers of the Swiss national river monitoring network (NAWA-Spez I); FOEN and Cantons, PI
2012 - 2013	Identification of the contamination level with organic micropollutants in the river Rhone, FOEN and Cantons, PI
2012 - 2013	Software-supported time series analysis of high resolution mass spectrometer data at the international monitoring station Basel; Canton Basel City, Federal State of Baden-Wuerttemberg LUBW (Germany), PI
2009 - 2011	Mass-flux modeling and multi-compound screening for the integrated assessment of organic micropollutants in the catchment of Lake of Constance; International Commission for the Protection of Lake Constance (IGKB), PI
2005 - 2011	Development of sensitive, fast and reliable methods by fully automated solid phase extraction coupled online to liquid chromatography tandem mass spectrometry (separate methods for pharmaceuticals, pesticides, X-ray contrast media, artificial sweeteners), Cantonal Office for Environment in Schaffhausen (IKL), PI
2005 - 2010	Contributions of agricultural and urban uses to the glyphosate contamination of surface waters studied in a small catchment, FOEN, PI
2007 - 2010	Glyphosate loss following application to railway tracks – contamination risk of surface water and ground water; Swiss Federal Railway (SBB) and FOEN, PI

2005 – 2008	Identification of organic micropollutants in ground wells of the Swiss groundwater monitoring network NAQUA, FOEN, PI
1997 – 2005	Evaluation of mitigation measures to reduce diffuse pesticide loss from agricultural fields (Evaluation der Ökomassnahmen – BLW); Federal Office for Agriculture, PI

PhD committees

Martin Loos	Department of Environmental Sciences, ETH Zürich, Switzerland
Leendert Vergeynst	Department of Sustainable Organic Chemistry and Technology, Faculty of Bioscience Engineering, Ghent University, Belgium

Supervision

PhD students	Sabine Anliker, <i>'Detection of contaminant pulses in surface waters by chemical fingerprinting in time series analysis'</i> , ETH, Zürich, ongoing
	Martin Loos, <i>'Mining of High-Resolution Mass Spectrometry Data to Monitor Organic Pollutant Dynamics in Aquatic Systems'</i> , ETH, Zürich, 2012-2015
	Co-Supervisor for the analytical developments within the PhD of Stefan Achermann, Nicole Munz, Mechelke Jonas, Michele Stravs, Christoph Moschet, Sebastian Huntscha, Susanne Kern
Master students	Astrid Mayer, <i>'Target and non-target screening of organic micropollutants in the river Rhine and its main tributaries using GC-DBDI-HRMS'</i> , Universität Duisburg-Essen, Zürich, 2018
	Michael Patrick, <i>'Organic compounds in the treated wastewater of WWTPs with galenical production companies in the catchment'</i> , ETH, Zürich, 2017
	Rahel Comte, <i>'Software-based evaluation of time series for discharges of industrial substances in wastewater effluent measured with LC-HRMS'</i> , ETH, Zürich, 2015
	Anna Brunnert, <i>'Development of a novel online solid phase extraction method with flexible eluent choice coupled to liquid chromatography – high resolution mass spectrometry to</i>

screen organic micropollutants in water, University of Duisburg-Essen, 2014

Bernadette Vogler, *'Development of a Comprehensive Multicomponent Screening Method for Polar Organic Compounds using LC-Orbitrap'*, University of Zürich, 2013

Alessandro Piazzoli, *'Development and Application of a Screening Method for Insecticides and Fungicides in Surface Waters by Liquid Chromatography High Resolution Mass'*, ETH, Zürich, 2012

Annika Woessner, *'The evaluation of analytical and model-based approaches to assess the exposure of surface waters with human pharmaceuticals'*, ETH, Zürich, 2012

Miriam Mueller, *'Polar Organic Micro-pollutants in the River Rhine: Multi-compound Screening and Mass Flux Studies of Selected Substances'*, Technical University of Berlin, 2011

