

# BioMACROMOLECULES

JANUARY 2014

VOLUME 15, NUMBER 1

[pubs.acs.org/Biomac](http://pubs.acs.org/Biomac)



ACS Publications  
MOST TRUSTED. MOST CITED. MOST READ.

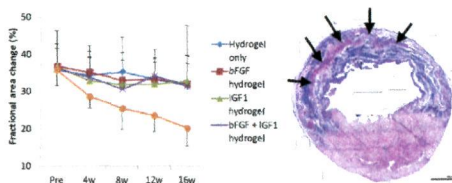
[www.acs.org](http://www.acs.org)

## Articles

1  [dx.doi.org/10.1021/bm4010639](https://doi.org/10.1021/bm4010639)

### Intramyocardial Injection of a Synthetic Hydrogel with Delivery of bFGF and IGF1 in a Rat Model of Ischemic Cardiomyopathy

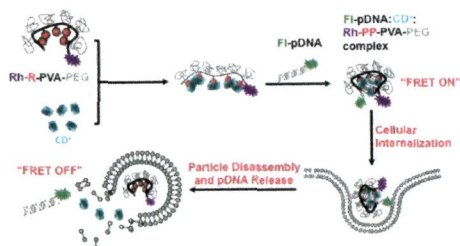
Devin M. Nelson, Ryotaro Hashizume, Tomo Yoshizumi, Anna K. Blakney, Zuwei Ma, and William R. Wagner\*



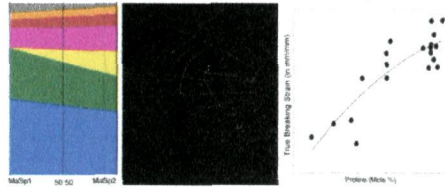
12  [dx.doi.org/10.1021/bm401096v](https://doi.org/10.1021/bm401096v)

### Effect of Pendant Group on pDNA Delivery by Cationic- $\beta$ -Cyclodextrin:Alkyl-PVA-PEG Pendant Polymer Complexes

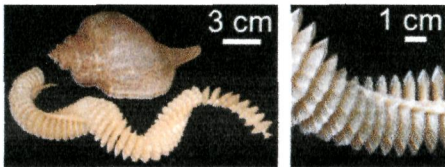
Aditya Kulkarni, Vivek Badwaik, Kyle DeFrees, Ryan A. Schuldt, Dinara S. Gunasekera, Cory Powers, Alexander Vlahu, Ross VerHeul, and David H. Thompson\*



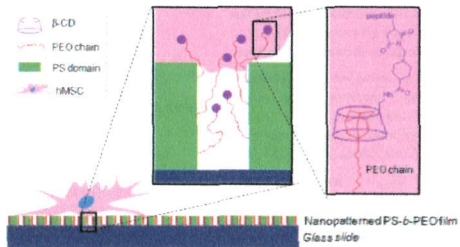
**Protein Composition Correlates with the Mechanical Properties of Spider (*Argiope trifasciata*) Dragline Silk**  
 Mohammad Marhabaie,\* Thomas C. Leeper, and Todd A. Blackledge



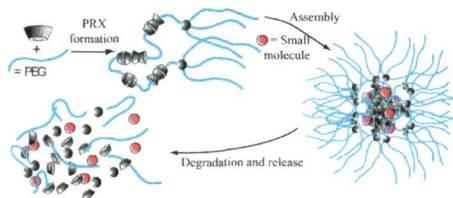
**Structural Proteins from Whelk Egg Capsule with Long Range Elasticity Associated with a Solid-State Phase Transition**  
 S. Scott Wasko, Gavin Z. Tay, Andreas Schwaighofer, Christoph Nowak, J. Herbert Waite,\* and Ali Miserez\*



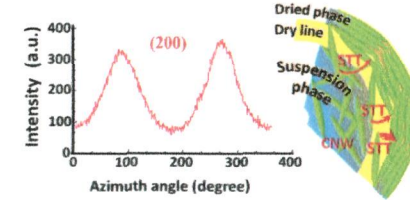
**Modulation of Stem Cell Adhesion and Morphology via Facile Control over Surface Presentation of Cell Adhesion Molecules**  
 Haiqing Li, Jessica Frith, and Justin J. Cooper-White\*



