

## CV of Reinhard Sterner

Education	1988 1991 1996	Diploma in Biology, University of Munich Dissertation in Biology, University of Munich Habilitation in Biochemistry, University of Basel
Career	1991-1997 1997-1999 1999-2003 Since 2004	Postdoc, Biozentrum, University of Basel Heisenberg fellow, University of Göttingen Professor of Biochemistry, University of Cologne Chair of Biochemistry, University of Regensburg
Fellowships	1988-1991 1997-1999	PhD fellowship (state of Bavaria) Heisenberg fellowship (DFG)
Editorial and society activities	Since 2010 Since 2008 Since 2006	Member, editorial board of "Biological Chemistry" Member, editorial board of "Biochemistry" German representative of the "International Network of Protein Engineering Centres"
Research Interests		Protein design; structure, function and evolution of enzymes; allosteric interactions in multi-enzyme complexes

### Selected publications:

- Schupfner, M., Straub, C., Busch, F., Merkl, R. & Sterner, R. (2020). Analysis of allosteric communication in a multienzyme complex by ancestral sequence reconstruction. *Proc. Natl. Acad. Sci. USA* **117**, 346-354.
- Kneuttinger, A.C., Straub, K., Bittner, P., Simeth, N.A., Bruckmann, A., Busch, F., Rajendran, C., Hupfeld, E., Wysocki, V.H., Horinek, D., König, B., Merkl, R., & Sterner, R. (2019). Light regulation of enzyme allostery through photo-responsive unnatural amino acids. *Cell Chem. Biol.* **26**, 1501–1514
- Plach, M.G., Semmelmann, F., Busch, F., Busch, M., Heizinger, L., Wysocki, V.H., Merkl, R. & Sterner, R. (2017). Evolutionary diversification of protein-protein interactions by interface add-ons. *Proc. Natl. Acad. Sci. USA* **114**, E8333-E8342.
- Reisinger, B., Sperl, J., Holinski, A., Schmid, V., Rajendran, C., Carstensen, L., Schlee, S., Blanquart, S., Merkl, R. & Sterner, R. (2014). Evidence for the existence of elaborate enzyme complexes in the Paleoproterozoic era. *J. Am. Chem. Soc.* **136**, 122–129.
- Reisinger, B., Kuzmanovic, N., Löffler, P., Merkl, R., König, B. & Sterner, R. (2014). Exploiting protein symmetry to design light-controllable enzyme inhibitors. *Angew. Chem. Int. Ed.* **53**, 595-598.
- Carstensen, L., Sperl, J., Bocola, M., List, F., Schmid, F.-X. & Sterner, R. (2012). Conservation of the folding mechanism between designed primordial ( $\beta\alpha$ )<sub>8</sub>-barrel proteins and their modern descendant. *J. Am. Chem. Soc.* **134**, 12786-12791.
- Claren, J., Malisi, C., Höcker, B. & Sterner, R. (2009). Establishing wild-type levels of catalytic activity on natural and artificial ( $\beta\alpha$ )<sub>8</sub>-barrel protein scaffolds. *Proc. Natl. Acad. Sci. USA* **106**, 3704-3709.
- Höcker, B., Claren, J. & Sterner, R. (2004). Mimicking enzyme evolution by generating ( $\beta\alpha$ )<sub>8</sub>-barrels from ( $\beta\alpha$ )<sub>4</sub>-half-barrels. *Proc. Natl. Acad. Sci. USA* **101**, 16448-16453.
- Höcker, B., Beismann-Driemeyer, S., Hettwer, S., Lustig, A. & Sterner, R. (2001). Dissection of a ( $\beta\alpha$ )<sub>8</sub>-barrel enzyme into two folded halves. *Nature Structural Biology* **8**, 32-36.
- Jürgens, C., Strom, A., Wegener, D., Hettwer, S., Wilmanns, M. & Sterner, R. (2000). Directed evolution of a ( $\beta\alpha$ )<sub>8</sub>-barrel enzyme to catalyze related reactions in two different metabolic pathways. *Proc. Natl. Acad. Sci. USA* **97**, 9925-9930.
- Lang, D., Thoma, R., Henn-Sax, M., Sterner, R. & Wilmanns, M. (2000). Structural evidence for evolution of the  $\beta/\alpha$  barrel scaffold by gene duplication and fusion. *Science* **289**, 1546-1550.