Florian Heeb, *'Mass flux study of polar organic micropollutants in the Haihe River System near Beijing.'*, ETH, Zürich, 2011

Christoph Moschet, *'Georeferenced mass flux modelling of selected micropollutants in the catchment of lake Constance'*, ETH Zürich, 2010

David Pluess, *'Development of a workflow for the non-target screening using a LTQ-Orbitrap mass spectrometer'*, University of Basel, 2010

Carolin Frank, *'Entwicklung einer online Solid Phase Extraktion- Flüssigkeitschromatographie-Tandem-Massenspektrometrie-Methode zur Bestimmung von Arzneimitteln in Spitalabwasser'*, University of Applied Sciences, Weihenstephan, 2009

Simone Bischofberger, *'Urban and agricultural sources and input pathways of glyphosate into surface waters'*, ETH Zürich, 2009

Judith Schenzel, *'Entwicklung einer vollautomatisierten Festphasenanreicherungs-Flüssigkeitschromatographie-Tandem-Massenspektrometrie - Methode zur Quantifizierung ausgewählter Pharmazeutika und Korrosionsschutzmittel in wässrigen Umweltproben'*, Technical University of Karlsruhe, 2008

Benjamin Bomastyk, *'Entwicklung einer Multikomponenten-Screeningmethode zur Identifizierung von organischen Mikroverunreinigungen in ausgewählten Grundwasser-*

vorkommen mittels hochauflösender Hybridmassen-spektrometrie, University of Duisburg-Essen, 2007

Sebastian Huntscha, *Eintrags- und Abbauverhalten von Metolachlor-ESA im Oberflächengewässer - Massenbilanzierung im Greifensee*, University of Trier, 2007

Dorothea Kujawinski, *Anwendung und Validierung einer Analysenmethode zur Bestimmung von Glyphosat, Glufosinat und Aminomethylphosphonsäure in wässrigen Umweltmatrices*, University of Duisburg-Essen, 2006

Project collaborators PostDocs, Research Assistants, and Trainees as non-permanent staff members

Technical collaborators Philipp Longree, Bernadette Vogler and Sebastian Salzmann as permanent Eawag staff members

Other Activities

Reviews Environmental Science and Technology, Water Research, Analytical Chemistry, Journal of Chromatography A, Analytical and Bioanalytical Chemistry, Journal of Hazardous Materials, Science of the Total Environment, Chemosphere, Environmental Pollution, Environmental Science and Pollution Research

Organizing Committees Co-Organizer of the international conference Non-target2016 *'Non-target analysis for environmental risk assessment'*, Durham, USA, 2021

Co-Organizer of the international conference Non-target analysis 2020 *'Non-target screening of organic chemicals for a comprehensive environmental risk assessment'*, Monte Verità, Switzerland, 2016

Co-Organizer of Norman *Non-target collaborative trial workshop and Nontarget screening workshop*, Eawag, Dübendorf, Switzerland, 2014

Main Organizer of PEAK course (practical Eawag course) *'High resolution mass spectrometry'*, Eawag, Dübendorf, Switzerland, 2014

Co-Organizer of the ICCE satellite event *'Non-target screening by liquid chromatography coupled to high resolution mass spectrometry'*, ETH, Zürich, Switzerland, 2011

Commissions	IKSR working group SANA, Germany
	Lab'Eaux working group LCMS, Switzerland
	Lab'Eaux task force Pyrethroids, Switzerland
	GDCh working group NON-TARGET, Germany
	BAFU working group NAWA Parameter, Switzerland