**Self-Assembled Stimuli-Responsive Polyrotaxane Core-Shell Particles**  
 Blaise L. Tardy, Henk H. Dam, Marloes M. J. Kamphuis, Joseph J. Richardson, and Frank Caruso\*

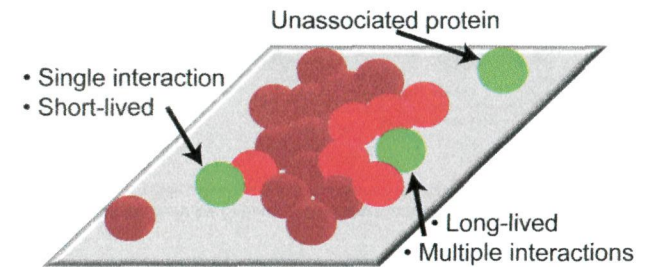


**Tunable Self-Assembly of Cellulose Nanowhiskers and Polyvinyl Alcohol Chains Induced by Surface Tension Torque**  
 Mahdi Mashkour,\* Tsunehisa Kimura, Fumiko Kimura, Mehrdad Mashkour, and Mehdi Tajvidi



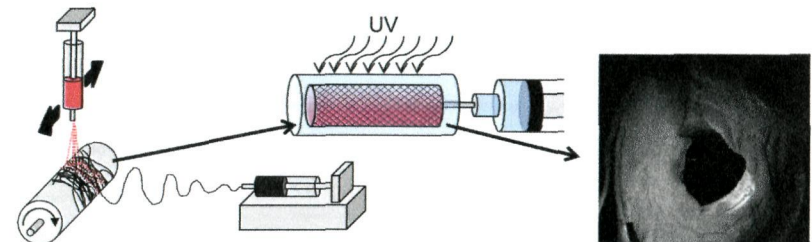
**Interfacial Protein-Protein Associations**

Blake B. Langdon, Mark Kastantin, Robert Walder, and Daniel K. Schwartz\*



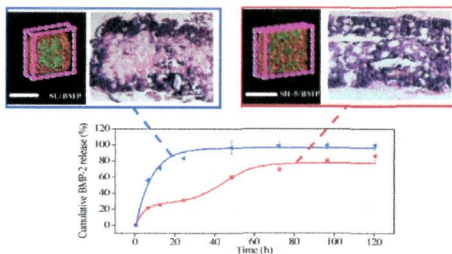
**Cellularized Cylindrical Fiber/Hydrogel Composites for Ligament Tissue Engineering**

Patrick S. Thayer, Anna F. Dimling, Daniel S. Plessl, Mariah R. Hahn, Scott A. Guelcher, Linda A. Dahlgren, and Aaron S. Goldstein\*



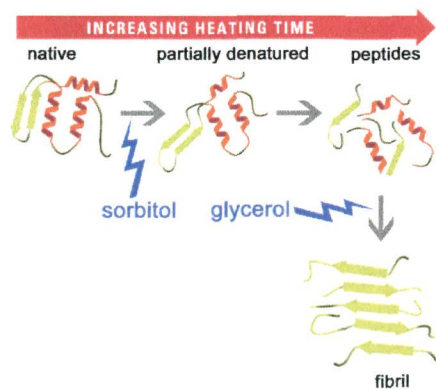
### In Situ Controlled Release of rhBMP-2 in Gelatin-Coated 3D Porous Poly( $\epsilon$ -caprolactone) Scaffolds for Homogeneous Bone Tissue Formation

Qingchun Zhang, Ke Tan, Yan Zhang, Zhaoyang Ye,\* Wen-Song Tan, and Meidong Lang\*



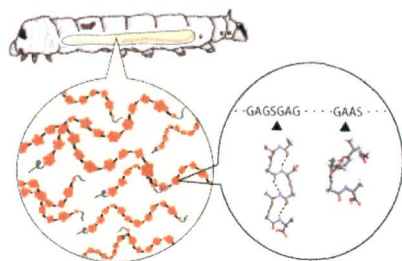
### Modulating $\beta$ -Lactoglobulin Nanofibril Self-Assembly at pH 2 Using Glycerol and Sorbitol

Anant C. Dave, Simon M. Loveday,\* Skelte G. Anema, Geoffrey B. Jameson, and Harjinder Singh



