SIgN Immunology Seminar



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Thermogelling polymers – What lies ahead?

Host
Dr Alessandra Mortellaro
Singapore Immunology Network, A*Star

Date
Wednesday
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Time
11am – 12pm

Venue
SIgN Seminar Room
Immunos Building
Level 4
Biopolis

Rapidly aging societies, demands for improved organ functions and repair of damaged tissues has led to the use of synthetic materials in different parts of the human body. Traditional covalent chemistry has served us well in terms of the design of materials. The future of soft biomaterials demands ease of synthesis, multi-functionality and efficacy. Supramolecular hydrogels are part of the next-generation of materials to enter the biomedical arena. These materials are three-dimensional entities built from crosslinking agents which bond non-covalently (via hydrogen bonds, – stacking and van der Waals interactions) to produce fibers and crosslinking among fibers.

Thermogelling polymers are a unique class of materials that have the ability to undergo a sol-to-gel transition when the temperature of the solution is raised. This change is reversible and has been the subject of intense research in the last decade. These materials have been used for drug delivery, gene delivery and tissue engineering. New design strategies for thermogelling polymers have emerged in recent years. The properties of these materials are vastly different from their covalent counterparts and the exciting developments are summarized in this talk.