



Prof. Barbara Rothen-Rutishauser  
Co-Chair BioNanomaterials  
Adolphe Merkle Institute  
University of Fribourg  
Fribourg, Switzerland

Receiving the Egon Naef Award in 2014 was an important achievement for my career, the research in my team and has supported to:

- Development of more **predictive models of healthy and diseased lung tissue**;
- **Interlaboratory studies** to harmonise protocols for regulatory acceptance;
- **Increased visibility** for alternative model development;
- **New collaborations** in Switzerland, Europe, and the United States;
- Further **awards** and **research funding**;
- **Expert** and **foundation board activities** in the field of 3R.

The most related achievements are summarised here:

Research activities:

- Work package leader in the project “Physiologically Anchored Tools for Realistic nanOMaterial hazard aSsessment” (PATROLS; H2020) (2018-2021)
- Work package leader in the project “ULtrafine particles from TRansportation – Health Assessment of Sources (ULTRHAS; H2020) (2021-2025)
- NRP79 Project - A regulatory step towards 3R: Refinement of in vitro – in vivo extrapolation (IVIVE) for predictive inhalation toxicology, PI B. Rothen-Rutishauser, Co-PI: F. Blank (2022-2026)

Publications (Full list: <https://orcid.org/0000-0002-7805-9366>):

- Drasler B, Sayre P, Steinhäuser KG, Petri-Fink A, **Rothen-Rutishauser B**. In vitro approaches to assess the hazard of nanomaterials. *NanoImpact* 8, 99-116 (2017).
- Barosova H, Maione AG, Septiadi D, Sharma M, Haeni L, Balog S, O'Connell O, Jackson GR, Brown D, Clippinger AJ, Hayden P, Petri-Fink A, Stone V, **Rothen-Rutishauser B**. Use of EpiAlveolar Lung Model to Predict Fibrotic Potential of Multiwalled Carbon Nanotubes. *ACS Nano* 14(4):3941-3956 (2020).
- Bas A, Burns N, Gulotta A, Junker J, Drasler B, Lehner R, Aicher L, Constant S, Petri-Fink A, **Rothen-Rutishauser B**. Understanding the Development, Standardization, and Validation Process of Alternative In Vitro Test Methods for Regulatory Approval from a Researcher Perspective. *Small* 17(15):e2006027 (2021).
- Bannuscher A, Schmid O, Drasler B, Rohrbasser A, Braakhuis HM, Meldrum K, Zwart EP, Gremmer ER, Birk B, Rissel M, Landsiedel R, Moschini E, Evans SJ, Kumar P, Orak S, Doryab A, Erdem JS, Serchi T, Vandebriel RJ, Cassee FR, Doak SH, Petri-Fink A, Zienolddiny S, Clift MJD, **Rothen-Rutishauser B**. An inter-laboratory effort to harmonize the cell-delivered in vitro dose of aerosolized materials. *NanoImpact* 28:100439 (2022).

Expert activities:

- Representative of Switzerland for the Federal Institute of Public Health to adapt OECD test guidelines on inhalation toxicity testing for nanomaterial safety testing
- ProSafe Task Force expert under Horizon 2020 to write a report about cell models used in nanomaterials research
- Panel Member of the Swedish Research Council for Medicine and Health 2022 and 2023; MH-3R (Development of methods to replace, reduce and refine animal experiments)

Awards:

- Prix Fond Carlo de La Fondation Philanthropia 2015
- PETA International Science Consortium Ltd. Award 2015 for the development of an in vitro lung test to predict the toxicity of inhaled nanomaterials
- Run4Science Award 2017 for the project "Automatized engineering of human epithelial tissue barriers by a bioprinting approach - the next generation of in vitro alternatives"
- Career Achievement Award 2021 from the International Society of Aerosol Medicine

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