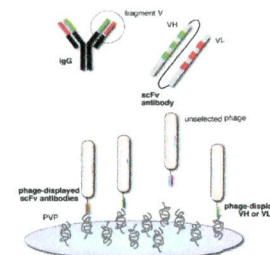
### NMR Study of the Structures of Repeated Sequences, GAGXGA (X = S, Y, V), in *Bombyx mori* Liquid Silk

Yu Suzuki, Toshimasa Yamazaki, Akihiro Aoki, Heisaburo Shindo, and Tetsuo Asakura\*



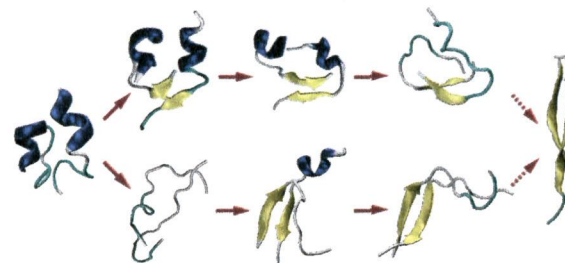
### General In Vitro Method to Analyze the Interactions of Synthetic Polymers with Human Antibody Repertoires

Anandakumar Soshee, Stefan Zürcher, Nicholas D. Spencer, Avraham Halperin, and Clément Nizak\*



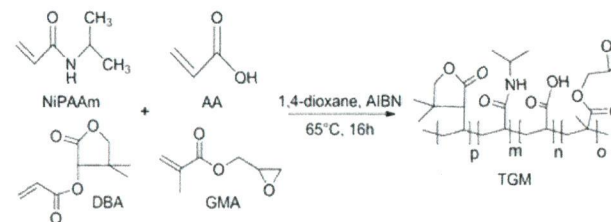
### Conformational Distribution and $\alpha$ -Helix to $\beta$ -Sheet Transition of Human Amylin Fragment Dimer

Ruxi Qi, Yin Luo, Buyong Ma,\* Ruth Nussinov, and Guanghong Wei\*



### Synthesis, Physicochemical Characterization, and Cytocompatibility of Bioresorbable, Dual-Gelling Injectable Hydrogels

Tiffany N. Vo, Adam K. Ekenseair, F. Kurtis Kasper, and Antonios G. Mikos\*

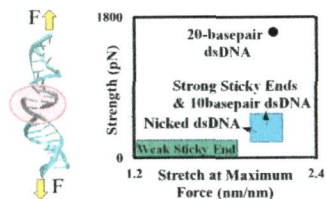


143

### Strength of DNA Sticky End Links

Ehsan Ban and Catalin R. Picu\*

dx.doi.org/10.1021/bm401425k

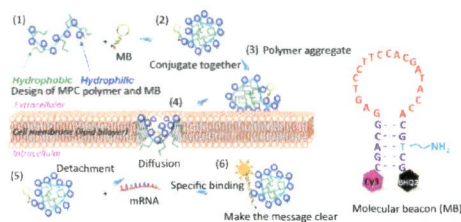


150

### Cell-Membrane-Permeable and Cytocompatible Phospholipid Polymer Nanoprobes Conjugated with Molecular Beacons

Xiaojie Lin, Tomohiro Konno, and Kazuhiko Ishihara\*

dx.doi.org/10.1021/bm401433k

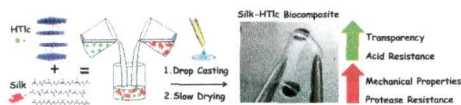


158

### Innovative Multifunctional Silk Fibroin and Hydrotalcite Nanocomposites: A Synergic Effect of the Components

Tamara Posati\*, Valentina Benfenati\*, Anna Sagnella, Assunta Pistone, Morena Nocchetti, Anna Donnadio, Giampiero Ruani, Roberto Zamboni, and Michele Muccini\*

dx.doi.org/10.1021/bm401433b

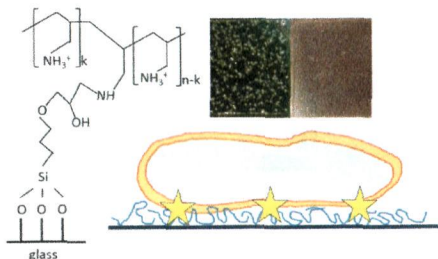


169

### Antimicrobial Surfaces Using Covalently Bound Polyallylamine

Dmitri D. Iarikov, Mehdi Kargar, Ali Sahari, Lauren Russel, Katelyn T. Gause, Bahareh Behkam, and William A. Ducker\*

