

Cover Picture

Florian Toepert, José R. Pires, Christiane Landgraf, Hartmut Oschkinat, and Jens Schneider-Mergener

The cover picture shows an array of several hundred synthetically produced variants of the 44 amino acids comprising the hyAP-WW protein domain. The array was produced by a stepwise SPOT synthesis on a cellulose membrane. At each synthesis site (spot) a WW domain is bound to the membrane through a C-terminal ester bond. The secondary structure of the WW domain is shown in green as a ribbon. The domains of the single spots differ only by a single amino acid. All the domains were tested simultaneously for their ability to bind to a peptide motif (red) common to many proteins. The binding was evident when visualized by chemoluminescence, with the Spots having various intensities. The systematic analysis undertaken here enabled molecular biology to be carried out that would have otherwise have required great effort, or not been done at all. This chemical technique also allows the construction of many non-genetically coded building blocks. Through the use of modern synthetic techniques for the coupling of peptides this method should also allow the synthesis of proteins. The combination of molecular biological and chemical methods opens up opportunities for the preparation of protein chips for diagnostics and drug discovery. More about this can be found in the article by Schneider-Mergener et al. on p. 897ff.

