

Curriculum Vitae

Personal information **Giulia Callegaro**

Work experience

01/06/2022 – CURRENT

ASSISTANT PROFESSOR IN DRUG SAFETY AND TOXICOGENOMICS LEIDEN UNIVERSITY, LACDR, DRUG DISCOVERY AND SAFETY

1. Research and development of new toxicogenomics approaches for risk assessment (<https://txqmapr.eu/>), supported by EU grants (RISK-HUNT3R, eTRANSafe)
2. Supervision of PhD students and undergraduate students
3. Teaching of a master course (Regulation of Drug Safety) at the Biopharmaceutical Science master programme (Leiden University)
4. guest lecturer at the Msc and Bsc programme in Biopharmaceutical Science

1/06/2022 – 1/06/2023

VISITING SCIENTIST CERTARA

30/11/2021 – 31/05/2022

RESEARCH SCIENTIST CERTARA

1. coordinate and contribute to Certara's involvement in the EU funded project RISK-HUNT3R
2. provide expertise to support QSTS team products (Secondary Intelligence)
Contact: Will Redfern, PhD - will.redfern@certara.com
Website <https://www.certara.com/>

30/11/2021 – 31/05/2022

GUEST RESEARCHER LEIDEN UNIVERSITY, LACDR, DRUG DISCOVERY AND SAFETY

30/11/2017 – 11/2021

POSTDOCTORAL RESEARCHER LEIDEN UNIVERSITY, LACDR, DRUG DISCOVERY AND SAFETY

1. Development and maintenance of the Shiny application TXG-MAPr (<http://txg-mapr.eu/>), gene coexpression analysis for safety risk assessment.
2. WP7 co-leader in IMI funded project eTRANSafe (<https://etransafe.eu/>).
3. Collaborator in multiple European funded project (TransQST, EUToxRisk, Risk-Hunt3R).
4. Co-promoter of two PhD candidates.
5. Teaching: guest lecturer at the Msc and Bsc programme in Biopharmaceutical Science (UL), Msc student supervision.
6. Member of consultative organs (institute council) and initiator and board member of the first Leiden University postdoc association
Contact: Prof. Bob van de Water - water_b@lacdr.leidenuniv.nl

31/01/2017 – 31/08/2017

RESEARCH FELLOW UNIVERSITY OF MILANO-BICOCCA, ENVIRONMENTAL SCIENCES U1

1. Project "Energetic metabolism role in the transformation process induced by cadmium" (Promebio).
2. Development of image analysis pipelines to quantify mitochondrial morphological features and cytoplasm localization.
Contact: Chiara Urani, PhD - chiara.urani@unimib.it

Education and training

31/01/2014 – 31/03/2017 Milano, Italy

PHD LIFE SCIENCE University of Milano-Bicocca

1. Development of image analysis pipelines and image databases to automate the visual scoring of the Cell Transformation Assay.
2. Application of statistical models by using the quantitative imaging data: classification of compounds into carcinogenicity classes, dose response modelling.
3. Unravel the mechanisms of in vitro cellular transformation by Cadmium: different mechanisms underlie the same phenotype & initial phases of Cadmium toxicity involves Zinc displacement.
Contact: Prof. Federico M. Stefanini- federico.stefanini@unimi.it
Address Environmental Sciences U1, Piazza dell'Ateneo Nuovo, 1, 20126, Milano, Italy
Website <https://www.unimib.it/> Field of study Biology, Environmental sciences Final grade Excellent
Thesis Fostering Cell Transformation Assay in carcinogenicity assessment: toward in vitro-in silico bridging

30/09/2011 – 30/09/2013 Milano, Italy

MASTER OF SCIENCE IN ENVIRONMENTAL SCIENCES AND TECHNOLOGIES University of Milano-Bicocca
Address Environmental Sciences U1, Piazza dell'Ateneo Nuovo, 1, 20126, Milano, Italy

Website <https://www.unimib.it/> Field of study Environmental sciences Final grade 110/110 cum laude
30/09/2008 – 30/09/2013 Milano, Italy

BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCES University of Milano-Bicocca

Address Environmental Sciences U1, Piazza dell'Ateneo Nuovo, 1, 20126, Milano, Italy

Website <https://www.unimib.it/> Field of study Environmental sciences Final grade 110/110 cum laude