dx.doi.org/10.1021/bm401440h



10A

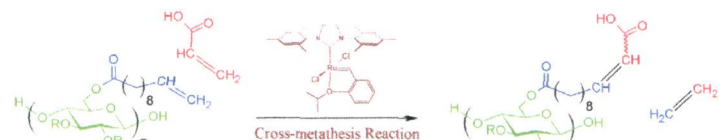
Biomacromolecules, Volume 15, Issue 1

177

### Olefin Cross-Metathesis as a Source of Polysaccharide Derivatives: Cellulose $\omega$ -Carboxyalkanoates

Xiangtao Meng, John B. Matson, and Kevin J. Edgar\*

dx.doi.org/10.1021/bm401447v

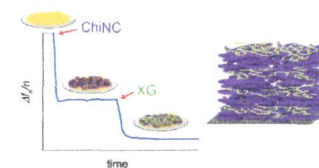


188

### Chitin Nanocrystal-Xyloglucan Multilayer Thin Films

Ana Villares\*, Céline Moreau, Isabelle Capron, and Bernard Cathala

dx.doi.org/10.1021/bm401474c

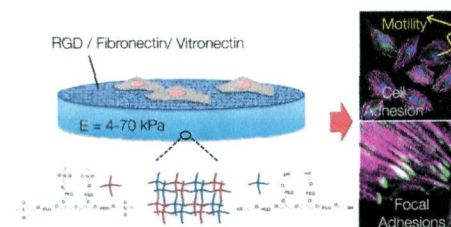


195

### Combined Effects of PEG Hydrogel Elasticity and Cell-Adhesive Coating on Fibroblast Adhesion and Persistent Migration

Dimitris Missiris\* and Joachim P. Spatz

dx.doi.org/10.1021/bm4014827



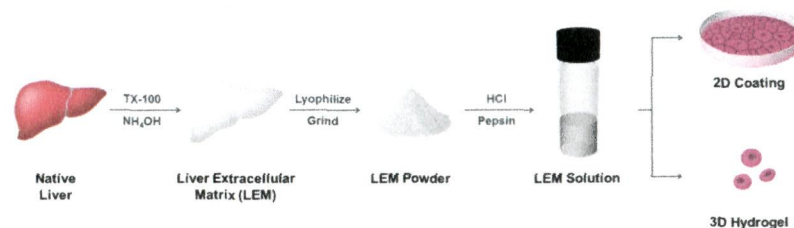
206

### Liver Extracellular Matrix Providing Dual Functions of Two-Dimensional Substrate Coating and Three-Dimensional

Injectable Hydrogel Platform for Liver Tissue Engineering

Jung Seung Lee, Jisoo Shin, Hae-Min Park, Yun-Gon Kim, Byung-Gee Kim, Jong-Won Oh, and Seung-Woo Cho\*

dx.doi.org/10.1021/bm4015039

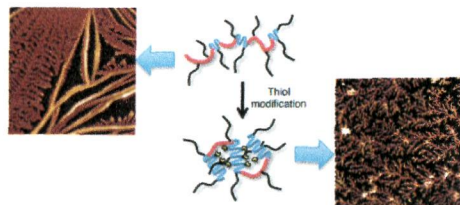


11A

Biomacromolecules, Volume 15, Issue 1

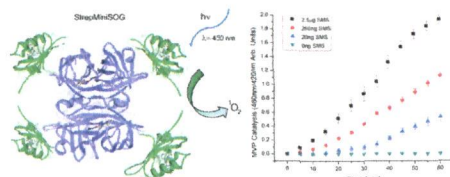
## Self-Assembly of High Molecular Weight Polypeptide Copolymers Studied via Diffusion Limited Aggregation

Christoph Meier,\* Yuzhou Wu, Goutam Pramanik, and Tanja Weil\*

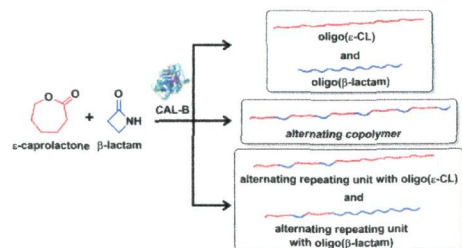


## A Streptavidin-SOG Chimera for All-Optical Immunoassays

Elizabeth M. Wurtzler and David Wendell\*

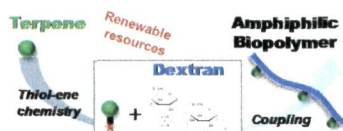
Lipase-Catalyzed Ring-Opening Copolymerization of  $\epsilon$ -Caprolactone and  $\beta$ -Lactam