Presentations

2005 - 2020	<i>In total over 50 presentations at national and international conferences</i>
	<i>Selection of personal highlights:</i>
2019	10th National Conference on Environmental Chemistry, Tianjin, China, <i>'Transportable high-resolution mass spectrometry – the future in organic pollutant screening'</i>
2019	67th ASMS Conference on Mass Spectrometry - User Seminar, Atlanta, USA, <i>'On-site environmental monitoring with Q-Exactive HF in a trailer'</i>
2019	Workshop – Umweltbundesamt, Berlin, Deutschland, <i>'Non-Target-Screening – Chancen für die behördliche Gewässerüberwachung'</i>
2018	MS enviDay of the Italian Society for Mass Spectrometry, Naples, Italy, <i>'Contaminant screening in the aquatic environment using high resolution mass spectrometry – methodologies and real world applications'</i>
2017	LC-MS/MS Workshop on Environmental and Food Safety, Buffalo, USA, <i>'Determination of nonpolar pesticides in water samples-switch your LC-MS to GC-MS using ambient ionization sources'</i>
2017	Langenauer Wasserforum, Langenau, Germany, <i>'Polare Spurenstoffe - Welche analytischen Lösungsmöglichkeiten gibt es?'</i>
2016	International Conference on Non-target Screening, Conference Centre Monte Verità, Ascona, Switzerland, <i>'Routine non-target monitoring of river Rhine water quality: A Pandora's box?'</i>
2016	LC/MS/MS Workshop on Environmental Applications, Barcelona, Spain, <i>'Locating point and diffuse sources in the'</i>

aquatic environment by time series acquisition using LC-HRMS data'

- 2015 International Symposium on Pesticide Analysis, Prague, Czech Republic, *'Comprehensive Target and Suspect Screening of Pesticides in Surface Waters - Implications for the Assessment of Surface Water Quality'*
- 2015 Langenauer Wasserforum, Langenau, Germany, *'Flüssigkeitschromatographie mit hochauflösender Massenspektrometrie: Target-, Suspect- und Non-Target-Analytik'*
- 2014 ISEAC Symposium EPFL, Lausanne, Switzerland, *'High-resolution mass spectrometry: exploring the contaminant diversity of the aquatic environment'*
- 2014 Mülheimer Wasseranalytisches Seminar, Mülheim, Germany, *'Die hoch auflösende Massenspektrometrie in der Wasseranalytik Erfahrungen, Ergebnisse, methodische Weiterentwicklungen'*
- 2013 ASMS Annual Conference on Mass Spectrometry, Minneapolis, USA, *'Exact mass screening of 1024 pharmaceuticals in wastewater samples using QExactive mass spectrometer'*
- 2012 ASMS Annual Conference on Mass Spectrometry, Vancouver, Canada, *'Characterization of treated wastewater by high resolution mass spectrometry - Extending the boundaries of non-target screening'*
- 2011 Annual LC/MS/MS Workshop on Environmental Applications and Food Safety, Buffalo, USA, *'Target and non-target screening of organic contaminants in environmental samples using the Orbitrap'*
- 2010 Fall Meeting of the Swiss Chemical Society, Zürich, Switzerland, *'Exploring the target and non-target analyte screening capabilities of high resolution mass spectrometry for natural water samples'*
- 2009 American Chemical Society – ACS National Meeting, Washington, USA, *'Exploring the non-target analyte screening capabilities of high resolution mass spectrometry for natural water samples'*
- 2008 Workshop on Sucralose, European Environment Agency, Copenhagen, Denmark, *'Occurrence of sucralose in Swiss surface, waste and ground water'*

77 publications in peer-reviewed journals

[Web of Science](#) (May 2020)

- Citations 7316
- **H-Index 45**

[GOOGLE Scholar](#) (May 2020)

- Citations 10831
- **H-Index 49**

Anliker, S., Loos, M., Comte, R., Ruff, M., Fenner, K., **Singer, H.***. Assessing Emissions from Pharmaceutical Manufacturing Based on Temporal High-Resolution Mass Spectrometry Data. *Environmental Science & Technology*. 2020;54:4110-20.

Mutzner, L., Vermeirssen, EL., Mangold, S., Maurer, M., Scheidegger, A., **Singer, H.**, Booi, K., Ort, C. Passive samplers to quantify micropollutants in sewer overflows: Accumulation behaviour and field validation for short pollution events. *Water research*. 2019;160, 350-60.

