Stanford

Adrian Hugenmatter

Director of Protein Engineering

Sarafan ChEM-H

Bio

BIO

Dr. Adrian Hugenmatter joined ChEM-H as Director of Protein Engineering in 2021. In his role, Dr. Hugenmatter heads the Protein Engineering Laboratory at the Nucleus and is responsible for the development of therapeutic proteins at the Innovative Medicines Accelerator (IMA). Dr. Hugenmatter obtained his PhD in the laboratory of Prof. Donald Hilvert at the Swiss Federal Institute of Technology in Zurich (ETH Zurich, Switzerland), where he gained initial experience in the fields of enzymology, antibody engineering and directed evolution. Fascinated by protein engineering, he moved to the laboratory of Prof. Dan Tawfik at the Weizmann Institute of Science (Israel), where he studied molecular evolution and its application in protein design. Dr. Hugenmatter then worked for more than a decade as a researcher and team leader at Roche. During this time, he was involved in the development and optimization of several antibody lead candidates for therapeutic applications in neuroscience and oncology.

ACADEMIC APPOINTMENTS

- Senior Research Scientist, Sarafan ChEM-H

HONORS AND AWARDS

- Roche Innovator Award, Roche (2014)
- Fellowship, Swiss Society of Friends of the Weizmann Institute (2007)

PATENTS

- Nicole Borin, Lorenzo Deho, Christian Gassner, Adrian Hugenmatter, Xavier Gueripel, Christian Klein, Gregory La Sala, Elena Menietti, Ekkehard Moessner, Aparna Neelakandhan, Mudita Pincha, Pablo Umana, Anna Vangone. "United States Patent WO/2026/073840 Antibodies that bind to CD3 and uses thereof", Hoffmann-La Roche Inc., Sep 9, 2025
- Adrian Hugenmatter, Ashley Utz, Matthew Armbrust, Peter S. Kim. "United States Patent WO2025230768A1 Compositions and methods related to coronavirus therapies", Leland Stanford Junior University, Apr 22, 2025
- Borin Nicole , Deho Lorenzo , Gassner Christian Robert , Gueripel Xavier , Hugenmatter Adrian , Klein Christian , La Sala Gregory , Leclair Stephane Gerard Alain , Mende Fanny , Menietti Elena , Moessner Ekkehard , Pincha Mudita , Umana Fernandez Pablo. "United States Patent WO 2025/125386 A1 Antibodies that bind to FOLR1 and methods of use", Hoffmann La Roche, Dec 12, 2024
- Lorenzo Deho, Christian Gassner, Sylvia Herter, Thomas Hofer, Ralf Hosse, Adrian Hugenmatter, Christian Klein, Florian Limani, Ekkehard Moessner, Melanie Obba, Bianca Scherer, Pablo Umaña. "Switzerland Patent WO2022117692A3 pH-dependent Mutant Interleukin-2 Polypeptides", Hoffmann-La Roche Inc., Dec 2, 2021
- Petra Rueger, Georg Tiefenthaler, Ekkehard Moessner, Jens Niewoehner, Adrian Hugenmatter, Cuiying shao, Francesca Ros, Gang Xu. "United States Patent US2017051071A1 Monovalent Blood Brain Barrier Shuttle Modules", Hoffmann-La Roche Inc., Jul 6, 2016
- Stefan Dengl, Thomas Emrich, Guy Georges, Ulrich Goepfert, Fiona Grueninger, Adrian Hugenmatter, Anton Jochner, Hubert Kettenberger, Joerg Moelleken, Ekkehard Moessner, Olaf Mundigl, Jens Niewoehner, Tilman Schlothauer, Michael Molhoj, Kevin Brady. "United States Patent US2016376352A1 Humanzed Anti-Tau(pS422) Antibodies and Methods of Use", Hoffmann-La Roche Inc., Jun 22, 2016
- Minh Diem Vu, Klaus Strein, Oliver Ast, Marina Bacac, Peter Bruenker, Tanja Fauti, Anne Freimoser-Grundschober, Ralf Hosse, Adrian Hugenmatter, Christiane Jaeger, Christian Klein, Ekkehard Moessner, Samuel Moser, Pablo Umana. "United States Patent US2017327579A1 Bispecific Antibodies against CD3epsilon and BCMA", ENGMAB AG, Nov 18, 2015

- Bernd Bohrmann, Per-Ola Freskgard, Adrian Hugenmatter, Erhard Kopetzki, Ekkehard Moessner, Jens Niewoehner, Hadassah Sumum Sade, Pablo Umana. "United States Patent US2012282176A1 Method and Constructs for the pH Dependent Passage of the Blood-brain-barrier", Roche Glycart AG, Nov 8, 2012

Publications

PUBLICATIONS

- **Engineering of acidic pH-responsive anti-CD3 binding antibodies.** *mAbs*
  La Sala, G., Kroell, K. B., Pincha, M., Gassner, C., Deho, L., Moessner, E., Gueripel, X., Borin, N., Classen, M., Benz, J., Bujotzek, A., Klein, C., Georges, et al
  2026; 18 (1): 2658902

- **Development of ACE2-tropic-betacoronavirus therapeutics for future pandemic preparedness.** *Nature communications*
  Utz, A., Armbrust, M., Nguyen, T. T., Morris, M. K., Matthews, C. O., Kompella, P., Cao, Z., Ha, J. W., Violette, A., Brewer, R. C., Lanz, T. V., Robinson, W. H., Xu, et al
  2025

- **A human blood-brain barrier transcytosis assay reveals antibody transcytosis influenced by pH-dependent receptor binding.** *PloS one*
  Sade, H., Baumgartner, C., Hugenmatter, A., Moessner, E., Freskgård, P. O., Niewoehner, J.
  2014; 9 (4): e96340

- **The evolutionary origins of detoxifying enzymes: the mammalian serum paraoxonases (PONs) relate to bacterial homoserine lactonases.** *The Journal of biological chemistry*
  Bar-Rogovsky, H., Hugenmatter, A., Tawfik, D. S.
  2013; 288 (33): 23914-27

- **Directed evolution of serum paraoxonase PON3 by family shuffling and ancestor/consensus mutagenesis, and its biochemical characterization.** *Biochemistry*
  Khersonsky, O., Rosenblat, M., Toker, L., Yacobson, S., Hugenmatter, A., Silman, I., Sussman, J. L., Aviram, M., Tawfik, D. S.
  2009; 48 (28): 6644-54