E. Stavila, G. O. R. Alberda van Ekenstein, A. J. J. Woortman, and K. Loos\*



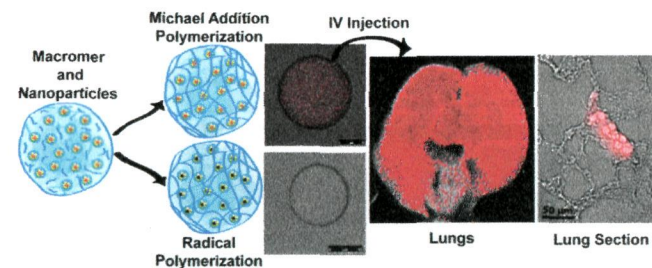
## Terpene and Dextran Renewable Resources for the Synthesis of Amphiphilic Biopolymers

Marie-Hélène Alvens, Huda Sfeir, Jean-François Tranchant, Emilie Gombart, Gilles Sagorin, Sylvain Caillon, Laurent Billon, and Maud Save\*



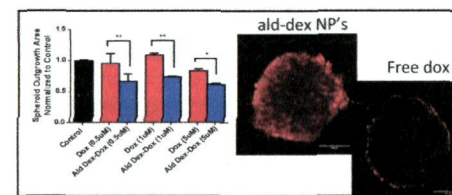
## Gelation Chemistries for the Encapsulation of Nanoparticles in Composite Gel Microparticles for Lung Imaging and Drug Delivery

Nathalie M. Pinkerton, Stacey W. Zhang, Richard L. Youngblood, Dayuan Gao, Shike Li, Bryan R. Benson, John Anthony, Howard A. Stone, Patrick J. Sinko, and Robert K. Prud'homme\*



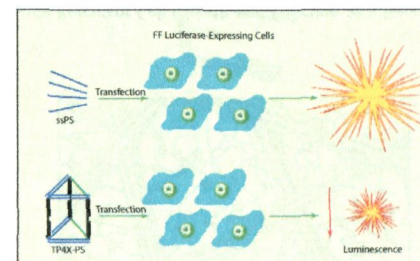
## Dextran-Based Doxorubicin Nanocarriers with Improved Tumor Penetration

Sharon M. Sagnella, Hien Duong, Alex MacMillan, Cyrille Boyer, Renee Whan, Joshua A. McCarroll, Thomas P. Davis, and Maria Kavallaris\*



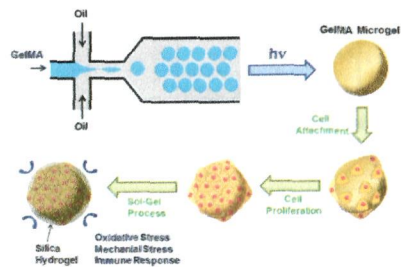
## Development and Characterization of Gene Silencing DNA Cages

Johans J. Fakhoury, Christopher K. McLaughlin, Thomas W. Edwardson, Justin W. Conway, and Hanadi F. Sleiman\*



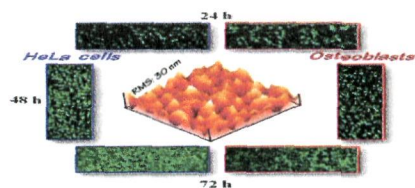
### Microfluidics-Assisted Fabrication of Gelatin-Silica Core-Shell Microgels for Injectable Tissue Constructs

Chaenyung Cha, Jonghyun Oh, Keekyoung Kim, Yiling Qiu, Maria Joh, Su Ryon Shin, Xin Wang, Gulden Camci-Unal, Kai-tak Wan, Rongliu Liao, and Ali Khademhosseini\*



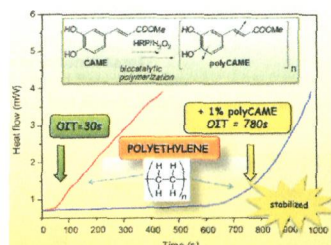
### Enhanced Cell Affinity of Chitosan Membranes Mediated by Superficial Cross-Linking: A Straightforward Method Attainable by Standard Laboratory Procedures