Kienle, C., Vermeirssen, EL., Schifferli, A., **Singer, H.**, Stamm, C., Werner, I. Effects of treated wastewater on the ecotoxicity of small streams—Unravelling the contribution of chemicals causing effects. *PloS one*. 2019;14.

Kiefer, K., Müller, A., **Singer, H.**, Hollender, J. New relevant pesticide transformation products in groundwater detected using target and suspect screening for agricultural and urban micropollutants with LC-HRMS. *Water research*. 2019;165,114972.

Rösch, A., Beck, B., Hollender, J., **Singer, H.P.*** Picogram per liter quantification of pyrethroid and organophosphate insecticides in surface waters: a result of large enrichment with liquid-liquid extraction and gas chromatography coupled to mass spectrometry using atmospheric pressure chemical ionization, *Analytical and Bioanalytical Chemistry*, 2019, 411 (14), 3151-3164.

Mechelke, J., Longrée, P., **Singer, H.*** and Hollender, J. Vacuum-assisted evaporative concentration combined with LC-HRMS/MS for ultra-trace-level screening of organic micropollutants in environmental water samples. *Analytical and Bioanalytical Chemistry*, 2019.

Ju, F., Beck, K., Yin, X., Maccagnan, A., McArdell, C.S., **Singer, H.P.**, Johnson, D.R., Zhang, T. and Bürgmann, H. Wastewater treatment plant resistomes are shaped by bacterial composition, genetic exchange, and upregulated expression in the effluent microbiomes. *ISME Journal*. 2019, 13(2), 346-360.

Hollender, J., Rothardt, J., Radny, D., Loos, M., Epting, J., Huggenberger, P., Borer, P. and **Singer, H.** Comprehensive micropollutant screening using LC-HRMS/MS at three riverbank filtration sites to assess natural attenuation and potential implications for human health. *Water Research X*. 2018.

Moldovan, Z., Marincas, O., Povar, I., Lupascu, T., Longree, P., Rota, J.S., **Singer, H.** and Alder, A.C. Environmental exposure of anthropogenic micropollutants in the Prut River at the Romanian-Moldavian border: a snapshot in the lower Danube river basin. *Environmental Science and Pollution Research*. 2018, 25(31), 31040-31050.

Pastore, C., Barca, E., Del Moro, G., Di Iaconi, C., Loos, M., **Singer, H.P.** and Mascolo, G. Comparison of different types of landfill leachate treatments by employment of nontarget screening to identify residual refractory organics and principal component analysis. *Science of the Total Environment*. 2018, 635, 984-994.

Ruppe, S., Grieshaber, D.S., Langlois, I., **Singer, H.P.** and Mazacek, J. Detective work on the Rhine River in Basel – Finding pollutants and polluters. *Chimia*, 2018, 72(7-8), 547.

Spycher, S., Mangold, S., Doppler, T., Junghans, M., Wittmer, I., Stamm, C. and **Singer, H.*** Pesticide Risks in Small Streams - How to Get as Close as Possible to the Stress Imposed on Aquatic Organisms. *Environmental Science and Technology*. 2018, 52(8), 4526-4535.

Hollender, J., Schymanski, E.L., **Singer, H.P.** and Ferguson, P.L. Nontarget Screening with High Resolution Mass Spectrometry in the Environment: Ready to Go? *Environmental Science and Technology*. 2017, 51(20), 11505-11512.

Munz, N.A., Burdon, F.J., de Zwart, D., Junghans, M., Melo, L., Reyes, M., Schönenberger, U., **Singer, H.P.**, Spycher, B., Hollender, J. and Stamm, C. Pesticides drive risk of micropollutants in wastewater-impacted streams during low flow conditions. *Water Research*. 2017, 110, 366-377.

Loos M, **Singer H.** *Nontargeted homologue series extraction from hyphenated high resolution mass spectrometry data*. *J Cheminform*. 2017;9:12.

