# The Design, Synthesis and Characterization of Scaffold-assembled Collagen Mimetics and Peptide Dendrimers Weibo Cai University of California, San Diego, 2004 2004

Self-assembling proteins and peptides are increasingly gaining interest for potential use as scaffolds in tissue engineering applications.Â  Short peptides and peptide amphiphiles that self-assemble into brillar hydrogel scaffolds are particularly interesting, in view of their topographical resemblance to the native extracel-lular matrix.Â  A detailed kinetic and structural characterization of the assembly process sug-gested that the proteins convert from initially soluble forms in random coil conformation to insoluble, antiparallel beta-sheet conformation.[43] The assembly process presented a lag phase characteristic of nucleation and growth kinetics; the lag phase disappeared with the addition of seeding nuclei or already assembled (eADF4) C16 brils. 5. Peptide dendrimers as mimetics 4. Peptide dendrimers as inhibitors Another promising application of peptide dendrimers has been realized in the general design of inhibitors. Multimerization of binding elements such as charge in a dendrimer is controllable and provides an unambiguous structure that can be rened by analogs with relative ease.Â  The increased binding afnity of dendrimers compared to monomeric peptides is becoming an important factor in the design of peptides aimed at inhibiting metastasis of various types of cancer cells. Application of Phenylphosphate Mimetics to the Design and Synthesis of Olefin Metathesis-Derived Grb2 SH2 Domain-Binding Macrocycles. Pages 180-181. Kang, Sang-Uk (et al.)Â  Design and Synthesis of Bicyclic Internal Î²-Turn Mimetics and their Applications toward Biologically Interesting Ligands. Pages 186-187. Min, Byoung J. (et al.)Â  Multivalent Peptide Dendrimers: Native Chemical Ligation as a Synthetic Tool. Pages 206-207. Malda, Hinke (et al.)