## Lessons from Chemical and Biological Investigations of Peptides Built from Homologated Proteinogenic Amino Acids

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After a brief introduction outlining the preparation of  $\beta$ -amino acids and their assembly to  $\beta$ -peptides, the surprising properties of these novel peptides are described. The insertion of a simple CH<sub>2</sub>-group into each and every residue of a peptide with proteinogenic side chains opens a door into a new world with similarities and, at the same time, fundamental differences of structures and physiological properties. The journey into this world was only possible by hard-core organic synthesis.