Singer H. P.*, Wossner A.E., McArdell C.S., Fenner K., *Rapid Screening for Exposure to "Non-Target" Pharmaceuticals from Wastewater Effluents by Combining HRMS-Based Suspect Screening and Exposure Modeling*. *Environ Sci Technol*. 2016, 50, 6698-6707.

Stravs M.A., Mechelke J., Ferguson P.L., **Singer H. P.**, Hollender J., *Microvolume trace environmental analysis using peak-focusing online solid-phase extraction-nanoliquid chromatography-high-resolution mass spectrometry*. *Anal Bioanal Chem*. 2016, 408, 1879-1890.

Ruff, M.; Mueller, M. S.; Loos, M.; **Singer, H. P.***, *Quantitative target and systematic non-target analysis of polar organic micro-pollutants along the river Rhine using high-resolution mass-spectrometry - Identification of unknown sources and compounds*. *Water Research* 2015, 87, 145-154.

Schymanski, E. L.; **Singer, H. P.**; Slobodnik, J.; Ipolyi, I. M.; Oswald, P.; Krauss, M.; Schulze, T.; Haglund, P.; Letzel, T.; Grosse, S.; Thomaidis, N. S.; Bletsou, A.; Zwiener, C.; Ibáñez, M.; Portolés, T.; De Boer, R.; Reid, M. J.; Onghena, M.; Kunkel, U.; Schulz, W.; Guillon, A.; Noyon, N.; Leroy, G.; Bados, P.; Bogialli, S.; Stipanichev, D.; Rostkowski, P.; Hollender, J., *Non-target screening with high-resolution mass spectrometry: Critical review using a collaborative trial on water analysis*. *Analytical and Bioanalytical Chemistry* 2015, 407, (21), 6237-6255.

Qi, W.; **Singer, H.**; Berg, M.; Müller, B.; Pernet-Coudrier, B.; Liu, H.; Qu, J., *Elimination of polar micropollutants and anthropogenic markers by wastewater treatment in Beijing, China*. *Chemosphere* 2015, 119, 1054-1061.

Moschet, C.; Vermeirssen, E. L. M.; **Singer, H.**; Stamm, C.; Hollender, J., *Evaluation of in-situ calibration of chemcatcher passive samplers for 322 micropollutants in agricultural and urban affected rivers*. *Water Research* 2015, 71, 306-317.

