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ASBMB-Merck Award for Manajit Hayer-Hartl

The American Society for Biochemistry and Molecular Biology honors Manajit Hayer-Hartl with the 2020/2021 ASBMB-Merck Award.

The American Society for Biochemistry and Molecular Biology (ASBMB) honors Manajit Hayer-Hartl, group leader of the research group “Chaperonin-assisted Protein Folding” at the Max Planck Institute of Biochemistry, with the 2020/2021 ASBMB-Merck Award. With this award, the ASBMB acknowledges Hayer-Hartl’s outstanding contributions to research in the fields of biochemistry and molecular biology. Her Award lecture at the ASBMB annual meeting will take place on April 27, 2021. The Award is sponsored by Merck.

Photosynthesis is vital for life on earth. The central step of this process is catalyzed by the enzyme Rubisco, which allows the incorporation of CO₂ from the atmosphere into organic matter. However, in plants, this essential enzyme operates only with limited efficiency. How can this enzyme’s function be optimized? Manajit Hayer-Hartl and her team were the first researchers able to synthesize plant Rubisco in *Escherichia coli*. Previous to this breakthrough, it was unknown how to synthesize plant Rubisco in the lab because of its complicated assembly comprising eight large and eight small subunits. The research group identified the chaperones and factors necessary for the Rubisco folding and assembly process, which includes four Rubisco specific chaperones from plants. By adding the chaperones, the team produced a functional plant Rubisco in the lab. This breakthrough opens up future possibilities for optimizing the enzyme’s function with the potential to increase crop performance.

About the Awardee

Hayer-Hartl received her Bachelor of Science degree at the University of Stirling, Scotland, UK, where she afterwards gained her PhD. Her interest in structural and cellular biology motivated her to several postdoctoral fellowships at renowned research institutions, among them the Louis Pasteur Institute in Strasbourg, France and the Sloan-Kettering Institute in New York, USA. Hayer-Hartl joined the Max Planck Institute of Biochemistry in 1997 as a group leader in the department “Cellular Biochemistry”. Since 2006, she is head of the research group “Chaperonin-assisted Protein Folding”. Her research focuses on chaperones and how these molecular machines assist in proper protein folding and assembly. Hayer-Hartl is an elected



member of the European Molecular Biology Organization (EMBO) and of the German National Academy of Sciences (Leopoldina). For her research, she has previously received the Dorothy Crowfoot Hodgkin Award (Protein Society) and the Charles F. Kettering Award (American Society of Plant Biologists).



Caption:

Manajit Hayer-Hartl

Photo: Susanne Vondenbusch © MPI of Biochemistry

About the Max Planck Institute of Biochemistry

The Max Planck Institute of Biochemistry (MPIB) belongs to the Max Planck Society, an independent, non-profit research organization dedicated to top-level basic research. As one of the largest Institutes of the Max Planck Society, about 800 employees from 45 nations work here in the field of life sciences. In currently about 35 departments and research groups, the scientists contribute to the newest findings in the areas of biochemistry, cell biology, structural biology, biophysics and molecular science. The MPIB in Munich-Martinsried is part of the local life-science-campus in close proximity to the Max Planck Institute of Neurobiology, a Helmholtz Center, the Gene-Center, several bio-medical faculties of the Ludwig-Maximilians-Universität München and the Innovation and Founding Center Biotechnology (IZB).

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