Publications

- Identifying multiscale translational safety biomarkers using a network-based systems approach – 2023
Callegaro, G., Schimming, J.P., Piñero, González J., Kunnen, S.J., Wijaya, L., Trairatphisan, P., van den Berk, L., Beetsma, K., Furlong, L.I., Sutherland, J.J., Mollon, J., Stevens, J.L., van de Water, B. *iScience*, Volume 26, Issue 3
- Application of high-throughput transcriptomics for mechanism-based biological read-across of short-chain carboxylic acid analogues of valproic acid – 2022
Vrijenhoek NG, Wehr MM, Kunnen SJ, Wijaya LS, Callegaro G, Moné MJ, Escher SE, Van de Water B. *ALTEX*, Jan 17
- Mapping the cellular response to electron transport chain inhibitors reveals selective signaling networks triggered by mitochondrial perturbation. – 2022
van der Stel W, Yang H, Vrijenhoek NG, Schimming JP, Callegaro G, Carta G, Darici S, Delp J, Forsby A, White A, le Dévédec S, Leist M, Jennings P, Beltman JB, van de Water B, Danen EHJ *Arch Toxicol.* Jan;96(1):259-285
- The human hepatocyte TXG-MAPr: gene co-expression network modules to support mechanism based risk assessment. *Archives of Toxicology*, – 2021
Callegaro, G., Kunnen, S. J., Trairatphisan, P., Grosdidier, S., Niemeijer, M., den Hollander, W., Guney, E., Piñero Gonzalez, J., Furlong, L., Webster, Y. W., Saez-Rodriguez, J., Sutherland, J. J., Mollon, J., Stevens, J. L., & van de Water, B. *Archives of Toxicology*, 95(12):3745-3775
- The eTRANSAFE Project on Translational Safety Assessment through Integrative Knowledge Management: Achievements and Perspectives. – 2021
Pognan, F., Steger-Hartmann, T., Díaz, C., Blomberg, N., Bringezu, F., Briggs, K., Callegaro, G., Capella-Gutiérrez, S., Centeno, E., Corvi, J., Drew, P., Drew, W. C., Fernández, J. M., Furlong, L. I., Guney, E., Kors, J. A., Mayer, M. A., Pastor, M., Piñero, J., ... Sanz, F. *Pharmaceuticals*, 14(3), 237
- An ensemble learning approach for modeling the systems biology of drug-induced injury. – 2021
Aguirre-Plans, J., Piñero, J., Souza, T., Callegaro, G., Kunnen, S. J., Sanz, F., Fernandez-Fuentes, N., Furlong, L. I., Guney, E., & Oliva, B. *Biology Direct*, 16(1), 5
- In vitro and bioinformatics mechanistic-based approach for cadmium carcinogenicity understanding. – 2020
Oldani, M., Fabbri, M., Melchiorretto, P., Callegaro, G., Fusi, P., Gribaldo, L., Forcella, M., & Urani, C. *Toxicology in Vitro*, 65
- High-throughput confocal imaging of differentiated 3D liver-like spheroid cellular stress response reporters for identification of drug-induced liver injury liability. – 2019
Hiemstra, S., Ramaiahgari, S. C., Wink, S., Callegaro, G., Coonen, M., Meerman, J., Jennen, D., van den Nieuwendijk, K., Dankers, A., Snoeys, J., de Bont, H., Price, L., & van de Water, B. *Archives of Toxicology*, 93(10)
- Characterisation of the NRF2 transcriptional network and its response to chemical insult in primary human hepatocytes: implications for prediction of drug-induced liver injury. – 2018
Copple, I. M., den Hollander, W., Callegaro, G., Mutter, F. E., Maggs, J. L., Schofield, A. L., Rainbow, L., Fang, Y., Sutherland, J. J., Ellis, E. C., Ingelman-Sundberg, M., Fenwick, S. W., Goldring, C. E., van de Water, B., Stevens, J. L., & Park, B. K. *Archives of Toxicology*, 1–15
- Bayesian estimation of causal effects in carcinogenicity tests based upon CTA. – 2019
Stefanini, F. M., & Callegaro, G. *Springer Proceedings in Mathematics and Statistics*, 288.
- Toxicogenomics applied to in vitro Cell Transformation Assay reveals mechanisms of early response to cadmium. – 2018
Callegaro, G., Forcella, M., Melchiorretto, P., Frattini, A., Gribaldo, L., Fusi, P., Fabbri, M., & Urani, C. *Toxicology in Vitro*, 48
- Relationship between increasing concentrations of two carcinogens and statistical image descriptors of foci morphology in the cell transformation assay. – 2017
Callegaro, G., Corvi, R., Salovaara, S., Urani, C., & Stefanini, F. M. *Journal of Applied Toxicology*, 37(6)
- A comprehensive statistical classifier of foci in the cell transformation assay for carcinogenicity testing. – 2017
Callegaro, G., Malkoc, K., Corvi, R., Urani, C., & Stefanini, F. M. *Toxicology in Vitro*, 45
- Cadmium-transformed cells in the in vitro cell transformation assay reveal different proliferative behaviours and activated pathways. – 2016
Forcella, M., Callegaro, G., Melchiorretto, P., Gribaldo, L., Frattini, M., Stefanini, F. M., Fusi, P., & Urani, C. *Toxicology in Vitro*, 36, 71–80
- An improved classification of foci for carcinogenicity testing by statistical descriptors. – 2015
Callegaro, G., Stefanini, F. M., Colacci, A., Vaccari, M., & Urani, C. *Toxicology in Vitro*, 29(7)
- Objective scoring of transformed foci in BALB/c 3T3 cell transformation assay by statistical image descriptors. – 2013
Urani, C., Corvi, R., Callegaro, G., & Stefanini, F. M. *Toxicology in Vitro*, 27(6)

Projects

- eTRANSAFE (<https://etransafe.eu/>). **eTRANSAFE: data science to empower translational safety assessment.** Sanz F, Pognan F, Steger-Hartmann T, et al. *Nat. Rev. Drug. Discov.* 2023 Aug 22(8):605-606. I coordinated WP7 related to safety biomarker discovery together with Bob van de Water and Francois Pognant
- TransQST (<https://transqst.org/>) *Translational quantitative systems toxicology to improve the understanding of*

the safety of medicines. 2017-2021. I was involved in WP5 (liver toxicity)

- RISK-HUNT3R (<https://www.risk-hunt3r.eu/>). Ongoing. I am involved in WP5 (Chemical bioactivity assessment using high-throughput and high content technology), WP7 (Human translation) and WP8 (Integrated data modelling and uncertainty analysis of NGRA)

- PARC (<https://www.eu-parc.eu/>). Ongoing. I am involved in project 5.3.1.a (Systems toxicology approaches for mechanism-based chemical safety assessment)

- EFSA TD-TRAQ. Recently awarded project from EFSA on Toxicodynamic analysis based on high-throughput Transcriptomics for AOP driven human population variance Quantification

- EFSA TXG-MAP. Recently awarded project from EFSA on Translational quantitative Toxicogenomics mechanism-based AOP mapping for human NAM-based risk assessment (TXG-MAP)

Memberships

Other Relevant Information