- Loos, M.; Gerber, C.; Corona, F.; Hollender, J.; **Singer, H.**, *Accelerated isotope fine structure calculation using pruned transition trees*. *Analytical Chemistry* 2015, 87, (11), 5738-5744.
- Schymanski, E. L.; **Singer, H. P.**; Longree, P.; Loos, M.; Ruff, M.; Stravs, M. A.; Ripolles Vidal, C.; Hollender, J., *Strategies to Characterize Polar Organic Contamination in Wastewater: Exploring the Capability of High Resolution Mass Spectrometry*. *Environmental Science & Technology* 2014, 48, (3), 1811-1818.
- Schymanski, E. L.; Jeon, J.; Gulde, R.; Fenner, K.; Ruff, M.; **Singer, H. P.**; Hollender, J., *Identifying Small Molecules via High Resolution Mass Spectrometry: Communicating Confidence*. *Environmental Science & Technology* 2014, 48, (4), 2097-2098.
- Qi, W.; Mueller, B.; Pernet-Coudrier, B.; **Singer, H.**; Liu, H.; Qu, J.; Berg, M., *Organic micropollutants in the Yangtze River: Seasonal occurrence and annual loads*. *Science of the Total Environment* 2014, 472, 789-799.
- Moschet, C.; Wittmer, I.; Simovic, J.; Junghans, M.; Piazzoli, A.; **Singer, H.**; Stamm, C.; Leu, C.; Hollender, J., *How a Complete Pesticide Screening Changes the Assessment of Surface Water Quality*. *Environmental Science & Technology* 2014, 48, (10), 5423-5432.
- Hollender, J.; Bourgin, M.; Fenner, K. B.; Longree, P.; McArdell, C. S.; Moschet, C.; Ruff, M.; Schymanski, E. L.; **Singer, H. P.**, *Exploring the Behaviour of Emerging Contaminants in the Water Cycle using the Capabilities of High Resolution Mass Spectrometry*. *Chimia* 2014, 68, (11), 793-798.
- Gros, M.; Cruz-Morato, C.; Marco-Urrea, E.; Longree, P.; **Singer, H.**; Sarra, M.; Hollender, J.; Vicent, T.; Rodriguez-Mozaz, S.; Barcelo, D., *Biodegradation of the X-ray contrast agent iopromide and the fluoroquinolone antibiotic ofloxacin by the white rot fungus *Trametes versicolor* in hospital wastewaters and identification of degradation products*. *Water Research* 2014, 60, 228-241.
- Chiaia-Hernandez, A. C.; Schymanski, E. L.; Kumar, P.; **Singer, H. P.**; Hollender, J., *Suspect and nontarget screening approaches to identify organic contaminant records in lake sediments*. *Analytical and Bioanalytical Chemistry* 2014, 406, (28), 7323-7335.
- Stravs, M. A.; Schymanski, E. L.; **Singer, H. P.**; Hollender, J., *Automatic recalibration and processing of tandem mass spectra using formula annotation*. *Journal of Mass Spectrometry* 2013, 48, (1), 89-99.
- Moschet, C.; Piazzoli, A.; **Singer, H.***; Hollender, J., *Alleviating the Reference Standard Dilemma Using a Systematic Exact Mass Suspect Screening Approach with Liquid Chromatography-High Resolution Mass Spectrometry*. *Analytical Chemistry* 2013, 85, (21), 10312-10320.
- Moschet, C.; Gotz, C.; Longree, P.; Hollender, J.; **Singer, H.***, *Multi-Level Approach for the Integrated Assessment of Polar Organic Micropollutants in an International Lake Catchment: The Example of Lake Constance*. *Environmental Science & Technology* 2013, 47, (13), 7028-7036.
- Kovalova, L.; Siegrist, H.; **Singer, H.**; Wittmer, A.; McArdell, C. S., *Hospital Wastewater Treatment by Membrane Bioreactor: Performance and Efficiency for Organic Micropollutant Elimination*. *Environmental Science & Technology* 2012, 46, (3), 1536-1545.

Huntscha, S.; **Singer, H. P.***; McArdell, C. S.; Frank, C. E.; Hollender, J., *Multiresidue analysis of 88 polar organic micropollutants in ground, surface and wastewater using online mixed-bed multilayer solid-phase extraction coupled to high performance liquid chromatography-tandem mass spectrometry*. Journal of Chromatography A 2012, 1268, 74-83.

Heeb, F.; **Singer, H.***; Pernet-Coudrier, B.; Qi, W. X.; Liu, H. J.; Longree, P.; Muller, B.; Berg, M., *Organic Micropollutants in Rivers Downstream of the Megacity Beijing: Sources and Mass Fluxes in a Large-Scale Wastewater Irrigation System*. Environmental Science & Technology 2012, 46, (16), 8680-8688.

Wittmer, I. K.; Scheidegger, R.; Bader, H. P.; **Singer, H.**; Stamm, C., *Loss rates of urban biocides can exceed those of agricultural pesticides*. Science of the Total Environment 2011, 409, (5), 920-932.

Kern, S.; **Singer, H.**; Hollender, J.; Schwarzenbach, R. P.; Fenner, K., *Assessing Exposure to Transformation Products of Soil-Applied Organic Contaminants in Surface Water: Comparison of Model Predictions and Field Data*. Environmental Science & Technology 2011, 45, (7), 2833-2841.

Wittmer, I. K.; Bader, H. P.; Scheidegger, R.; **Singer, H.**; Luck, A.; Hanke, I.; Carlsson, C.; Stamm, C., *Significance of urban and agricultural land use for biocide and pesticide dynamics in surface waters*. Water Research 2010, 44, (9), 2850-2862.