Eustolia Rodríguez-Velázquez,\* Maite Silva, Pablo Taboada, João F. Mano, David Suárez-Quintanilla, and Manuel Alatorre-Meda\*



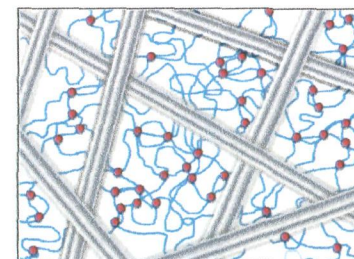
### An Antioxidant Bioinspired Phenolic Polymer for Efficient Stabilization of Polyethylene

Veronica Ambrogi, Lucia Panzella, Paola Persico, Pierfrancesco Cerruti,\* Carlo A. Lonz, Cosimo Carfagna, Luisella Verotta, Enrico Caneva, Alessandra Napolitano, and Marco d'Ischia\*



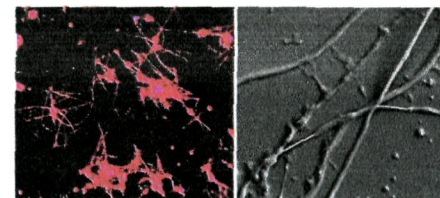
### Evidence for the Coexistence of Interpenetrating Permanent and Transient Networks of Hydroxypropyl Methyl Cellulose

Allahbakh Shahin, Taco Nicolai,\* Lazhar Benyahia, Jean-Francois Tassin, and Christophe Chassenieux



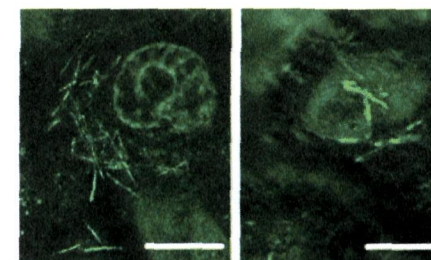
### Nanofibers Support Oligodendrocyte Precursor Cell Growth and Function as a Neuron-Free Model for Myelination Study

Yongchao Li, Muhammet Ceylan, Bikesh Shrestha, Haibo Wang, Q. Richard Lu, Ramazan Asmatulu, and Li Yao\*



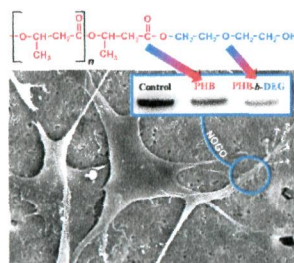
### Lignin Nanotubes As Vehicles for Gene Delivery into Human Cells

Elena Ten, Chen Ling, Yuan Wang, Arun Srivastava, Luisa Amelia Dempere, and Wilfred Vermeris\*



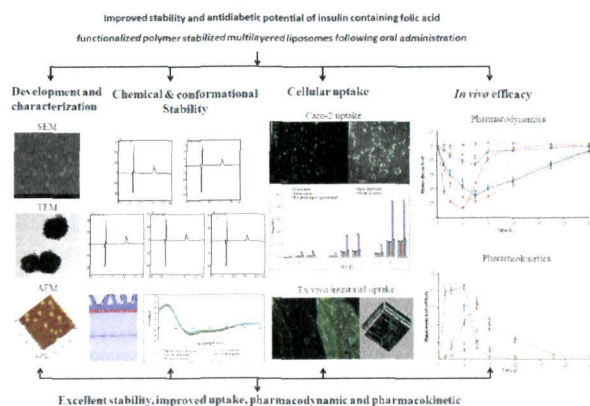
### BioPEGylation of Polyhydroxybutyrate Promotes Nerve Cell Health and Migration

Rodman T. H. Chan, Robert A. Russell, Helder Marçal, Terry H. Lee, Peter J. Holden, and L. John R. Foster\*



