Title:	Stimuli controlled tuning of multi- component gels of Amyloidogenic peptides.
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Keywords:	Amyloidogenic peptides chemical structure Gelation in the multicomponent system
Issue Date:	11-Sep-2018
Publisher:	IISERM
Abstract:	Co-assembly and self-sorting are two underlying processes for the formation of molecular aggregates in supramolecular compounds. Investigation of the non-covalent interactions through above mentioned molecular self-assembly process has explored with the aid of several bio-inspired peptides. Molecular self-assembly process of these peptides was evaluated individually as well as in multicomponent wise through gelation studies. Amyloidogenic sequences VFF and FFA were the two bio-inspired tripeptides chosen. Sequence VFF and FFA have close similarity with Aβ 18–20 and Aβ 18–21 respectively of amyloid β peptide Aβ 1-42 . This specific hydrophobic fragment has a critical role in fibril formation in Alzheimer's disease 1 . The introduction of several groups like Boc (as a hydrophobic unit), ferrocene (as a redox-responsive and hydrophobic unit) and azo-benzene (as a light responsive unit) to the N-terminal side of the tripeptides makes changes in their self-assembly process which even leads a change in gelation properties. The gel-forming ability of these two tripeptides with the different N-terminal group has tuned with the help of several external stimuli. Combination of these individual tripeptides with the different N-terminal group lead to the formation of a multicomponent gel system. Triggering the self-assembly of this multicomponent system has also performed with the help of various external stimuli. The result of this phenomena leads to the selective activation or deactivation of individual components in the multicomponent gel. Chapter 1 covers a rough introduction to supramolecular chemistry and gelation. Investigation of gel properties has done with the help of MGC values, UV-Vis Spectroscopy, SEM and rheological studies which are briefly explained in chapter 2. Synthesis and characterization in above mentioned single and multicomponent gel systems were described in chapter 3.
URI:	http://hdl.handle.net/123456789/1051 (http://hdl.handle.net/123456789/1051)
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