Singer, H.; Jaus, S.; Hanke, I.; Luck, A.; Hollender, J.; Alder, A. C., *Determination of biocides and pesticides by on-line solid phase extraction coupled with mass spectrometry and their behaviour in wastewater and surface water*. Environmental Pollution 2010, 158, (10), 3054-3064.

Neset, T.-S. S.; **Singer, H.**; Longree, P.; Bader, H.-P.; Scheidegger, R.; Wittmer, A.; Andersson, J. C. M., *Understanding consumption-related sucralose emissions - A conceptual approach combining substance-flow analysis with sampling analysis*. Science of the Total Environment 2010, 408, (16), 3261-3269.

Krauss, M.; **Singer, H.***; Hollender, J., *LC-high resolution MS in environmental analysis: from target screening to the identification of unknowns*. Analytical and Bioanalytical Chemistry 2010, 397, (3), 943-951.

Knauert, S.; **Singer, H.**; Hollender, J.; Knauer, K., *Phytotoxicity of atrazine, isoproturon, and diuron to submersed macrophytes in outdoor mesocosms*. Environmental Pollution 2010, 158, (1), 167-174.

Kern, S.; Baumgartner, R.; Helbling, D. E.; Hollender, J.; **Singer, H.**; Loos, M. J.; Schwarzenbach, R. P.; Fenner, K., *A tiered procedure for assessing the formation of biotransformation products of pharmaceuticals and biocides during activated sludge treatment*. Journal of Environmental Monitoring 2010, 12, (11), 2100-2111.

Helbling, D. E.; Hollender, J.; Kohler, H.-P. E.; **Singer, H.**; Fenner, K., *High-Throughput Identification of Microbial Transformation Products of Organic Micropollutants*. Environmental Science & Technology 2010, 44, (17), 6621-6627.

Hanke, I.; Wittmer, I.; Bischofberger, S.; Stamm, C.; **Singer, H.***, *Relevance of urban glyphosate use for surface water quality*. Chemosphere 2010, 81, (3), 422-429.

Gotz, C. W.; Stamm, C.; Fenner, K.; **Singer, H.**; Scharer, M.; Hollender, J., *Targeting aquatic microcontaminants for monitoring: exposure categorization and application to the Swiss situation*. Environmental Science and Pollution Research 2010, 17, (2), 341-354.

- Dodd, M. C.; Rentsch, D.; **Singer, H. P.**; Kohler, H.-P. E.; von Gunten, U., *Transformation of beta-Lactam Antibacterial Agents during Aqueous Ozonation: Reaction Pathways and Quantitative Bioassay of Biologically-Active Oxidation Products*. Environmental Science & Technology 2010, 44, (15), 5940-5948.
- Vermeirssen, E. L. M.; Bramaz, N.; Hollender, J.; **Singer, H.**; Escher, B. I., *Passive sampling combined with ecotoxicological and chemical analysis of pharmaceuticals and biocides - evaluation of three Chemcatcher (TM) configurations*. Water Research 2009, 43, (4), 903-914.
- Kern, S.; Fenner, K.; **Singer, H. P.**; Schwarzenbach, R. P.; Hollender, J., *Identification of Transformation Products of Organic Contaminants in Natural Waters by Computer-Aided Prediction and High-Resolution Mass Spectrometry*. Environmental Science & Technology 2009, 43, (18), 7039-7046.
- Hollender, J.; Zimmermann, S. G.; Koepke, S.; Krauss, M.; McArdell, C. S.; Ort, C.; **Singer, H.**; von Gunten, U.; Siegrist, H., *Elimination of Organic Micropollutants in a Municipal Wastewater Treatment Plant Upgraded with a Full-Scale Post-Ozonation Followed by Sand Filtration*. Environmental Science & Technology 2009, 43, (20), 7862-7869.
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