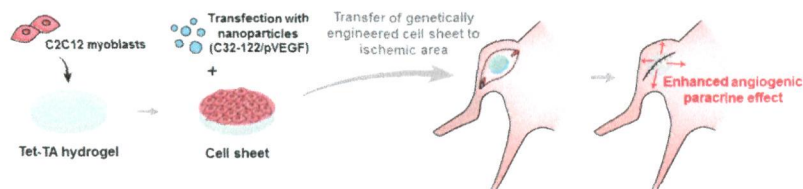
### Improved Stability and Antidiabetic Potential of Insulin Containing Folic Acid Functionalized Polymer Stabilized Multilayered Liposomes Following Oral Administration

Ashish Kumar Agrawal, Harshad Harde, Kaushik Thanki, and Sanyog Jain\*



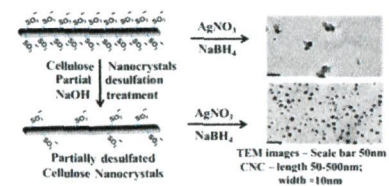
### Genetically Engineered Myoblast Sheet for Therapeutic Angiogenesis

Joan Lee, Indong Jun, Hyun-Ji Park, Taek Jin Kang, Heungsoo Shin,\* and Seung-Woo Cho\*



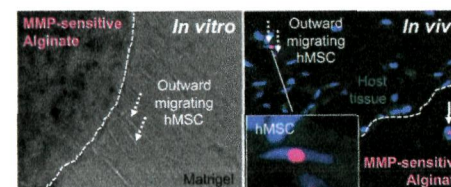
### Cellulose Nanocrystal-Mediated Synthesis of Silver Nanoparticles: Role of Sulfate Groups in Nucleation Phenomena

Arcot R. Lokanathan,\* Khan Mohammad Ahsan Uddin, Orlando J. Rojas,\* and Janne Laine



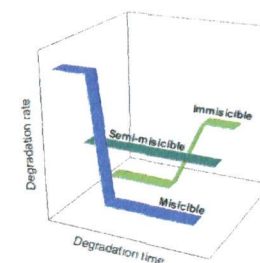
### Injectable MMP-Sensitive Alginate Hydrogels as hMSC Delivery Systems

Keila B. Fonseca, David B. Gomes, Kangwon Lee, Susana G. Santos, Aureliana Sousa, Eduardo A. Silva, David J. Mooney, Pedro L. Granja, and Cristina C. Barrias\*



### Tuning the Degradation Profiles of Poly(L-lactide)-Based Materials through Miscibility

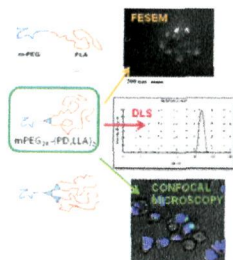
Veluska Arias, Anders Höglund, Karin Odellius, and Ann-Christine Albertsson\*





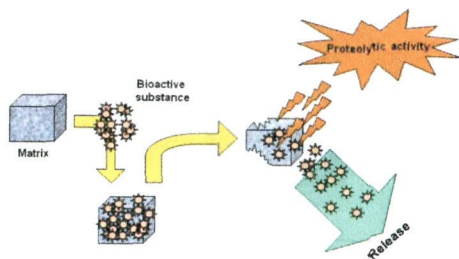
### Different Insight into Amphiphilic PEG-PLA Copolymers: Influence of Macromolecular Architecture on the Micelle Formation and Cellular Uptake

Cinzia Garofalo, Giovanna Capuano, Rosa Sottile, Rossana Talerico, Renata Adarni, Ernesto Reverchon, Ennio Carbone,\* Lorella Izzo,\* and Daniela Pappalardo\*



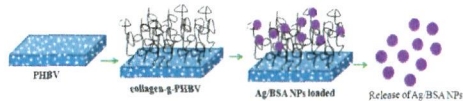
### Stimuli-Induced Release of Compounds from Elastin Biomimetic Matrix

Antonella Bandiera,\* Ana Markulin, Lucia Corich, Francesca Vita, and Violetta Borrelli



### Synthesis and Characterization of Collagen Grafted Poly(hydroxybutyrate–valerate) (PHBV) Scaffold for Loading of Bovine Serum Albumin Capped Silver (Ag/BSA) Nanoparticles in the Potential Use of Tissue Engineering Application

Rotimi A. Bakare, Chandra Bhan, and Dharmaraj Raghavan\*



### Potential Application of Hydrolyzed Fish Collagen for Inducing the Multidirectional Differentiation of Rat Bone Marrow Mesenchymal Stem Cells

Chao Liu and Jiao Sun\*

